



## Airworthiness Directive

**AD No.:** 2018-0048

**Issued:** 28 February 2018

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:

ROLLS-ROYCE plc

### Type/Model designation(s):

RB211 Trent 900 engines

**Effective Date:** 07 March 2018

**TCDS Number(s):** EASA.E.012

**Foreign AD:** Not applicable

**Supersedure:** None

## ATA 05 – Time Limits / Maintenance Checks – Engine Time Limits Manual – Amendment

### Manufacturer(s):

Rolls-Royce plc (RR)

### Applicability:

RB211 Trent 970-84, 970B-84, 972-84, 972B-84, 972E-84, 977-84, 977B-84 and 980-84 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:

**The ALS:** The airworthiness limitation section (ALS) for Rolls-Royce plc RB211 Trent 900 engines, as published in the Time Limits Manual (TLM) T-TRENT-9RR Task 05-20-01-800-801 (Mandatory Inspections and Declared Safe Cyclic Lives) dated 01 September 2017, including Temporary Revision (TR) No.05-01 dated 23 February 2018.

### Reason:

The airworthiness limitations for the RB211 Trent 900 engines, which are approved by EASA, are currently defined and published in the ALS. These instructions have been identified as mandatory for continued airworthiness.



Failure to accomplish these instructions could result in an unsafe condition.

RR published TLM TR No.05-01 to provide inspection instructions for certain intermediate pressure (IP) compressor stages 1 to 8 rotor shafts, low pressure (LP) turbine disc seal fins and intermediate stage seal honeycomb. In addition, inspection instructions for tail bearing housing (TBH) that were previously contained in Non-Modification Service Bulletin (NMSB) RB211-72-AH154, as required by EASA AD 2016-0193, have been transferred to the ALS, but with relaxed accept/reject criteria. Consequently, RR will cancel that NMSB (Revision 7) to remove those instructions and include reference to the Trent 900 TLM.

For the reason described above, this AD requires accomplishment of the actions specified in the ALS. EASA AD 2016-0193 has been revised accordingly.

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

Required as indicated, unless accomplished previously:

#### **Maintenance Tasks and Replacement of Life Limited Parts:**

- (1) From the effective date of this AD, accomplish the following actions, as specified in the ALS, as applicable to engine model and depending on engine configuration:
  - (1.1) Replace each component before exceeding the applicable life limit, and
  - (1.2) Within the thresholds and intervals, taking into account the allowed one-time exceedance (so-called 'grace' period) for TBH, as specified in paragraph (2) of this AD, accomplish all applicable maintenance tasks.

#### **One-time Grace Period:**

- (2) For a TBH that, on the effective date of this AD, has accumulated more than 400 flight cycles (FC) since the last inspection (as previously required by EASA AD 2016-0193) during which the Top Core Vane leading edges were determined to be crack free, the next inspection can be deferred to 250 FC after the effective date of this AD.

#### **Corrective Action(s):**

- (3) In case of finding discrepancies (as defined in the ALS) during accomplishment of any task as required by paragraph (1) of this AD, within the compliance time specified in the ALS, accomplish the applicable corrective action(s) in accordance with the approved RR maintenance documentation. If no compliance time is identified in the ALS, accomplish the applicable corrective action(s) before next flight. If a detected discrepancy is not identified in the ALS, before next flight, contact RR for approved instructions and accomplish those instructions accordingly.

#### **Aircraft Maintenance Programme (AMP) Revision:**

- (4) Within 12 months after the effective date of this AD, revise the approved AMP, on the basis of which the operator or the owner ensures the continuing airworthiness of each operated engine, by incorporating the limitations, tasks and associated thresholds and intervals described in the ALS, as applicable to engine model and depending on engine configuration.



**Credit:**

- (5) For an AMP that, on the effective date of this AD, is already updated to incorporate the maintenance tasks and life limitations as specified in the RR Trent 900 TLM T-TRENT-9RR, Task 05-20-01-800-801, dated 01 September 2017, that action ensures (see Note 2 of this AD) the continued accomplishment of those tasks and limitations.

Consequently, for an engine to which that AMP applies, it is acceptable to accomplish the new and more restrictive tasks and limitations, as applicable to engine model and depending on aeroplane configuration, as defined in, and within the compliance times as specified in, RR Trent 900 TLM TR No.05-01, to comply with paragraph (1) of this AD.

For that AMP, it is acceptable to incorporate the new and more restrictive tasks and limitations as defined in RR Trent 900 TLM TR No.05-01, as applicable to engine model and depending on engine configuration, into the AMP to comply with paragraph (3) of this AD.

- (6) An engine where the TBH did not pass the original accept criteria as previously specified in NMSB RB.211-72-AH154, affecting certain cracks in the Top Core Vanes (vane 1 and 14) LE, may be released to service, provided the TBH of that engine passes the new accept criteria as specified in the ALS.

**Recording AD compliance:**

- (7) When the AMP of an aeroplane has been revised as required by paragraph (4) or (5) of this AD, as applicable, that action ensures (see Note 2 of this AD) continued accomplishment of the tasks as required by paragraphs (1) and (3) of this AD for an affected engine installed on that aeroplane. Consequently, after revising the AMP, as required by paragraph (4) or (5) of this AD, as applicable, it is not necessary that accomplishment of individual action is recorded for demonstration of AD compliance on a continued basis.

Note 2: For affected engines installed on aeroplanes registered in Europe, complying with the approved AMP, as specified in paragraph (3) or (4) of this AD, as applicable, is required by Commission Regulation (EU) [1321/2014](#), Part M.A.301, paragraph 3.

**Ref. Publications:**

RR Trent 900 TLM T-TRENT-9RR, Task 05-20-01-800-801, dated 01 September 2017, including TR No.05-01 dated 23 February 2018.

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. Based on the required actions and the compliance time, EASA have decided to issue a Final AD with Request for Comments, postponing the public consultation process until after publication.



3. Enquiries regarding this AD should be referred to the EASA Safety Information Section, Certification Directorate. E-mail: [ADs@easa.europa.eu](mailto:ADs@easa.europa.eu).
4. 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, Telephone +44 (0)1332 242424,

or send an email through [http://www.rolls-royce.com/contact/civil\\_team.jsp](http://www.rolls-royce.com/contact/civil_team.jsp) identifying the correspondence as being related to **Airworthiness Directives**.

