



Airworthiness Directive

AD No.: 2016-0224

Issued: 09 November 2016

Note: This Airworthiness Directive (AD) is issued by EASA, acting in accordance with Regulation (EC) 216/2008 on behalf of the European Union, its Member States and of the European third countries that participate in the activities of EASA under Article 66 of that Regulation.

This AD is issued in accordance with Regulation (EU) 748/2012, Part 21.A.3B. In accordance with Regulation (EU) 1321/2014 Annex I, Part M.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 by the Agency [Regulation (EU) 1321/2014 Annex I, Part M.A.303] or agreed with the Authority of the State of Registry [Regulation (EC) 216/2008, Article 14(4) exemption].

Design Approval Holder's Name:

BAE SYSTEMS (OPERATIONS) LTD

Type/Model designation(s):

HP 137 Jetstream MK 1,
Jetstream Series 200 and 3100 aeroplanes

Effective Date: 23 November 2016

TCDS Number(s): UK BA4 and EASA.A.191

Foreign AD: Not applicable

Supersedure: This AD supersedes EASA AD 2013-0208 dated 10 September 2013.

ATA 32 – Landing Gear – Main Landing Gear – Inspection / Replacement

Manufacturer(s):

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

Applicability:

HP 137 Jetstream MK 1, Jetstream Series 200 and 3100 aeroplanes, all models, all serial numbers.

Reason:

Prompted by occurrences of the main landing gear (MLG) yoke pintle housing cracking, the Civil Aviation Authority (CAA) UK issued AD 003-01-86 to require repetitive inspections to detect cracks in the yoke pintle housing on MLG fitted to Jetstream 3100 aeroplanes in accordance with BAE Systems (Operations) Ltd Service Bulletin (SB) 32-A-JA851226, and, depending on findings, corrective action. After that AD was issued, an occurrence was reported of Jetstream 3100 MLG failure after landing. The subsequent investigation revealed stress corrosion cracking of the MLG yoke pintle housing to have caused this MLG failure. Furthermore, the investigation report recommended a review of the effectiveness of CAA UK AD 003-01-86 in finding cracks in the yoke pintle housing on MLG fitted to Jetstream 3100 aeroplanes.



Degradation of the surface protection by abrasion can occur when the forward face of the yoke pintle rotates against the pintle bearing, which introduces corrosion pits and, consequently, stress corrosion cracking.

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 provide protection of the affected area of the MLG assembly spigot housing, BAE Systems (Operations) Ltd issued SB 32-JM7862 to provide instructions for installation of a protective washer, fitted at the forward spigot on both left hand and right hand MLG. Consequently, BAE Systems (Operations) Ltd issued SB 32-A-JA851226 Revision 05 to provide additional accomplishment instructions for a Non-destructive testing (NDT) inspection of MLG equipped with the protective washer installed in accordance with BAE Systems (Operations) Ltd SB 32-JM7862.

Consequently, EASA issued AD 2013-0208, retaining the requirements of CAA UK AD 003-01-86, which was superseded, and required implementation of revised inspection requirements, and, depending on findings, accomplishment of applicable corrective action(s). That AD also introduced an optional modification, which constituted terminating action for the inspections required by that AD.

Since that AD was issued, BAE Systems (Operations) Ltd has determined that the existing inspection procedure may not be effective in identifying stress corrosion cracking in the pintle housing. Consequently BAE Systems (Operations) Ltd has published an improved inspection procedure in SB 32-A-JA851226 Revision 07. This improved inspection procedure has the ability to detect smaller corrosion pits and cracks that are proximate in size to those that will initiate stress corrosion.

For the reasons described above, this AD retains the requirements of EASA AD 2013-0208, which is superseded, and requires MLG inspections in accordance with the improved procedure.

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

Required as indicated, unless accomplished previously:

Inspection(s):

- (1) Within the compliance time defined in Table 1 of this AD, as applicable and, thereafter, at intervals not to exceed 1 200 MLG flight cycles (FC) or 12 months, whichever occurs first, accomplish an NDT inspection of each MLG assembly cylinder attachment spigot housing in accordance with the instructions of paragraph 2.B. Part A of BAE Systems (Operations) Ltd SB 32-A-JA851226 Revision 07.

