[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2016-9186; Directorate Identifier 2015-NM-160-AD]

RIN 2120-AA64

Airworthiness Directives; BAE Systems (Operations) Limited

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to supersede Airworthiness Directive (AD) 2012-16-08, for certain BAE Systems (Operations) Limited Model BAe 146 and Avro 146-RJ series airplanes. AD 2012-16-08 currently requires repetitive detailed inspections for bulging, surface anomalies, and cracking of the fuselage skin adjacent to the discharge valves, and repair and application of additional sealant in the affected area if necessary. Since we issued AD 2012-16-08, it was found that airplanes on which a certain modification was incorporated during production were excluded from the applicability, but are also affected by the condition that precipitated AD 2012-16-08. This proposed AD would retain the requirements of AD 2012-16-08, expand the applicability, and require an additional one-time inspection for the presence of water traps/air driers to determine which airplanes must be inspected. We are proposing this AD to detect and correct bulging, surface anomalies, and cracking that could propagate towards the forward discharge valve outlet and result in the failure of the fuselage skin, leading to a possible sudden loss of cabin pressure and injury to occupants.

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 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: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, 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; 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.

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-2016-9186; 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 Operations office (telephone 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Theodore 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:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the ADDRESSES section. Include "Docket No. FAA-2016-9186; Directorate Identifier 2015-NM-160-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 based on 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

On July 31, 2012, we issued AD 2012-16-08, Amendment 39-17155 (77 FR 48420, August 14, 2012) ("AD 2012-16-08"). AD 2012-16-08 requires repetitive detailed inspections for bulging, surface anomalies, and cracking of the fuselage skin adjacent to the discharge valves, and repair and application of additional sealant in the affected area if necessary.

Since we issued AD 2012-16-08, it was found that airplanes that have incorporated auto-pressurization modification No. HCM50259A during production, which were excluded from the applicability, are also affected by this condition. In addition, and in order to simplify instructions and determine affected airplanes, BAE Systems (Operations) Limited issued BAE Systems (Operations) Limited Inspection Service Bulletin ISB.21-162, Revision 4, dated January 28, 2015, introducing a one-time inspection to determine if water trap/air driers are installed.

The European Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Union, has issued EASA Airworthiness Directive 2015-0180, dated August 28, 2015 (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:

> An operator reported finding cracking and surface anomalies (bulges and/or dents) of the fuselage skin at the water trap/air drier unit of the forward discharge valve, located between fuselage frame (FR) 22 and FR23 and between stringers 22 and 23. Further investigation established that these surface anomalies were due to corrosion beneath the water trap/air drier unit that has resulted in cracking of the fuselage skin
>
> This condition, if not detected and corrected, could lead to failure of the fuselage skin, possibly resulting in loss of cabin pressure and injury to occupants.
>
> To address this potential unsafe condition, EASA issued AD 2011-0099 [which corresponds to FAA AD 2012-16-08] to require repetitive detailed visual inspections (DVI) of the fuselage skin adjacent to the front and rear discharge valves to check for bulging, surface anomalies and cracking, and, depending on findings, accomplishment of applicable corrective action(s), and the application of additional sealant in the affected area.
>
> Since that [EASA] AD was issued, it was found that aeroplanes that have incorporated auto-pressurisation modification No. HCM50259A during production, which were excluded from the Applicability, were also affected by this condition.
>
> In addition, and in order to simplify instructions for applicability, BAE Systems (Operations) Limited issued Revision 4 of Inspection Service Bulletin (ISB) No. 21-162, introducing a one-time inspection to identify if water trap/air driers are installed.
>
> For the reasons described above, this [EASA] AD retains the requirements of EASA AD 2011-0099, which is superseded, expands the Applicability and requires the additional one-time inspection as specified in the latest ISB revision.

You may examine the MCAI in the AD docket on the Internet at http://www.regulations.gov by searching for and locating Docket No. FAA-2016-9186.

Related Service Information under 1 CFR part 51

BAE Systems (Operations) Limited has issued BAE Systems (Operations) Limited Service Bulletin ISB.21-162, Revision 4, dated January 28, 2015. The service information describes procedures for a visual inspection of the internal fuselage at the location of the water trap/air driers to determine if water trap/air driers are installed; an external DVI for bulging, surface anomalies, and cracking of the fuselage skin adjacent to the forward and rear discharge valve outlets; repair; and sealant application.

