



Airworthiness Directive

AD No.: 2019-0299

Issued: 10 December 2019

Note: This Airworthiness Directive (AD) 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.

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 (EU) 2018/1139, Article 71 exemption].

Design Approval Holder's Name:

ROLLS-ROYCE DEUTSCHLAND Ltd & Co KG

Type/Model designation(s):

BR700-710 engines

Effective Date: 24 December 2019

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 an 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.

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 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, that an affected part is 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) Replacement of an affected part on 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. If requested and appropriately substantiated, EASA can approve Alternative Methods of Compliance for this AD.
2. This AD was posted as PAD 19-139 on 24 July 2019 for consultation until 21 August 2019, then revised and republished as PAD 19-139R1 on 14 November 2019 for additional consultation until 28 November 2019. No comments were received during the consultation period.
3. Enquiries regarding this AD should be referred to the EASA Programming and Continued Airworthiness Information Section, Certification Directorate. E-mail: 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 AD, and which may occur, or have occurred on a product, part or appliance not affected by this AD, can be reported to the [EU aviation safety reporting system](#).
5. For any question concerning the technical content of the requirements in this AD, 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.

