

Airworthiness Directive

AD No.: 2019-0101

Issued: 08 May 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):

RB211 Trent 900 engines

Effective Date: 22 May 2019

TCDS Number(s): EASA.E.012

Foreign AD: Not applicable

Supersedure: This AD supersedes EASA AD 2018-0185 dated 29 August 2018.

ATA 71 – Powerplant – Breather Drains Mast Assembly – Inspection / Replacement

Manufacturer(s):

Rolls-Royce plc

Applicability:

RB211 Trent 970-84, 972-84 and 972E-84 engines, all serial numbers (ESN), except those which have Rolls-Royce modification (mod) 72-AK047 embodied in production. ESN 91565 and higher have mod 72-AK047 embodied in production.

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:

Where, in this AD, reference is made to a Rolls-Royce mod, Non-Modification Service Bulletin (NMSB) or Service Bulletin (SB) with an 'A' (Alert) in the number, it should be recognised that an earlier or later revision may not have that 'A'. This kind of change does not effectively alter the publication references for the purpose of this AD.

The NMSB: Rolls-Royce Trent 900 Alert NMSB RB.211-71-AJ576 Revision 2.

The modification SB: Rolls-Royce Alert SB RB.211-72-AK047.

Affected part: Breather drains mast assemblies, Part Number (P/N) FW29847 (pre-mod 72-H499), and P/N KH31996 (post-mod 72-H499), as applicable.

Serviceable part: An affected part that is new (never installed on an engine), or has passed an inspection, before installation, in accordance with the instructions of the NMSB; or an improved breather drains mast assembly P/N KH83453, installed in accordance with the modification SB.

Passed an inspection: No cracks or other defects were found, or defects were corrected, during an inspection of an affected part.

Groups: Group 1 engines are those that have drains mast P/N KH31996 installed and have mod/SB 80-H632 embodied. Group 2 engines are those that have drains mast P/N FW29847 installed, or have drains mast P/N KH31996 installed and do not have mod/SB 80-H632 embodied.

Reason:

Occurrences were reported on in-service RB211 Trent 900 engines, where cracks were found in the transition duct area of the drains mast, which is part of the fire wall in Zone 1.

This condition, if not detected and corrected, could, in combination with a fire in the surrounding area, lead to a breach of the fire wall, possibly resulting in an uncontrolled fire and consequent reduced control of the aeroplane.

To address this potential unsafe condition, Rolls-Royce published NMSB RB.211-71-AJ576 at original issue to provide inspection instructions for engines with drains mast P/N KH31996 and post-mod 80-H632 vent ejector installed, which were determined as more susceptible to cracking. Consequently, EASA issued AD 2017-0075 (later revised) to require, for engines with post-mod 80-H632 vent ejector installed, a one-time inspection of drains mast P/N KH31996 and, depending on findings, accomplishment of applicable corrective action(s). P/N FW29847 (pre-mod 72-H499) drains masts were not affected by that AD.

After EASA AD 2017-0075R1 was issued, prompted by in-service findings, it was decided to expand the group of affected engines, including those with pre-mod 80-H632 vent ejector installed, and to expand the group of affected parts, to include P/N FW29847 (pre-mod 72-H499) drains masts. Rolls-Royce published NMSB RB.211-71-AJ576 Revision 1 accordingly. It was also decided that repetitive inspections are necessary to ensure continued fleet safety. Consequently, EASA issued AD 2018-0185, retaining the requirements of EASA AD 2017-0075R1, which was superseded, expanding the affected engines by adding those with pre-mod 80-H632 vent ejector installed, and engines with drains mast P/N FW29847 (pre-mod 72-H499) installed, and requiring repetitive inspections of all affected engines.

Since that AD was issued, Rolls-Royce developed mod 72-AK047, introducing an improved breather drains mast assembly, P/N KH83453, and drains support bracket, featuring material and geometry changes. Rolls-Royce published NMSB RB.211-71-AJ576 Revision 2 (the NMSB) accordingly.



For the reason described above, this AD retains the requirement of EASA AD 2018-0185, which is superseded, and requires replacement of the affected parts by installing an improved breather drains mast assembly P/N KH83453. This modification constitutes terminating action for the repetitive inspections as required by this AD.

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

Required as indicated, unless accomplished previously:

Inspection:

- (1) Within the compliance time specified in Table 1 of this AD, as applicable, or within 24 months after first operation of the engine, whichever occurs later, and, thereafter, at intervals not to exceed 24 months, visually inspect the external areas of the affected part in accordance with the instructions of the NMSB.

Table 1 – Initial Inspection

Group	Compliance Time
1	Within 24 months after 16 May 2017 [the effective date of EASA AD 2017-0075]
2	Within 24 months after 12 September 2018 [the effective date of EASA AD 2018-0185]

Corrective Action(s):

- (2) If, during any inspection as required by paragraph (1) of this AD, any visual crack is detected, as defined in the NMSB, before next flight, seal the crack in accordance with the instructions of the NMSB.
- (3) Within 100 engine flight cycles after the corrective action as required by paragraph (2) of this AD, replace the affected part with a serviceable part in accordance with the instructions of the NMSB.

Credit:

- (4) Inspection(s) and corrective action(s) on an engine, accomplished before the effective date of this AD in accordance with the instructions of Rolls-Royce Alert NMSB RB.211-71-AJ576 at original issue, or Revision 1, are acceptable to comply with the initial requirements of paragraphs (1), (2) and (3) of this AD for that engine.

Modification:

- (5) Within 16 months after the effective date of this AD, modify the engine by replacing the affected part with an improved breather drains mast assembly and drains support bracket in accordance with the instructions of the modification SB.

Concurrent Requirements for engines in pre-mod/SB 72-H499 configuration:

- (6) Before or concurrently with modification of an engine as required by paragraph (5) of this AD, modify that engine in accordance with the instructions of Rolls-Royce SB RB.211-72-H499.



- (7) Concurrently with modification of an engine as required by paragraph (6) of this AD, modify that engine in accordance with the instructions of Rolls-Royce SB RB.211-79-H640.

Terminating Action:

- (8) Modification of an engine as required by paragraph (5) of this AD constitutes terminating action for the repetitive inspections as required by paragraph (1) of this AD for that engine.

Part Installation:

- (9) For Group 1 engines: From 16 May 2017 [the effective date of EASA AD 2017-0075] until modification of an engine as required by paragraph (5) of this AD, it is allowed to install on that engine an affected part, provided it is a serviceable part, as defined in this AD.
- (10) For Group 2 engines: From 12 September 2018 [the effective date of EASA AD 2018-0185] until modification of an engine as required by paragraph (5) of this AD, it is allowed to install on that engine an affected part, provided it is a serviceable part, as defined in this AD.

Ref. Publications:

Rolls-Royce NMSB RB.211-71-AJ576 original issue dated 17 March 2017, or Revision 1 dated 11 July 2018, or Revision 2 dated 05 April 2019.

Rolls-Royce SB RB.211-72-H499 original issue dated 16 October 2013.

Rolls-Royce SB RB.211-79-H640 original issue dated 16 October 2013, or Revision 1 dated 19 June 2014.

Rolls-Royce Alert SB RB.211-72-AK047 original issue dated 16 October 2018.

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. This AD was posted on 12 April 2019 as PAD 19-062 for consultation until 26 April 2019. 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](#).



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, Telephone +44 (0)1332 242424,

or send an email through http://www.rolls-royce.com/contact/civil_team.jsp identifying the correspondence as being related to **Airworthiness Directives**.

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