



Airworthiness Directive

AD No.: 2021-0056

Issued: 25 February 2021

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):

RB211 Trent 900 engines

Effective Date: 11 March 2021

TCDS Number(s): EASA.E.012

Foreign AD: Not applicable

Supersedure: None

ATA 72 – Engine – Low Pressure Turbine Seal Panel – Inspection / Replacement [Life Limitation]

Manufacturer(s):

Rolls-Royce plc

Applicability:

RB211 Trent 970-84, Trent 972-84 and Trent 972E-84 engines, all serial numbers.

These engines are known to be installed on, but not limited to, Airbus A380 aeroplanes.

Definitions:

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

Affected part: Low pressure turbine (LPT) seal panels, having Part Number (P/N) FW33370, P/N FW52161, or P/N KH20207.

Serviceable part: An affected part that that is new (not previously installed); or an affected part that has not exceeded 7 000 flight cycles (FC) since first installation on an engine, and that, prior to installation, has passed an inspection (no crack detected) in accordance with the instructions of the NMSB.



The NMSB: Rolls-Royce Alert Non-Modification Service Bulletin (NMSB) RB.211-72-AK637.

The NMSB has an 'A' (Alert) in the number, but a later revision may not have that 'A'. This kind of change does not effectively alter the publication references.

Qualified shop visit: Any shop visit where the rear of the intermediate pressure turbine module is exposed, except when the LPT seal panel is replaced with a serviceable part before release to service of the engine.

Reason:

The Trent 900 LPT seal panel has a thermal gradient between inner area of the stiffener and outer area of the seal panel, leading to a high stress at the stiffener's outer weld. Analysis has shown that this may lead to cracking of the seal panel.

This condition, if not detected and corrected, could lead to LPT seal panel failure, possibly resulting in release of high-energy debris, with consequent damage to, and/or reduced control of, the aeroplane.

To address this potential unsafe condition, Rolls-Royce issued the NMSB, providing inspection instructions and introducing a life limit for the affected parts.

For the reasons described above, this AD requires repetitive in-shop inspections of the outer weld of the affected parts and, depending on findings, replacement. This AD also introduces a life limit for all affected parts.

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

Required as indicated, unless accomplished previously:

Replacement [Life Limitation]:

- (1) From the effective date of this AD, before an affected part installed on an engine exceeds 7 000 FC since its first installation on an engine (see Note 1 of this AD), or within 30 days after the effective date of this AD, whichever occurs later, remove that engine from service and, before release to service of that engine, replace that affected part with a serviceable part, as defined in this AD, in accordance with the instructions of the NMSB.

Note 1: The information provided in the NMSB, section 3.A.(1)(a) NOTE and Appendix 2, can be used by operators to start tracking each affected part.

In-Shop Inspections:

- (2) During each qualified shop visit after the effective date of this AD, inspect the outer weld of the affected part in accordance with the instructions of the NMSB.

For an engine that, on the effective date of this AD, is in a shop visit where substantial rebuild has not yet started, before release to service of that engine, inspect the affected part in accordance with the instructions of the NMSB.



Corrective Action(s):

- (3) If, during any shop inspection as required by paragraph (2) of this AD, any crack is detected, before release to service of the engine, replace the affected part with a serviceable part in accordance with the instructions of the NMSB.

Part(s) Installation:

- (4) From the effective date of this AD, it is allowed to install on any engine an affected part, provided the part is a serviceable part, as defined in this AD and that, following installation, the affected part is inspected as required by paragraph (2) of this AD and replaced as required by paragraph (1) of this AD.

Engine Installation:

- (5) From the effective date of this AD, it is allowed to install on any aeroplane an engine with an affected part installed, provided that the affected part is new (not previously installed), or the affected part has not exceeded 7 000 FC since first installation on an engine, and that, following engine installation, the affected part is inspected as required by paragraph (2) of this AD and replaced as required by paragraph (1) of this AD.

Ref. Publications:

Rolls-Royce Trent 900 Alert NMSB RB.211-72-AK637 original issue dated 24 February 2021.

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 on 18 December 2020 as PAD 20-203 for consultation until 15 January 2021. The Comment Response Document can be found in the [EASA Safety Publications Tool](#), in the compressed (zipped) file attached to the record for this AD.
3. Enquiries regarding this AD should be referred to the EASA Safety 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](#). 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.
5. For any question concerning the technical content of the requirements in this AD, please contact your designated Rolls-Royce representative, or download the publication from your Rolls-Royce Care account at <https://customers.rolls-royce.com>.



If you do not have a designated representative or Rolls-Royce Care account, please contact **Corporate Communications** at **Rolls-Royce plc**, P.O. Box 31, Derby, DE24 8BJ, United Kingdom
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or send an email through <https://www.rolls-royce.com/contact-us/civil-aerospace.aspx>
identifying the correspondence as being related to **Airworthiness Directives**.

