Airworthiness Directive

AD No.: 2013-0223R1

Issued: 30 September 2020

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 800 engines

Effective Date: Revision 1: 07 October 2020
Original issue: 03 October 2013

TCDS Number(s): EASA.E.047

Foreign AD: Not applicable

Revision: This AD revises EASA AD 2013-0223 dated 19 September 2013.

ATA 72 – Engine – Low Pressure Turbine Bearing Support / Exhaust Case Assembly – Inspection / Replacement

Manufacturer(s):
Rolls-Royce plc

Applicability:
RB211 Trent 875-17, 877-17, 884-17, 884B-17, 892-17, 892B-17 and 895-17 engines, all serial numbers (ESN), except those that have been reworked in accordance with the instructions of Rolls-Royce Trent 800 Service Bulletin (SB) RB.211-72-G604.

These engines are known to be installed on, but not limited to, Boeing 777 aeroplanes.

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

Affected part: Low pressure (LP) turbine bearing support and exhaust case assembly (EIPC 72-52-51, 03-300), also known as the tail bearing housing (TBH).

Serviceable part: An affected part that, before installation, has passed an inspection (no defects found) in accordance with the instructions of Section 3, Part B, of the NMSB; or a TBH that is new

(never previously installed); or a TBH that has been reworked in accordance with the instructions of Rolls-Royce Trent 800 SB RB.211-72-G604.

The NMSB: Rolls-Royce Non-Modification Service Bulletin (NMSB) RB.211-72-AG644 (currently at Revision 3), which identifies the serial numbers (s/n) of Modules and ESN of engines in which the affected TBH were likely installed at the time the original NMSB was issued; see Figure 7 in the NMSB.

Qualified shop visit: Serviceability, Check and Repair, Refurbishment or Overhaul.

Groups: Group 1 engines are those that have a TBH installed, identified by Part Number (P/N) and s/n in Appendix 1 of this AD.
Group 2 engines are those that have a TBH installed which is not listed in Appendix 1 of this AD.

Reason:

In 2013, Rolls-Royce identified that limitations in the drawing definition for the Trent 800 TBH could have resulted in thin wall section parts being delivered into service. Further analysis concluded that under certain circumstances, the structural integrity of a thin walled part may be insufficient to withstand a fan blade failure event.

This condition, if not detected and corrected, could, in case of fan blade failure, lead to a loss of integrity of the TBH and leave the engine unsupported at the rear mount, possibly resulting in damage to, or reduced control of, the aeroplane.

To address this potential unsafe condition, Rolls-Royce issued the NMSB (original issue, later revised) to provide instructions to replace certain TBH and inspect all others. Consequently, EASA issued AD 2013-0223 to require identification and replacement or rework of certain known thin walled TBHs and inspection of the TBH of all other engines.

Since that AD was issued, further safety analysis indicated that the compliance time could be extended. Rolls-Royce revised the NMSB (Revision 3) accordingly.

For the reason described above, this AD is revised to reflect the amended compliance time specified in the NMSB at Revision 3. This revised AD also contains some editorial changes, applying the latest AD writing standards, without affecting the requirements.

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

Required as indicated, unless accomplished previously:

Replacement:

(1) For Group 1 engines: During the next qualified shop visit, as defined in this AD, but not later than 30 June 2017, whichever occurs first after 03 October 2013 [the effective date of the original issue of this AD], before release to service of the engine, replace the affected part with a serviceable part in accordance with the instructions of the NMSB.

Inspection:

(2) For Group 2 engines: Within the compliance time specified in Table 1 of this AD, as applicable, inspect the TBH in accordance with the instructions of Section 3, Part B, of the NMSB.

Table – TBH Inspection

Compliance Time (whichever occurs first, **A**, **B** or **C)**	
A	Before release to service, for those engines that, on 03 October 2013 [the effective date of the original issue of this AD] are in a shop visit where the affected part is exposed and substantial rebuild has not yet started
B	During the next Refurbishment or Overhaul shop visit, or during any other shop visit after 03 October 2013 [the effective date of the original issue of this AD], where the module is sufficiently exposed to accomplish the inspection
C	Not later than 31 December 2024

Corrective Action:

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

Ref. Publications:

Rolls-Royce NMSB RB.211-72-AG644 original issue dated 30 April 2013, or Revision 1 dated 18 September 2014, or Revision 2 dated 28 April 2016, or Revision 3 dated 3 September 2020.

Rolls-Royce SB RB.211-72-G604 original issue dated 18 March 2013, or Revision 1 dated 28 January 2015, or Revision 2 dated 18 February 2016.

The use of later approved revisions of the above-mentioned documents 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. The original issue of this AD was posted on 19 June 2013 as PAD 13-084 and republished on 23 August 2013 as PAD 13-084R1 for consultation until 06 September 2013. 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 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. 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 PAD, 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 https://www.rolls-royce.com/contact-us/civil-aerospace.aspx identifying the correspondence as being related to **Airworthiness Directives**.

Appendix 1 – Part- and Serial Numbers of TBH affected by paragraph (1) of this AD

PART NUMBER	PART SERIAL NUMBER
FK31446	118–01
FK31446	209–01
FK31446	216–01
FK31446	232–01
FK32232	113–01
FK32085	268–01
FK32085	269–01
FK31446	022–01
FK31446	028–01