



# Notification of a Proposal to issue an Airworthiness Directive

**PAD No.: 19-139R1**

**Issued: 14 November 2019**

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:

ROLLS-ROCYE DEUTSCHLAND Ltd & Co KG

## Type/Model designation(s):

BR700-710 engines

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

**TCDS Number(s):** EASA.E.018

**Foreign AD:** Not applicable

**Supersedure:** None

## ATA 72 – Engine – High Pressure Turbine Stage 1 Discs – Life Limit Reduction / Replacement

### Manufacturer(s):

Rolls-Royce Deutschland Ltd & Co KG (RRD)

### Applicability:

BR700-710A1-10, BR700-710A2-20 and BR700-710C4-11 engines, all serial numbers (ESN).

These engines are known to be installed on, but not limited to, Bombardier BD-700-1A10 and BD-700-1A11 aeroplanes, and Gulfstream GV (commercial designation G500) and GV-SP (commercial designation G550) aeroplanes.

### Definitions:

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

**Affected part:** High pressure turbine (HPT) stage 1 discs, identified by Part Number (P/N) and serial number (s/n) in the NMSB.

**Serviceable part:** An HPT stage 1 disc that is not an affected part.



**The NMSB:** RRD Alert Non-Modification Service Bulletin (NMSB) SB-BR700-72-A900659. The NMSB identifies the ESN of engines that, at the time of issuance of the NMSB, had one of the 26 affected parts installed. Since then, an affected part may have been installed on another engine, or removed and held as spare.

#### Reason:

An occurrence was reported of a HPT stage 1 disc burst on an industrial gas turbine engine. Subsequent investigation revealed a quality escape during HPT stage 1 disc rim cooling air hole manufacturing process. A review revealed that 28 HPT stage 1 discs were subject to a similar quality escape, two of which have been recovered and removed from service. The consequence of this manufacturing error is that the affected parts can no longer safely reach their Declared Safe Cyclic Life (DSCL).

This condition, if not corrected, may lead to failure of an affected part, possibly resulting in release of high-energy debris, with consequent damage to, and/or reduced control of, the aeroplane.

To address this potentially unsafe condition, RRD issued the NMSB, providing instructions to remove the engine from service for in-shop replacement of the affected part.

For the reasons described above, this AD reduces the DSCL for the affected parts, requires identification of the affected parts and removal from service of each affected engine for replacement of the affected part. This AD also prohibits (re)installation of affected parts.

Since PAD 19-139 was issued, new, more conservative, disc life limits were determined. Consequently, RRD have issued Revision 1 of the NMSB to provide the new thresholds. As this change results in a reduced compliance time, this PAD is revised for further consultation.

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

Required as indicated, unless accomplished previously:

#### Affected Part Identification:

- (1) Within 30 days after the effective date of this AD, determine whether an affected part, as defined in this AD, is installed on the engine. This can be accomplished by a maintenance records check, provided those records are complete and up-to-date and can be relied upon to identify the P/N and s/n of the affected HPT Stage 1 disc.

#### Removal from Service:

- (2) For each engine for which it has been determined, as required by paragraph (1) of this AD, to have an affected part installed: Within the compliance time as specified in Table 1 of this AD, remove the engine from service and, before release to service of that engine, replace the affected part with a serviceable part in accordance with the instructions of the NMSB.



Table 1 – Removal from Service (see Note 1 of this AD)

Period	Compliance Time
From the effective date of this AD until 28 February 2021	Before exceeding 4 250 FC
From 01 March 2021	Before exceeding 2 840 FC, or before 01 May 2029, whichever occurs first

Note 1: The FC indicated in Table 1 of this AD are those accumulated by the affected part(s) since new (first installation on an engine).

**Credit:**

- (3) Removal from service and correction of an affected engine, before the effective date of this AD in accordance with the instructions of the NMSB at original issue, is acceptable to comply with the requirements of paragraph (2) of this AD for that engine.

**Part Installation:**

- (4) From the effective date of this AD, it is allowed to install on any engine an HPT stage 1 disc, provided that it is a serviceable part, as defined in this AD.

**Ref. Publications:**

RRD Alert NMSB SB-BR700-72-A900659, original issue dated 22 July 2019, or Revision 1 dated 05 November 2019.

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

**Remarks:**

1. This revised Proposed AD will be closed for consultation on 28 November 2019.
2. The original issue of this PAD was posted on 24 July 2019 as PAD 19-139 for consultation until 21 August 2019. No comments were received during the consultation period.
3. Enquiries regarding this PAD should be referred to the EASA Programming and Continued Airworthiness Information Section, Certification Directorate. E-mail: [ADs@easa.europa.eu](mailto:ADs@easa.europa.eu).
4. 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](#).
5. For any question concerning the technical content of the requirements in this PAD, please contact: Rolls-Royce Deutschland Ltd & CoKG, Eschenweg 11, Dahlewitz, 15827 Blankenfelde-Mahlow, Germany, Telephone: +49 (0) 337086 1200, E-mail: [rrd.techhelp@rolls-royce.com](mailto:rrd.techhelp@rolls-royce.com).

