Notification of a Proposal to issue an Airworthiness Directive

PAD No.: 20-182

Issued: 18 November 2020

Note: This Proposed Airworthiness Directive (PAD) is issued by EASA, acting in accordance with Regulation (EU) 2018/1139 on behalf of the European Union, its Member States and of the European third countries that participate in the activities of EASA under Article 129 of that Regulation.

In accordance with the EASA Continuing Airworthiness Procedures, the Executive Director is proposing the issuance of an EASA Airworthiness Directive (AD), applicable to the aeronautical product(s) identified below.
All interested persons may send their comments, referencing the PAD Number above, to the e-mail address specified in the 'Remarks' section, prior to the consultation date indicated.

Design Approval Holder's Name:
BAE SYSTEMS (OPERATIONS) Ltd

Type/Model designation(s):
BAe 146 and AVRO 146-RJ aeroplanes

Effective Date: [TBD - standard: 14 days after AD issue date]

TCDS Number(s): EASA.A.182

Foreign AD: Not applicable

Supersedure: This AD supersedes EASA AD 2013-0207 dated 09 September 2013.

ATA 53 – Fuselage – Rear Fuselage Skin and Frames – Inspection

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Manufacturer(s):
BAE Systems (Operations) Ltd, British Aerospace plc, British Aerospace (Commercial Aircraft) Ltd, British Aerospace (Operations) Ltd, British Aerospace Regional Aircraft Ltd, British Aerospace Regional Aircraft trading as Avro International Aerospace.

Applicability:
BAe 146 and AVRO 146-RJ aeroplanes, all models, all serial numbers.

Definitions:
For the purpose of this AD, the following definitions apply:

The ISB: BAE Systems (Operations) Ltd Inspection Service Bulletin (ISB) 53-239 Revision (Rev.) 5.

Reason:
In 2012, a pressurization problem occurred on an AVRO 146-RJ100 aeroplane during climb-out. Subsequent investigation results identified a 42.87 inch (1 089 mm) long crack in the skin of 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. Cracks were also 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 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 to require accomplishment of a one-time low frequency eddy current (LFEC) inspection of the affected fuselage area at stringer 30, left-hand (LH) and right-hand (RH), and, depending on findings, repair of cracked structural items.

After that AD was issued, additional damage was found on the aeroplane that had the pressurization problem, and further review concluded that the compliance time for the one-time inspection had to be reduced in order to mitigate the risk of cracking on other aeroplanes. Consequently, EASA issued AD 2012-0184, retaining the requirements of EASA AD 2012-0178, which was superseded, reducing the compliance time accordingly.

After that AD was issued, similar design features in other areas of the rear fuselage drum were assessed, and it was determined that stringer 2 RH and stringers 11 and 18, LH and RH, could also be affected. Consequently, BAE Systems (Operations) Ltd issued ISB 53-239 Rev. 1 and Rev. 2 and EASA issued AD 2013-0207, retaining the requirements of EASA AD 2012-0184, which was superseded, to additionally require repetitive inspections of all affected areas and, depending on findings, repair of cracked structural items. Subsequently, ISB 53-239 Rev. 3 clarified the inspection requirements for aeroplanes with a large freight door, and ISB 53-239 Rev. 4 introduced an LFEC technique for inspection of skin lands with adjacent repair plates (EASA AMOC Approval 10058964).

Since EASA AD 2013-0207 was issued, errors were identified in the inspection instructions of ISB 53-239 Rev. 4 which resulted, for certain stringer 11 areas, in the calculation of an incorrect inspection interval. That ISB also referenced an inspection method that physically cannot be used to inspect repaired structure. Consequently, BAE Systems (Operations) Ltd published ISB 53-239 Rev. 5 (the ISB, as defined in this AD) to correct these errors.

For the reasons described above, this AD retains the requirements of EASA AD 2013-0207, which is superseded, and changes the inspection method for stringer 11 LH or RH, if no repair is embodied. It also reduces the threshold for the next inspection of stringer 11 LH and RH, where a repair is embodied, and changes the inspection method if the last inspection was accomplished using the instructions of ISB 53-239 Rev. 4.

Required Action(s) and Compliance Time(s):

Required as indicated, unless accomplished previously:

Inspection(s):

(1) Before exceeding the applicable threshold(s) as specified in Table 1 of the ISB and, thereafter, at intervals not to exceed the applicable values as specified in Table 1 of the ISB, accomplish an LFEC inspection in accordance with the instructions of the ISB.

Corrective Action(s):

(2) If, during any inspection as required by paragraph (1) of this AD, discrepancies are detected, before next flight, contact BAE Systems (Operations) Ltd for approved corrective action instructions and accomplish those instructions accordingly.

Terminating Action:
(3) None.

Ref. Publications:
BAE Systems (Operations) Ltd ISB.53-239 Revision 5 dated 02 March 2017.

The use of later approved revisions of the above-mentioned document is acceptable for compliance with the requirements of this AD.

Remarks:
1. This Proposed AD will be closed for consultation on 16 December 2020.

2. Enquiries regarding this PAD should be referred to the EASA Programming and Continued Airworthiness Information Section, Certification Directorate. E-mail: ADs@easa.europa.eu.

3. Information about any failures, malfunctions, defects or other occurrences, which may be similar to the unsafe condition addressed by this PAD, and which may occur, or have occurred on a product, part or appliance not affected by this PAD, can be reported to the EU aviation safety reporting system. This may include reporting on the same or similar components, other than those covered by the design to which this PAD applies, if the same unsafe condition can exist or may develop on an aircraft with those components installed. Such components may be installed under an FAA Parts Manufacturer Approval (PMA), Supplemental Type Certificate (STC) or other modification.

4. For any question concerning the technical content of the requirements in this PAD, please contact: BAE Systems (Operations) Ltd, Customer Information Department, Prestwick International Airport, Ayrshire, KA9 2RW, Scotland, The United Kingdom;
Telephone +44 1292 675207, Facsimile +44 1292 675704;
E-mail: RApublications@baesystems.com.