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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2014-0621; Directorate Identifier 2013-NM-201-AD; Amendment 39-18133; AD 2015-07-05]**

**RIN 2120-AA64**

#### **Airworthiness Directives; BAE Systems (Operations) Limited Airplanes**

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

**ACTION:** Final rule.

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**SUMMARY:** We are adopting a new airworthiness directive (AD) for all BAE Systems (Operations) Limited Model BAe 146 series airplanes, and Model Avro 146-RJ series airplanes. This AD was prompted by a report of a pressurization problem on an airplane during climb-out; a subsequent investigation showed a crack in the fuselage skin. This AD requires require repetitive external eddy current inspections on the aft skin lap joints of the rear fuselage for cracking, corrosion, and other defects, and repair if necessary. We are issuing this AD to detect and correct cracking, corrosion, and other defects, which could affect the structural integrity of the airplane.

**DATES:** This AD becomes effective May 19, 2015.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of May 19, 2015.

**ADDRESSES:** You may examine the AD docket on the Internet at <http://www.regulations.gov/#!docketDetail;D=FAA-2014-0621>; or in person at the 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.

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; email [RApublications@baesystems.com](mailto:RApublications@baesystems.com); Internet

<http://www.baesystems.com/Businesses/RegionalAircraft/index.htm>. 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://regulations.gov> by searching for and locating Docket No. FAA-2014-0621.

**FOR FURTHER INFORMATION CONTACT:** Todd Thompson, Aerospace Engineer, International Branch, ANM 116, Transport Airplane Directorate, FAA, 1601 Lind Avenue SW., Renton, WA 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 by adding an AD that would apply to all BAE Systems (Operations) Limited Model BAe 146 series airplanes, and Model Avro 146-RJ series airplanes. The NPRM published in the Federal Register on September 3, 2014 (79 FR 52260).

The European Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Union, has issued EASA Airworthiness Directive 2013-0207, dated September 9, 2013 (referred to after this as the Mandatory Continuing Airworthiness Information, or "the MCAI"), to correct an unsafe condition for all BAE Systems (Operations) Limited Model BAe 146 series airplanes, and Model Avro 146-RJ series airplanes. The MCAI states:

In 2012, a pressurisation problem occurred on an AVRO 146-RJ100 aeroplane during climb-out. Subsequent investigation results identified a 42.87 inch (1089 mm) long crack in the fuselage skin in the rear fuselage drum, near the rear passenger door. The skin crack had initiated in the step of the skin land adjacent to a lap joint. In addition to the skin crack, cracks were found in Frames 41X and 42.

This condition, if not detected and corrected, could lead to degradation of the structural integrity of the aeroplane.

Prompted by this finding, BAE Systems (Operations) Ltd issued Inspection Service Bulletin (ISB) 53-239, providing instructions to inspect the internal area of the rear fuselage drum for cracks, corrosion and any other defects and EASA issued AD 2012-0178 [[http://ad.easa.europa.eu/blob/easa\\_ad\\_2012\\_0178\\_Superseded.pdf/AD\\_2012-0178\\_1](http://ad.easa.europa.eu/blob/easa_ad_2012_0178_Superseded.pdf/AD_2012-0178_1)] which required accomplishment of a one-time inspection of the affected fuselage area and, depending on findings, repair of cracked structural items.

Following the issuance of that [EASA] AD, some new information on additional damage found on the aeroplane that had the pressurisation problem resulted in a further review of the cracking event. This review concluded that the event was more serious than previously considered and that the compliance time must be reduced in order to mitigate the risk of cracking on other aeroplanes. As a result, EASA issued AD 2012-0184 [[http://ad.easa.europa.eu/blob/easa\\_ad\\_2012\\_0184\\_superseded.pdf/AD\\_2012-0184\\_1](http://ad.easa.europa.eu/blob/easa_ad_2012_0184_superseded.pdf/AD_2012-0184_1)] which superseded EASA AD 2012-0178.

