



Notification of a Proposal to issue an Airworthiness Directive

PAD No.: 23-084R2

Issued: 21 September 2023

Note: This Proposed Airworthiness Directive (PAD) 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.

In accordance with the EASA Continuing Airworthiness Procedures, the Executive Director is proposing the issuance of an EASA Airworthiness Directive (AD), applicable to the aeronautical product(s) identified below.

All interested persons may send their comments, referencing the PAD Number above, to the e-mail address specified in the 'Remarks' section, prior to the consultation date indicated.

Design Approval Holder's Name:

ROLLS-ROYCE DEUTSCHLAND Ltd & Co KG

Type/Model designation(s):

Trent 1000 engines

Effective Date: [TBD - standard: 14 days after AD issue date]

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: An 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 (IFSD), possibly resulting in reduced control of, and/or damage to, the aeroplane.

To address this potential unsafe condition, Rolls-Royce issued the NMSB, as defined in this AD, providing inspection instructions. Subsequently, Rolls-Royce issued Revision 1 of NMSB TRENT 1000 72-AK965 (the NMSB, as redefined 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 PAD is revised to expand the Applicability, proposing to require a one-time inspection of all affected parts, and, depending on findings, replacement. This PAD also proposes to regulate 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.

Part(s) Installation:

- (3) 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. This Proposed AD will be closed for consultation on 05 October 2023.
2. This PAD was initially posted on 07 July 2023 as PAD 23-084 for consultation until 21 July 2023, and re-published on 31 August 2023 as PAD 23-084R1 for additional consultation until 14 September 2023. Both Comment Response Documents can be found in the [EASA Safety Publications Tool](#), in the compressed (zipped) file attached to the record for this PAD.
3. Enquiries regarding this PAD 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 PAD, and which may occur, or have occurred on a product, part or appliance not affected by this PAD, 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 PAD 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**.

