Airworthiness Directive

AD No.: 2022-0225

Issued: 21 November 2022

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, or Annex Vb Part ML.A.301, as applicable, 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 Annex Vb Part ML.A.303, as applicable] 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: 05 December 2022

TCDS Number(s): EASA.E.047

Foreign AD: Not applicable

Supersedure: This AD supersedes EASA AD 2021-0245 dated 10 November 2021.

ATA 73 – Engine Fuel & Control – Fuel Pump – 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.

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:

The NMSB: Rolls-Royce Alert Non-Modification Service Bulletin (NMSB) RB.211-73-AK840, which includes reference to Eaton Corporation Service Bulletin (SB) 721400-73-006 and SB 830800-73-002. 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.

Affected part: Eaton Corporation fuel pumps, having Part Number (P/N) 721400-3 or P/N 830800-1, and a serial number (s/n) as listed in Appendix 1 (Table 1) of the NMSB, as defined in this AD, except those marked with '73-AK840' on the fuel pump's SB/mod data plate. Following investigation of the operational history of fuel pump P/N 830800-1 with s/n 0133, it is no longer an affected part.

Affected engine: An engine that has an affected part installed.

Affected aeroplane: An aeroplane that has two affected engines installed.

Reason:

Occurrences were reported of single engine events resulting in loss of thrust. Investigation results determined that certain engines had been exposed to unacceptable levels of water contamination, which caused corrosion developing on the fuel pump internal components, leading to debris release and filter blockages in Variable Stator Vane Actuator Control Units, which finally resulted in the Variable Stator Vane system to fail in the closed position.

This condition, if not corrected, could lead to dual engine loss of thrust control or engine in-flight shut-down, with consequent reduced control of the aeroplane.

To address this potential unsafe condition, Rolls-Royce published NMSB RB.211-73-AK788 to provide instructions for de-pairing of affected parts on any single aeroplane. Consequently, EASA issued AD 2021-0245 to require replacement of affected parts. That AD also prohibited (re)installation of an affected engine on any aeroplane, and (re)installation of an affected part on any engine.

Since that AD was issued, it has been determined that all affected pumps must be removed from service, for in-shop refurbishment, overhaul or repair to allow return to service. Consequently, Rolls-Royce published the NMSB to provide fuel pump replacement instructions.

For the reasons described above, this AD retains the requirements of EASA AD 2021-0245, which is superseded, and requires removal from service of all affected parts.

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

Required as indicated, unless accomplished previously:

Fuel Pump Replacement:

(1) For affected aeroplanes: Within 30 days after 17 November 2021 [the effective date of EASA AD 2021-0245], on at least one of the affected engines, replace the affected part with a fuel pump that is not an affected part in accordance with the instructions of Rolls-Royce NMSB RB.211-73-AK788.

(2) Within 250 flight cycles or 14 months, whichever occurs first after the effective date of this AD, remove each affected part from service and replace it with a fuel pump that is not an affected part in accordance with the instructions of the NMSB.

Engine Installation:

(3) From 17 November 2021 [the effective date of EASA AD 2021-0245], do not install an affected engine on any aeroplane.

Part installation:

(4) From 17 November 2021 [the effective date of EASA AD 2021-0245], do not install an affected part on any engine.

Ref. Publications:

Rolls-Royce Alert NMSB RB.211-73-AK788 original issue dated 09 November 2021.

Rolls-Royce Alert NMSB RB.211-73-AK840 original issue dated 13 September 2022.

Eaton Corporation SB 721400-73-006 original issue dated 11 August 2022.

Eaton Corporation SB 830800-73-002 original issue dated 11 August 2022.

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 19 October 2022 as PAD 22-135 for consultation until 16 November 2022. No comments were received during the consultation period.

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, 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**.