After analysing the responses to EASA AD 2012-0184, which covered the initial inspection of stringer 30, left hand (LH) and right hand (RH), BAE Systems (Operations) Ltd also assessed the similar design features at other skin lands in the rear fuselage drum, namely at stringer 2 right and stringers 11 and 18, LH and RH. As a result, they determined that inspections at the other stringers would be required and also that repeat inspections of all these stringers would be necessary. Consequently, BAE Systems (Operations) Ltd ISB.53-239 Revision 1 and 2 were issued to include these new inspections.

For the reasons described above, this [EASA] AD retains the requirements of EASA AD 2012-0184, which is superseded, and requires accomplishment of additional inspections of the affected fuselage area, including repetitive inspections, and depending on findings, repair of cracked structural items.

The required actions include repetitive external eddy current inspections on the aft skin lap joints of the rear fuselage for cracking, corrosion, and other defects, and repair if necessary. You may examine the MCAI in the AD docket on the Internet at <http://www.regulations.gov/#!documentDetail;D=FAA-2014-0621-0002>.

### **Actions Since Issuance of NPRM (79 FR 52260, September 3, 2014)**

Since we issued the NPRM (79 FR 52260, September 3, 2014), we have received BAE Systems (Operations) Limited Inspection Service Bulletin 53-239, Revision 3, dated May 7, 2014. The new service information includes minor editorial changes.

We have revised paragraph (g)(1) of this AD to refer to BAE Systems (Operations) Limited Inspection Service Bulletin 53-239, Revision 3, dated May 7, 2014. We have also revised paragraph (i) of this AD to provide credit for BAE Systems (Operations) Limited Inspection Service Bulletin 53-239, Revision 2, dated July 15, 2013.

### **Comments**

We gave the public the opportunity to participate in developing this AD. We received no comments on the NPRM (79 FR 52260, September 3, 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 52260, September 3, 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 52260, September 3, 2014).

### **Related Service Information Under 1 CFR Part 51**

BAE Systems (Operations) Limited has issued Inspection Service Bulletin 53-239, Revision 3, dated May 7, 2014. The service information describes an external eddy current inspection on the aft skin lap joints of the rear fuselage for cracking, corrosion, and other defects, and repair. The actions described in this service information are intended to correct the unsafe condition identified in the MCAI. This service information is reasonably available; see ADDRESSES for ways to access this service information.

### **Costs of Compliance**

We estimate that this AD affects 1 airplane 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	8 work-hours × \$85 per hour = \$680 per inspection cycle	\$0	\$680 per inspection cycle	\$680 per inspection cycle.

We have received no definitive data that would enable us to provide cost estimates for the on-condition actions specified in this AD.

### 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);
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.

### Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov/#!docketDetail;D=FAA-2014-0621>; 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 street address for the Docket Operations office (telephone 800-647-5527) is in the ADDRESSES section.

### 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 adding the following new airworthiness directive (AD):



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**2015-07-05 BAE Systems (Operations) Limited:** Amendment 39-18133. Docket No. FAA-2014-0621; Directorate Identifier 2013-NM-201-AD.

**(a) Effective Date**

This AD becomes effective May 19, 2015.

**(b) Affected ADs**

None.

**(c) Applicability**

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.

**(d) Subject**

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

**(e) Reason**

This AD was prompted by a report of a pressurization problem on an airplane during climb-out; a subsequent investigation showed a crack in the fuselage skin. We are issuing this AD to detect and correct cracking, corrosion, and other defects, which could affect the structural integrity of the airplane.

**(f) Compliance**

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

**(g) Repetitive Inspections**

(1) Within the compliance times specified in paragraphs (g)(1)(i) and (g)(1)(ii) of this AD, as applicable: Do an external eddy current inspection on the aft skin lap joints of the rear fuselage for cracking, corrosion, and other defects (i.e., surface damage and spot displacement), in accordance with paragraph 2.C. of the Accomplishment Instructions of BAE Systems (Operations) Limited Inspection Service Bulletin 53-239, including Appendix 2, Revision 3, dated May 7, 2014.

(i) For any airplane which has accumulated 9,000 flight cycles or more since the airplane's first flight as of the effective date of this AD: Do the inspection within 1,000 flight cycles or 6 months after of the effective date of this AD, whichever occurs first.

