



Civil Aviation Authority

PROPOSED AIRWORTHINESS DIRECTIVE



Number: 1990

Issue date: 21 December 2021

In accordance with the CAA Continuing Airworthiness Procedures, the issuance of an Airworthiness Directive (AD) is proposed which will be 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.

Type Approval Holder's Name:

Type/Model Designation(s):

BAE SYSTEMS (OPERATIONS) Ltd

HS 748 aeroplanes

Effective Date:	[TBD Upon Issue of Final AD]
TCDS:	EASA.A.397
Foreign AD (if applicable):	Not applicable
Supersedure:	Not Applicable

ATA 32 - Undercarriage – Nose Landing Gear Axle – Inspection

Manufacturer(s):

A.V. Roe and Company, Hawker Siddeley Aviation Ltd, British Aerospace plc

Applicability:

HS 748 aeroplanes, all models, all serial numbers

Definitions:

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

The SB: BAE Systems (Operations) Ltd Service Bulletin HS748-32-105 original issue

Affected parts: Refer to BAE Systems (Operations) Ltd Service Bulletin HS748-32-105 original issue accomplishment instructions for details of applicable parts

Reason:

An investigation into the failure of a nose landing gear axle while installed on an in-service aircraft concluded that a contributory factor to the failure was decarburisation in the steel material that had been present since manufacture of the axle. The landing gear manufacturer, Safran Landing Systems (SLS), determined that all axles with part number 2001143303, manufactured before 2021 could be affected by decarbonisation. This AD introduces repeat inspections of the affected axles to detect cracking to prevent further in-service failures.

Decarburisation could result in an axle failure before completion of the axle's 27,000 landing safe life. The safe life requirement is referenced in SLS Service Bulletin (SB) 32-104E, which in 1993, prior to the establishment of EASA, the CAA mandated and allocated AD number 009-02-93. EASA adopted the historic CAA mandatory requirement, referencing the requirement as, G-009-02-93 on its AD publication website. The presence of decarbonisation represents a deviation from the type certification standard.

As an alternative to reducing the published safe life of the axle, suitably revised to take into account the effects of decarbonisation, it has been determined that, the current safe life can be retained, when the specific requirements per this AD are accomplished.

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

Required as indicated, unless accomplished previously:

Inspections(s):

(1) From the effective date of the AD accomplish the following:

- (1.1) Review aircraft/undercarriage records to determine whether the AD requirements apply. The AD applies to all aircraft where a nose landing gear axle, with part number 200143303 is installed, where the axle was manufactured prior to 2021. The date of manufacture can be established by reviewing the nose landing gear axle serial number. The first two numbers refer to the date of manufacture. The only axles not affected by decarbonisation are those with the first two numbers being: 21, 22, 23, 24 etc.
- (1.2) Perform the initial inspection requirements, as recorded in the paragraphs: 1.N. Approval and 2. Accomplishment Instructions of BAE Systems (Operations) Ltd Service Bulletin HS748-32-105 original issue. Where the Service Bulletin in section: 1.N. Approval, refers to: "within 500 landings or 6 months of the original issue date of this ISB", this is to be read as: "within 500 landings or 6 months of the effective date of this AD".

Note: references to "accumulated landings" and "landings since new" refer to total landing accumulated since the axle entered service.

- (1.3) Perform repeat inspections every 1500 landings*, in accordance with paragraph 2 Accomplishment Instructions of BAE Systems (Operations) Ltd Service Bulletin HS748-32-105 original issue, (* that is, landings accumulated on the nose landing gear axle since the previous inspection was performed in accordance with the requirements defined within this AD).

*Note: Landings accumulated on the nose landing gear axle since the previous inspection was performed in accordance with the requirements defined within this AD.

Corrective Actions:

- (2) Install a serviceable nose landing gear axle noting the requirements of this AD. Additionally see Terminating Action.

Credit:

- (3) Inspection(s) and corrective action(s) accomplished in accordance with BAE Systems (Operations) Ltd Service Bulletin HS748-32-105 original issue, before the effective date of this AD is/are acceptable to comply with the initial requirements of this AD.

Terminating Action:

- (4) Installation of the following terminates the requirements of this AD:
Installation of an axle with part number UC302311 (applicable to NLGs part number 200143003 only) or
Installation of an axle with part number 200143300 (applicable to all NLGs) or
Installation of an axle with part number 200143303 that was manufactured in 2021 or after (applicable to all NLGs). (See (1.1) for details of how this can be established).

Reference Publications:

BAE Systems (Operations) Ltd Service Bulletin HS748-32-105 original issue, dated 1 September 2021.

The use of a later approved revision of this document is acceptable for compliance with the requirements of this AD.

Remarks:

1. This PAD will be closed for consultation on 18 January 2022.
2. If requested and appropriately substantiated, CAA can approve Alternative Methods of Compliance (AMOC) for this AD.
3. Information about any failures, malfunctions, defects or other occurrences, which may be similar to the unsafe condition addressed by this AD, and which may occur, or have occurred on a product, part or appliance not affected by this AD, can be reported to the CAA aviation safety reporting system. This may include reporting on the same or similar components, other than those covered by the design to which this AD 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. Enquiries regarding this PAD should be referred to: Continued.Airworthiness@caa.co.uk
5. For any questions concerning the technical content of the requirements in this PAD, please contact: BAE Systems (Operations) Ltd, Customer Technical Support Department, Prestwick International Airport, Ayrshire, KA9 2RW, Scotland, United Kingdom; E-mail: RaEnlgaion@baesystems.com