



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2012-1157; Directorate Identifier 2012-NM-061-AD; Amendment 39-17371; AD 2013-04-13]**

**RIN 2120-AA64**

**Airworthiness Directives; BAE SYSTEMS (OPERATIONS) LIMITED Airplanes**

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

**ACTION:** Final rule.

**SUMMARY:** We are adopting a new airworthiness directive (AD) for all BAE SYSTEMS (OPERATIONS) LIMITED Model BAe 146 and Avro 146-RJ series airplanes. This AD was prompted by a report that certain ceramic terminal blocks, through which the wiring for the engine fire extinguishers, fire detection circuits, and engine and intake anti-ice system are routed, have been found to have moisture ingress, which can degrade the insulation resistance of the ceramic terminal blocks. This AD requires a one-time insulation resistance test of ceramic terminal blocks, and if necessary, replacement of the blocks. We are issuing this AD to prevent latent failure of the number 2 fire bottle, which, in the event of an engine fire, could result in failure of the fire bottle to discharge when activated and possibly preventing the flightcrew from extinguishing an engine fire.

**DATES:** This AD becomes effective [INSERT DATE 35 DAYS AFTER DATE OF

PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**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, 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 to include an AD that would apply to the specified products. That NPRM was published in the Federal Register on November 5, 2012 (77 FR 66415). That NPRM proposed to correct an unsafe condition for the specified products. The Mandatory Continuing Airworthiness Information (MCAI) states:

Moisture ingress has been discovered on certain ceramic terminal blocks, mounted on the engine cowlings, through which the wiring for the engine fire extinguishers, fire detection circuits and engine and intake anti ice system are routed. The affected terminal blocks were introduced through BAE Systems SB 71-077-01693A (modification

HCM01693A) during the period 2002-2004, as this modification was mandated by CAA UK AD 005-10-2001 [which corresponds with FAA AD 2003-03-10, Amendment 39-13034 (68 FR 4902, January 31, 2003)]. Moisture ingress has a detrimental effect on the insulation resistance of the ceramic terminal block with the resultant possibility of interconnections between all terminals. Most of the possible failure conditions in the terminal block should result in an evident warning or other indication. However, the functional loss of the number 2 fire bottle would be a dormant failure.

This condition, if not corrected, could result in the failure of a fire bottle to discharge when activated, possibly preventing the flight crew in extinguishing an engine fire.

For the reasons described above, this [European Aviation Safety Agency (EASA)] AD requires a one-time inspection of the ceramic terminal blocks to determine the insulation resistance and, depending on findings, replacement of terminal blocks, and the reporting of the results to the BAE Systems. These will be used to establish a suitable repetitive inspection interval, which is expected to be introduced through the Maintenance Review Board (MRB) process.

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 (77 FR 66415, November 5, 2012) 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 except for minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM (77 FR 66415, November 5, 2012) for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM (77 FR 66415, November 5, 2012).

### **Costs of Compliance**

We estimate that this AD will affect 2 products of U.S. registry. We also estimate that it will take about 10 work-hours per product to comply with the basic requirements of this AD. The average labor rate is \$85 per work-hour. Based on these figures, we estimate the cost of this AD to the U.S. operators to be \$1,700, or \$850 per product.

In addition, we estimate that any necessary follow-on actions would take about 1 work-hour and require parts costing \$949, for a cost of \$1,034 per product. We have no way of determining the number of products that may need these actions.

### **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.

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 (77 FR 66415, November 5, 2012), 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 adding the following new AD:

**2013-04-13 BAE SYSTEMS (OPERATIONS) LIMITED:** Amendment 39-17371.

Docket No. FAA-2012-1157; Directorate Identifier 2012-NM-061-AD.

**(a) Effective Date**

This airworthiness directive (AD) becomes effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**(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 24: Electrical Power.

**(e) Reason**

This AD was prompted by a report that certain ceramic terminal blocks, through which the wiring for the engine fire extinguishers, fire detection circuits, and engine and intake anti-ice system are routed, have been found to have moisture ingress, which can degrade the insulation resistance of the ceramic terminal blocks. We are issuing this AD to prevent latent failure of the number 2 fire bottle, which, in the event of an engine fire, could result in failure of the fire bottle to discharge when activated and possibly preventing the flightcrew from extinguishing an engine fire.

**(f) Compliance**

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

**(g) Inspection**

Within 4,000 flight cycles or 18 months, whichever occurs first after the effective date of this AD, do an insulation resistance test on each terminal block, in accordance with paragraphs 2.C., 2.D., 2.E., and 2.F. of the Accomplishment Instructions of BAE

SYSTEMS (OPERATIONS) LIMITED Inspection Service Bulletin 24-143, Revision 1, dated October 2, 2012.

**(h) Replacement**

If, during the test required by paragraph (g) of this AD, any terminal block is found to have a value of less than 50 megohms, before next flight, replace it with a new or serviceable terminal block, in accordance with paragraph 2.G. of the Accomplishment Instructions of BAE SYSTEMS (OPERATIONS) LIMITED Inspection Service Bulletin 24-143, Revision 1, dated October 2, 2012.

**(i) Inspection Report Difference**

Where BAE SYSTEMS (OPERATIONS) LIMITED Inspection Service Bulletin 24-143, Revision 1, dated October 2, 2012, specifies to complete the test result sheets in Appendices 1, 2, 3, and 4 and the inspection report in Appendix 6, and send the information to BAE SYSTEMS (OPERATIONS) LIMITED, this AD does not require that action.

**(j) Credit for Previous Actions**

This paragraph provides credit for actions required by paragraphs (g) and (h) of this AD, if those actions were performed before the effective date of this AD using BAE SYSTEMS (OPERATIONS) LIMITED Inspection Service Bulletin 24-143, dated September 26, 2011, which is not incorporated by reference in this AD.

**(k) 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](mailto: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.

**(l) Related Information**

(1) Refer to MCAI European Aviation Safety Agency Airworthiness Directive 2012-0040, dated March 13, 2012; and BAE SYSTEMS (OPERATIONS) LIMITED Inspection Service Bulletin 24-143, Revision 1, dated October 2, 2012; for related information.

(2) 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 review copies of the 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.

**(m) 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.

(i) BAE SYSTEMS (OPERATIONS) LIMITED Inspection Service Bulletin 24-143, Revision 1, dated October 2, 2012.

(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 review copies of the 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 February 21, 2013.

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

[FR Doc. 2013-04629 Filed 03/06/2013 at 8:45 am; Publication Date: 03/07/2013]