BAE Systems (Operations) Limited has also issued the following service information, which describes procedures for structural repairs.

- Subject 53-00-00, "Fuselage, General Description," of Chapter 53, "Fuselage," of the BAE SYSTEMS BAe 146 Series/AVRO 146-RJ Series Structural Repair Manual for Series 100-200, Revision 68, dated October 15, 2014.
- Subject 53-00-00, "Fuselage, General Description," of Chapter 53, "Fuselage," of the BAe SYSTEMS BAE 146 Series/AVRO 146-RJ Series Structural Repair Manual for Series 300, Revision 46, dated October 15, 2014.

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.

FAA's Determination and Requirements of this Proposed AD

This product has been approved by the aviation authority of another country, and

is approved for operation in the United States. Pursuant to our bilateral agreement with the State of Design Authority, we have been notified of the unsafe condition described in the MCAI and service information referenced above. We are proposing this AD because we evaluated all pertinent information and determined an unsafe condition exists and is likely to exist or develop on other products of these same type designs.

Costs of Compliance

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

The actions required by AD 2012-16-08 and retained in this proposed AD take about 8 work-hours per product, at an average labor rate of $85 per work-hour. Required parts cost about $0 per product. Based on these figures, the estimated cost of the actions that are required by AD 2012-16-08 is $680 per product.

We also estimate that it would take about 8 work-hours per product to comply with the basic requirements of this proposed AD. The average labor rate is $85 per work-hour. Based on these figures, we estimate the cost of this proposed AD on U.S. operators to be $2,720, or $680 per product.

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

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 removing Airworthiness Directive (AD) 2012-16-08, Amendment 39-17155 (77 FR 48420, August 14, 2012), and adding the following new AD:

BAE Systems (Operations) Limited: Docket No. FAA-2016-9186; Directorate Identifier 2015-NM-160-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 replaces AD 2012-16-08, Amendment 39-17155 (77 FR 48420, August 14, 2012) ("AD 2012-16-08").

(c) Applicability

This AD applies to the airplanes identified in paragraphs (c)(1) and (c)(2) of this AD, certificated in any category, all serial numbers.

(1) BAE Systems (Operations) Limited Model BAe 146-100A, -200A, and -300A airplanes.

(2) BAE Systems (Operations) Limited Model Avro 146-RJ70A, 146-RJ85A, and 146-RJ100A airplanes.

(d) Subject

Air Transport Association (ATA) of America Code 21, Air Conditioning.

(e) Reason

This AD was prompted by reports of cracking and surface anomalies of the fuselage skin at the water trap/air drier unit of the forward discharge valve due to corrosion, and the determination that airplanes on which auto-pressurization modification No. HCM50259A was incorporated during production were excluded from the applicability of AD 2012-16-08, but are also affected by this condition. We are issuing this AD to detect and correct bulging, surface anomalies, and cracking that could propagate towards the forward discharge valve outlet and result in the failure of the fuselage skin, leading to a possible sudden loss of cabin pressure and injury to occupants.

(f) Compliance

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

(g) Retained Detailed Inspection of External Fuselage Skin, with Specific Delegation Approval Language

This paragraph restates the requirements of paragraph (g) of AD 2012-16-08, with specific delegation approval language. For all airplanes except airplanes that have incorporated auto-pressurization modification HCM50259A during production: Within 12 months after September 18, 2012 (the effective date of AD 2012-16-08), do a detailed

inspection to check for bulging, surface anomalies, and cracking of the fuselage skin adjacent to the discharge valve outlets (one frame fore and aft, one stringer above and below), in accordance with the Accomplishment Instructions of BAE Systems (Operations) Limited Inspection Service Bulletin ISB.21-162, Revision 1, dated September 16, 2010. Repeat the inspection thereafter at intervals not to exceed 24 months.

(1) If any bulging, surface anomalies, or cracking of the fuselage skin is found to be within the criteria defined in Subject 53-00-00, "Fuselage, General Description," of Chapter 53, "Fuselage," of the BAE SYSTEMS BAe 146 Series/AVRO 146-RJ Series Structural Repair Manual for Series 100-200, Revision 66, dated October 15, 2011 (for Model 146-100A and -200A, and Avro 146-RJ70A and 146-RJ85A airplanes); or Subject 53-00-00, "Fuselage, General Description," of Chapter 53, "Fuselage," of the BAe SYSTEMS BAE 146 Series/AVRO 146-RJ Series Structural Repair Manual for Series 300, Revision 44, dated October 15, 2011 (for Model 146-300A and Avro 146-RJ100A airplanes): Before further flight, repair the damage, in accordance with the Accomplishment Instructions specified in BAE Systems (Operations) Limited Inspection Service Bulletin ISB.21-162, Revision 1, dated September 16, 2010.

