



Civil Aviation Authority

AIRWORTHINESS DIRECTIVE

Number: G-2021-0015

Issue date: 24 November 2021



Note: In this Airworthiness Directive, references to EU regulations are to those regulations as retained and amended in UK domestic law under the European Union (Withdrawal) Act 2018 and are referenced as "UK Regulation (EU) year/number or UK Regulation (EU) No. number/year".

This Airworthiness Directive (AD) is issued by the UK CAA in accordance with UK Regulation (EU) No. 748/2012 Part 21.A.3B, acting as the Authority of the State of Design for the affected product(s), under Article 34 of the Air Navigation Order 2016 (ANO) and UK Regulation (EU) 2018/1139.

In accordance with UK Regulation (EU) No. 1321/2014 Annex I (Part-M), M.A.301 / Annex VB (Part-ML), ML.A.301, the continuing airworthiness of an aircraft shall be ensured by accomplishing any applicable ADs. Consequently, no person may operate an aircraft to which an AD applies, except in accordance with the requirements of that AD, unless otherwise specified or agreed by the CAA [Part-M, M.A.303 / Part-ML, ML.A.303].

Type Approval Holder's Name:

BAE SYSTEMS (OPERATIONS) LTD

Type/Model Designation(s):

Jetstream 3100 & 3200 aeroplanes

Effective Date:	08 December 2021
TCDS:	EASA.A.191
Foreign AD (if applicable):	N/A
Superseded AD:	This AD supersedes EASA AD 2017-0053 dated 24 March 2017

ATA 32 - Landing Gear – Main Landing Gear / Pintle to Cylinder Interface – Inspection

Manufacturer(s):

British Aerospace plc, British Aerospace (Commercial Aircraft) Ltd, British Aerospace Regional Aircraft Ltd, Jetstream Aircraft Ltd and British Aerospace (Operations) Ltd.

Applicability:

Jetstream Series 3100 and 3200 aeroplanes, all models & all serial numbers.

Definitions:

For the purpose of this AD, the following definition applies:

The SB: BAE Systems (Operations) Ltd SB 32-JA960142

Reason:

Cracks were found during early fatigue testing and in service on the main landing gear (MLG) main fitting at the pintle to cylinder interface.

This condition if not detected and corrected, could lead to structural failure of the MLG, possibly resulting in loss of control of the aeroplane during take-off or landing runs.

To address this unsafe condition, BAE Systems (Operations) Ltd published several Service Bulletins (ISB) which, in 1996, were consolidated into a single bulletin, SB 32-JA960142, to provide instructions for inspection. CAA issued AD 005-03-96 accordingly to require repetitive inspections of the MLG.

In 2014 a crack was found which was below the critical crack length, but unusually large compared to similar cracks previously found in service. Further investigation into the subject determined that the existing inspection intervals remain valid but also showed that the assumed detectable defect size of a 1.27mm (0.05 in) crack could not be guaranteed using the then defined accomplishment instructions for a high frequency eddy current (HFEC) or fluorescent dye penetrant (FDP) inspection.

Consequently, BAE Systems (Operations) Ltd issued SB 32-JA960142 Revision 4, which provided an improved procedure for HFEC and FDP inspection to ensure the detection of cracks of 1.27 mm (0.05 in) length.

In response to this revision, EASA issued AD 2017-0053 (corrected 24 March 2017) addressing the need for revised inspection procedures.

Recently, an operator performing AD 2017-0053 (referencing SB 32-JA960142 rev 4) identified 3 crack indications (13 mm, 3 mm & 8 mm) in close proximity, the total length of which was approximately 38 mm. This was an unusual report based on reported findings over the 24 years since the SB was initially released. In depth laboratory investigation of the discrepant part was undertaken, which found that the material was to specification and the cracks were fatigue in nature. The investigation was unable to establish a reason for the cracks being different in nature to those previously reported.

In response, a further damage tolerance analysis was performed, which identified the need to reduce the repeat inspection interval defined in AD 2017-0053. That is, a reduction from a repeat of 1,200 flight cycles (FC) to a repeat of 900 FC.

For the reasons described above, this AD retains the requirements of CAA UK AD 005-03-96 (superseded by EASA AD) and EASA AD 2017-0053 (superseded by this CAA AD) and requires the accomplishment of repetitive inspections in accordance with new repetitive inspection requirements.