

Airworthiness Directive

AD No.: 2023-0185
Issued: 20 October 2023

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):

Trent 1000 engines

Effective Date: 03 November 2023

TCDS Number(s): EASA.E.036

Foreign AD: Not applicable

Supersedure: None

ATA 72 – Engine – Low Pressure Compressor Blades – Inspection / Replacement

Manufacturer(s):

Rolls-Royce plc

Applicability:

Trent 1000 engines, models Trent 1000-A, Trent 1000-AE, Trent 1000-C, Trent 1000-CE, Trent 1000-D, Trent 1000-E, Trent 1000-G and Trent 1000-H engines, all engine serial numbers (ESN); and
 Trent 1000-A2, Trent 1000-AE2, Trent 1000-C2, Trent 1000-CE2, Trent 1000-D2, Trent 1000-E2, Trent 1000-G2, Trent 1000-H2, Trent 1000-J2, Trent 1000-K2 and Trent 1000-L2 engines, all ESN.

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 72-AK965 Revision 1. Where, in this AD, reference is made to a Rolls-Royce modification (mod), Service Bulletin (SB) or NMSB 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.

Affected part: Low pressure (LP) compressor blades, having Part Number (P/N) FW61399 and a serial number (s/n) as identified in Appendix 1 of the NMSB. Appendix 1 of the NMSB also identifies (for information only) the individual engines (ESN) where the affected parts were known to be installed at the time of NMSB issuance.

Serviceable part: LP compressor blade, eligible for installation, which is not an affected part, either new or service-used material (SUM); or an affected part which has passed an inspection (no defects found that would result in rejecting the blade) in accordance with the instructions of the NMSB, or a part accepted via a Rolls-Royce approved Technical Variance.

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:

It has been determined that the affected parts are at risk of cracking, due to incorrect dressing, potentially performed on areas of low wall thickness and high localised internal stress level.

This condition, if not inspected and corrected, could lead to release of uncontained high-energy debris, with consequent engine in-flight shut-down, possibly resulting in reduced control of, and/or damage to, the aeroplane.

To address this potential unsafe condition, Rolls-Royce issued NMSB TRENT 1000 72-AK965 at original issue providing inspection instructions. Subsequently, Rolls-Royce issued Revision 1 of NMSB TRENT 1000 72-AK965 (the NMSB, as defined in this AD), introducing more affected parts (s/n) and adding inspection compliance dates and expanding the Effectivity to include additional engine models.

For the reason described above, this AD requires a one-time inspection of all affected parts, and, depending on findings, replacement. This AD also regulates the (re)installation of affected parts.

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

Required as indicated, unless accomplished previously:

Inspection:

- (1) For Group 1 engines: Before exceeding the applicable inspection compliance date quoted in Appendix 1 of the NMSB, or within 30 days after the effective date of this AD, whichever occurs later, inspect each affected part in accordance with the instructions of the NMSB.

Corrective Action:

- (2) If, during the inspection as required by paragraph (1) of this AD, the condition of any affected part exceeds the acceptance criteria of the NMSB, or as an alternative to the inspection as required by paragraph (1) of this AD, as applicable, before exceeding the inspection compliance date quoted in Appendix 1 of the NMSB, or within 30 days after the effective date of this AD, whichever occurs later, replace the affected parts with serviceable parts in accordance with the instructions of the NMSB.



Credit:

- (3) Inspections and replacements on an engine, accomplished before the effective date of this AD in accordance with the instructions of Rolls-Royce NMSB TRENT 1000 72-AK965 at original issue, are acceptable to comply with the requirements of paragraphs (1) and (2) of this AD for that engine.

Part(s) Installation:

- (4) For Group 1 and Group 2 engines: From the effective date of this AD, it is allowed to install on any engine an affected part, provided it is a serviceable part, as defined in this AD.

Ref. Publications:

Rolls-Royce TRENT 1000 Alert NMSB 72-AK965 original issue dated 19 May 2023 and Revision 1 dated 01 August 2023.

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 initially posted on 07 July 2023 as PAD 23-084 for consultation until 21 July 2023, re-published on 31 August 2023 as PAD 23-084R1 for consultation until 14 September 2023 and finally re-published as PAD 23-084R2 on 21 September 2023 for consultation until 05 October 2023. The Comment Response Documents 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 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**.

Superseded