(2) If any bulging, surface anomalies, or cracking of the fuselage skin is found exceeding the criteria specified by Subject 53-00-00, "Fuselage, General Description," of Chapter 53, "Fuselage," of the BAE SYSTEMS BAe 146 Series/AVRO 146-RJ Series Structural Repair Manual for Series 100-200, Revision 66, dated October 15, 2011 (for Model 146-100A and -200A, and

Avro 146-RJ70A and 146-RJ85A airplanes); or Subject 53-00-00, "Fuselage, General Description," of Chapter 53, "Fuselage," of the BAE SYSTEMS BAE 146 Series/AVRO 146-RJ Series Structural Repair Manual for Series 300, Revision 44, dated October 15, 2011 (for Model 146-300A and Avro 146-RJ100A airplanes): Before further flight, repair the condition according to 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).

(h) Retained Application of Sealant, with No Changes

This paragraph restates the requirements of paragraph (h) of AD 2012-16-08, with no changes. For all airplanes except airplanes on which auto-pressurization modification HCM50259A was incorporated during production: Within 24 months after September 18, 2012 (the effective date of AD 2012-16-08), unless a repair has already been accomplished in accordance with paragraph (g) of this AD, apply additional PR1422A-2 or PR1764B-2 edge sealant between the water trap/air drier and the fuselage skin, in accordance with the Accomplishment Instructions of BAE Systems (Operations) Limited Inspection Service Bulletin ISB.21-162, Revision 1, dated September 16, 2010. Application of additional sealant does not constitute terminating action for the repetitive detailed inspections required by paragraph (g) of this AD. Accomplishment of a repair as required by paragraph (g) of this AD terminates the repetitive inspection requirements of paragraph (g) of this AD.

(i) New Requirement of this AD: Inspection for Water Traps/Air Driers

Within 12 months after the effective date of this AD, inspect the airplane to determine whether water traps/air driers are installed, in accordance with paragraph 2.C of BAE Systems (Operations) Limited Service Bulletin ISB.21-162, Revision 4, dated January 28, 2015 ("ISB.21-162 R4"). If there are no water traps/air driers installed on an airplane, then no further inspections are required by this AD, except as required by paragraph (n) of this AD.

(j) New Requirement of this AD: Repetitive Inspections

For airplanes that have water traps/air driers installed, determined as required by paragraph (i) of this AD: Within 12 months after the effective date of this AD, accomplish a detailed visual inspection for bulging, surface anomalies, and cracking of the external fuselage skin adjacent to the discharge valve outlets (one frame bay fore and aft, one stringer above and below), in accordance with the Accomplishment Instructions of paragraph 2.C. of ISB.21-162 R4. Repeat the inspection of the external fuselage skin adjacent to the discharge valve outlets thereafter at intervals not to exceed 24 months. Accomplishing an inspection required by this paragraph terminates the inspections required by paragraph (g) of this AD.

(k) New Requirement of this AD: Corrective Actions

If, during any detailed visual inspection required by paragraph (j) of this AD, any bulging, surface anomalies, or cracking is found, before further flight, accomplish the applicable corrective action as specified in paragraphs (k)(1) and (k)(2) this AD.

(1) If any bulging, surface anomalies, or cracking is found to be within the criteria as specified in the applicable service information specified in paragraph (k)(1)(i) or (k)(1)(ii) of this AD, before further flight, repair in accordance with the Accomplishment Instructions of paragraph 2.G. of ISB.21-162 R4.

(i) For Model BAe 146-100A and -200A airplanes, and Model Avro 146-RJ70A and 146-RJ85A airplanes: Subject 53-00-00, "Fuselage, General Description," of Chapter 53, "Fuselage," of the BAE SYSTEMS BAe 146 Series/AVRO 146-RJ Series Structural Repair Manual for Series 100-200, Revision 68, dated October 15, 2014.

(ii) For Model BAe 146-300A airplanes and Model Avro 146-RJ100A airplanes: Subject 53-00-00, "Fuselage, General Description," of Chapter 53, "Fuselage," of the BAe SYSTEMS BAE 146 Series/AVRO 146-RJ Series Structural Repair Manual for Series 300, Revision 46, dated October 15, 2014.