Table 1 – Initial NDT Inspection

Compliance time (whichever occurs later, A or B)	
A	Within 300 MLG FC or 3 months, or at the first overhaul of the MLG, whichever occurs first after 24 September 2013 [the effective date of EASA AD 2013-0208]
B	Within 1 200 MLG FC or 12 months, whichever occurs first after the latest inspection per BAE Systems (Operations) Ltd SB 32-A-JA851226 (any revision)



- (2) Within 300 MLG FC or 3 months, whichever occurs first after sustaining a heavy or abnormal landing, accomplish a one-time NDT inspection of each MLG assembly cylinder attachment spigot housing in accordance with the instructions of paragraph 2.B. Part A of BAE Systems (Operations) Ltd SB 32-A-JA851226 Revision 07.
- (3) Within 300 MLG FC or 3 months, whichever occurs first after accomplishment of each NDT inspection as required by paragraph (1) of this AD, and, thereafter, at intervals not to exceed 300 MLG FC or 3 months, whichever occurs first, accomplish a visual inspection of each MLG in accordance with the instructions of paragraph 2.B. Part B of BAE Systems (Operations) Ltd SB 32-A-JA851226 Revision 07.
- (4) For aeroplanes with MLG incorporating a microswitch hole, within 10 600 MLG FC since new and, thereafter, at intervals not to exceed 1 200 MLG FC, accomplish an NDT inspection of each MLG microswitch hole in accordance with the instructions of paragraph 2.B. Part C of BAE Systems (Operations) Ltd SB 32-A-JA851226 Revision 07.

Corrective Action(s):

- (5) If, during any NDT inspection as required by paragraph (1), (2) or (4) of this AD, any crack is detected, before next flight, accomplish the applicable corrective action(s) in accordance with the instructions of BAE Systems (Operations) Ltd SB 32-A-JA851226 Revision 07.
- (6) If, during any visual inspection as required by paragraph (3) of this AD, any discrepancy is detected, before next flight, accomplish the applicable corrective actions in accordance with the instructions of BAE Systems (Operations) Ltd SB 32-A-JA851226 Revision 07.

Terminating Action:

- (7) Accomplishment of corrective action(s) on an aeroplane, as required by paragraph (5) or (6) of this AD, does not constitute terminating action for the repetitive inspections required by this AD for that aeroplane.
- (8) Modification of each MLG cylinder on an aeroplane in accordance with the instructions of BAE Systems (Operations) Ltd SB 32-JA880340 constitutes terminating action for the repetitive inspections required by this AD for that aeroplane.

Credit:

- (9) Accomplishment of an inspection on a MLG, before 24 September 2013 [the effective date of EASA AD 2013-0208], in accordance with the instructions of APPH Ltd SB 32-40 at original issue or Revision 01, constitutes an acceptable alternative method of compliance for the initial NDT inspection as required by paragraph (4) of this AD for that MLG.
- (10) Inspections and corrective action(s), accomplished on an aeroplane before the effective date of this AD in accordance with the instructions of BAE Systems (Operations) Ltd SB 32-A-JA851226 at Revision 05 or Revision 06, are acceptable to comply with the initial requirements of this AD for that aeroplane.



Ref. Publications:

BAE Systems (Operations) Ltd SB 32-A-JA851226 Revision 05 dated 30 April 2013, or Revision 06 dated 18 December 2013, or Revision 07 dated 25 May 2015.

BAE Systems (Operations) Ltd SB 32-JA880340 original issue dated 06 January 1989.

The use of later approved revisions of these documents is acceptable for compliance with the requirements of this AD.

Remarks:

1. If requested and appropriately substantiated, EASA can approve Alternative Methods of Compliance for this AD.
2. This AD was posted on 10 October 2016 as PAD 16-145 for consultation until 07 November 2016. No comments were received during the consultation period.
3. Enquiries regarding this AD should be referred to the EASA Safety Information Section, Certification Directorate. E-mail: ADs@easa.europa.eu.
4. For any question concerning the technical content of the requirements in this AD, please contact: BAE Systems (Operations) Ltd, Business Support Team - Technical Publications, Prestwick International Airport, Ayrshire, KA9 2RW, Scotland, United Kingdom, Telephone +44 1292 675207, Facsimile +44 1292 675704, E-mail: RAPublications@baesystems.com.