(ii) For any airplane which has accumulated less than 9,000 flight cycles since the airplane's first flight as the effective date of this AD: Do the inspection before accumulating 10,000 flight cycles since the airplane's first flight.

(2) Repeat the inspection required by paragraph (g)(1) of this AD thereafter at intervals not to exceed the times specified in paragraphs (g)(2)(i) and (g)(2)(ii) of this AD, as applicable to the airplane's modification status.

(i) For Model BAe 146 series airplanes and Model Avro 146-RJ series airplanes post modification HCM50070E, or post modification HCM50070F, or post modification HCM50259A, repeat the inspection at intervals not to exceed 4,000 flight cycles.

(ii) For Model BAe 146 series airplanes and Model Avro 146-RJ series airplanes pre-modification HCM50070E, and pre-modification HCM50070F, and pre-modification HCM50259A, repeat the inspection at intervals not to exceed 7,500 flight cycles.

#### **(h) Corrective Action**

If any cracking, corrosion, or other defect is found during any inspection required by this AD: Before further flight, repair using a method approved by the Manager, International Branch, ANM-116, Transport Airplane Directorate, FAA; or the European Aviation Safety Agency (EASA); or BAE Systems (Operations) Limited's EASA Design Organization Approval (DOA). If approved by the DOA, the approval must include the DOA-authorized signature. Accomplishment of the repair does not constitute a terminating action for the inspections required by paragraph (g) of this AD.

#### **(i) Credit for Previous Actions**

(1) This paragraph provides credit for the initial inspection and corrective action on stringer 30, left hand (LH) and right hand (RH), as required by paragraph (g) of this AD, if those actions were performed before the effective date of this AD using BAE Systems (Operations) Limited Inspection Service Bulletin 53-239, dated June 13, 2012, which is not incorporated by reference in this AD.

(2) This paragraph provides credit for the initial inspection and corrective action, as required by paragraph (g) of this AD, if those actions were performed before the effective date of this AD using BAE Systems (Operations) Limited Inspection Service Bulletin 53-239, Revision 1, dated June 18, 2013, which is not incorporated by reference in this AD.

(3) This paragraph provides credit for the initial inspection and corrective action, as required by paragraph (g) of this AD, if those actions were performed before the effective date of this AD using BAE Systems (Operations) Limited Inspection Service Bulletin 53-239, Revision 2, dated July 15, 2013, which is not incorporated by reference in this AD.

#### **(j) Other FAA AD Provisions**

The following provisions also apply to this AD:

(1) Alternative Methods of Compliance (AMOCs): The Manager, International Branch, ANM-116, Transport Airplane Directorate, 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, WA 98057-3356; telephone 425-227-1175; fax 425-227-1149. Information may be emailed 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) Contacting the Manufacturer: For any requirement in this AD to obtain corrective actions from a manufacturer, the action must be accomplished using a method approved by the Manager, International Branch, ANM-116, Transport Airplane Directorate, FAA; or EASA; or BAE Systems

(Operations) Limited's EASA DOA. If approved by the DOA, the approval must include the DOA-authorized signature.

**(k) Related Information**

(1) Refer to Mandatory Continuing Airworthiness Information (MCAI) EASA Airworthiness Directive 2013-0207, dated September 9, 2013, for related information. This MCAI may be found in the AD docket on the Internet at <http://www.regulations.gov/#!documentDetail;D=FAA-2014-0621-0002>.

(2) Service information identified in this AD that is not incorporated by reference is available at the addresses specified in paragraphs (1)(3) and (1)(4) of this AD.

**(l) 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 this AD specifies otherwise.

(i) BAE Systems (Operations) Limited Inspection Service Bulletin 53-239, including Appendix 2, Revision 3, dated May 7, 2014.

(ii) Reserved.

(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; email [RApublications@baesystems.com](mailto:RApublications@baesystems.com); Internet <http://www.baesystems.com/Businesses/RegionalAircraft/index.htm>.

(4) 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.

(5) 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 19, 2015.

Michael Kaszycki,  
Acting Manager, Transport Airplane Directorate,  
Aircraft Certification Service.