Airworthiness Directive

AD No.: 2020-0154

Issued: 10 July 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):
Trent 1000 engines

Effective Date: 17 July 2020

TCDS Number(s): EASA.E.036

Foreign AD: Not applicable

Supersedure: This AD supersedes EASA AD 2020-0124 dated 29 May 2020.

ATA 73 – Engine Fuel and Control – Fuel Pump – Replacement [Life Limitation]

Manufacturer(s):
Rolls-Royce plc

Applicability:
Trent 1000-A, Trent 1000-A2, Trent 1000-AE, Trent 1000-AE2, Trent 1000-C, Trent 1000-C2, Trent 1000-CE, Trent 1000-CE2, Trent 1000-D, Trent 1000-D2, Trent 1000-E, Trent 1000-E2, Trent 1000-G, Trent 1000-G2, Trent 1000-H, Trent 1000-H2, Trent 1000-J2, Trent 1000-K2 and Trent 1000-L2 engines, all serial numbers.

These engines are known to be installed on, but not limited to, Boeing 787 aeroplanes.

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

The NMSB: Rolls-Royce Alert Non-Modification Service Bulletin (NMSB) TRENT 1000 73-AK581 Revision 1. 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: Fuel pumps, having Part Number (P/N) G5030FPU01 or P/N TPS1000-05. The NMSB contains an Appendix, listing some fuel pumps that have undergone sufficient repair which qualifies them as overhauled. The life since overhaul for these parts can be calculated, as specified in the NMSB, for compliance with this AD.

Groups: Group 1 engines are those that have an affected part installed. Group 2 engines are those that do not have an affected part installed.

Reason:

An unexpected reduction in fuel pump performance has been seen during testing of high life units. Strip examination of these fuel pumps has identified that life related wear-out of the internal components is causing deterioration in pump efficiency. The effect of the loss of fuel pump efficiency is more pronounced on higher rated engines.

This condition, if not corrected, could lead to reduced engine thrust, possibly resulting in reduced control of the aeroplane.

To address this potential unsafe condition, Rolls-Royce published NMSB 73-AK581 (original issue) to provide instructions for replacement of the affected parts before exceeding reduced life limits. Consequently, EASA issued AD 2020-0124 to require the removal from service of the affected parts.

Since that AD was issued, Rolls-Royce issued the NMSB, as defined in this AD, introducing an additional fuel pump, P/N TPS1000-05, as well as new and reduced life limits for the affected parts, depending on engine model (rating).

For the reason described above, this AD retains the requirements of EASA AD 2020-0124, which is superseded, expands the Applicability to include additional Trent 1000 models (ratings) and requires implementation of the new and reduced life limits.

This AD is still considered an interim action and further AD action may follow.

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

Required as indicated, unless accomplished previously:

Life Limit Implementation:

(1) For Group 1 engines: Before an affected part exceeds the applicable life limits, as specified in section 1.D.(2) of the NMSB, remove that affected part from service and install a serviceable part in accordance with the instructions of the NMSB.

Engine Model (Rating) Change:

(2) The rating (model) of the engine as it is on the effective date of this AD determines whether any (and which) life limit applies. Changing the rating of an engine after the effective date of this AD does not affect compliance with this AD, unless the new rating, if specified in section 1.D.(2) of the NMSB, introduces a different or new life limit for the affected part. If, at the time of changing to rating D (which includes D/01 and D01A), D2, J2 or K2, the pump has reached or exceeded the limit, it must be replaced before operation of the engine.

Part Installation:

(3) For Group 1 and Group 2 engines: From the effective date of this AD, it is allowed to install an affected part on any engine, provided the part has not exceeded the applicable life limits as specified in section 1.D.(2) of the NMSB, and that, following installation, the affected part is replaced as required by paragraph (1) or paragraph (2), as applicable, of this AD.

Ref. Publications:

Rolls-Royce Trent 1000 Alert NMSB 73-AK581 original issue dated 12 May 2020 and Revision 1 dated 18 June 2020.

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 25 June 2020 as PAD 20-097 for consultation until 09 July 2020. 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 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**.