(2) If any bulging, surface anomalies, or cracking is found exceeding the criteria as specified in the applicable service information specified in paragraph (k)(1)(i) or (k)(1)(ii) of this AD, before further flight, repair 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.

(l) New Requirement of this AD: Application of Sealant

Within 24 months after the effective date of this AD, unless a repair has already been accomplished as required by paragraph (k) of this AD, apply additional sealant, in accordance with the Accomplishment Instructions of paragraph 2.C.(3) of ISB.21-162 R4. Application of additional sealant on an airplane does not constitute

terminating action for the repetitive inspections required by paragraph (j) of this AD for that airplane.

(m) New Terminating Action for Inspections Required by Paragraph (j) of this AD

Accomplishment of a repair on the forward (FWD) or aft (AFT) position as required by paragraph (k) of this AD constitutes terminating action for the repetitive inspections required by paragraph (j) of this AD for that FWD or AFT position.

(n) New Requirement of this AD: Actions for Airplanes on Which Water Trap/Air Driers are Installed after the Effective Date of this AD

For airplanes that, determined as required by paragraph (i) of this AD, do not have water traps/air driers installed: If water traps/air driers are installed in service after the effective date of this AD, accomplish the actions required by paragraphs (j), (k), and (l) of this AD on that airplane within the applicable compliance times specified in paragraphs (j), (k), and (l) of this AD; except that where paragraphs (j) and (l) of this AD refer to "the effective date of this AD," this AD requires compliance within the specified compliance time after the installation of water traps/air driers.

(o) Credit for Previous Actions

(1) This paragraph provides credit for inspections and sealant applications required by paragraphs (g) and (h) of this AD, if those actions were performed before September 18, 2012 (the effective date of AD 2012-16-08), using BAE SYSTEMS (OPERATIONS) LIMITED Inspection Service Bulletin ISB.21-162, dated June 7, 2010.

(2) This paragraph provides credit for using criteria defined in the following subject of the applicable structural repair manual, as required by paragraphs (g)(1) and

(g)(2) of this AD, if those criteria were used before September 18, 2012 (the effective date of AD 2012-16-08), using Subject 53-00-00, "Fuselage, General – Description," of Chapter 53, "Fuselage," of the BAE SYSTEMS BAe 146 Series/AVRO 146-RJ Series Structural Repair Manual for Series 100-200, Revision 65, dated September 15, 2010 (for Model 146-100A and -200A, and Avro 146-RJ70A and 146-RJ85A airplanes); or Subject 53-00-00, "Fuselage, General – Description," of Chapter 53, "Fuselage," of the BAE SYSTEMS BAe 146 Series/AVRO 146-RJ Series Structural Repair Manual for Series 300, Revision 43, dated September 15, 2010 (for Model 146-300A and Avro 146-RJ100A airplanes).

(3) This paragraph provides credit for actions required by paragraphs (i), (j), and (l) of this AD, if those actions were performed before the effective date of this AD using any of the service information specified in paragraphs (i)(3)(i) through (i)(3)(iv) of this AD.

(i) BAE Systems (Operations) Limited Inspection Service Bulletin ISB.21-162, dated June 7, 2010.

(ii) BAE Systems (Operations) Limited Inspection Service Bulletin ISB.21-162, Revision 1, dated September 16, 2010.

(iii) BAE Systems (Operations) Limited Inspection Service Bulletin ISB.21-162, Revision 2, dated December 12, 2012.

(iv) BAE Systems (Operations) Limited Inspection Service Bulletin ISB.21-162, Revision 3, dated January 15, 2013.

(p) 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: Theodore Thompson, Aerospace Engineer, 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: As of the effective date of this AD, 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 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.

(q) Related Information

(1) Refer to Mandatory Continuing Airworthiness Information (MCAI) EASA Airworthiness Directive 2015-0180, dated August 28, 2015, for related information. This MCAI may be found in the AD docket on the Internet at http://www.regulations.gov by searching for and locating Docket No. FAA-2016-9186.

(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; Internet http://www.baesystems.com/Businesses/RegionalAircraft/index.htm. 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 September 28, 2016.

Dionne Palermo,
Acting Manager,
Transport Airplane Directorate,
Aircraft Certification Service.
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