



Notification of a Proposal to issue an Airworthiness Directive

PAD No.: 23-057

Issued: 17 May 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: This AD supersedes EASA AD 2022-0247 dated 14 December 2022.

ATA 05 – Time Limits / Maintenance Checks – Time Limits Manual / Maintenance Programme – Amendment

Manufacturer(s):

Rolls-Royce plc

Applicability:

Trent 1000-AE3, Trent 1000-CE3, Trent 1000-D3, Trent 1000-G3, Trent 1000-H3, Trent 1000-J3, Trent 1000-K3, Trent 1000-L3, Trent 1000-M3, Trent 1000-N3, Trent 1000-P3, Trent 1000-Q3 and Trent 1000-R3 engines, all serial numbers.

Definitions:

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

The TLM: Rolls-Royce Trent 1000 Time Limits Manual (TLM) T-Trent-10RRT, Chapters 05-10 and 05-20, Revision 26 dated 01 May 2023.

The AMP: The Aircraft Maintenance Programme (AMP) contains the tasks on the basis of which the scheduled maintenance is conducted to ensure the continuing airworthiness of each operated engine. For engines installed on aeroplanes operated under EU regulations, the operator or the owner ensures compliance with the AMP as stipulated in Commission Regulation (EU) [1321/2014](#).



New and/or more restrictive tasks: This includes all tasks and limitations that are new, or for which a threshold, life limit or interval was reduced, which were introduced into the TLM (as defined in this AD) since the previous TLM Revision that is currently incorporated in the AMP.

Reason:

The airworthiness limitations and/or certification maintenance instructions for certain Trent 1000 engines (also known as 'TEN'), which are approved by EASA, are defined and published in TLM T-Trent-10RRT. These instructions have been identified as mandatory for continued airworthiness.

Failure to accomplish these instructions could result in an unsafe condition.

Previously, EASA issued AD 2022-0247 to require accomplishment of the tasks and limitations specified in TLM T-Trent-10RRT at Revision 23.

Since that AD was issued, Rolls-Royce revised the TLM to add the post-72-J709 low pressure (LP) turbine nozzle guide vane (NGV) to the list of tracked parts in Revision 24; to introduce flight profile monitoring in accordance with the latest revision of the Aircraft Maintenance Manual (AMM), to change the Declared Safe Cyclic Life (DSCL) and the Mandatory Time Between Inspections (MTBI) of the high pressure (HP) compressor Stage 4, 5 and 6 discs and cone rotor rear shaft, and to update the Direct Accumulation Counting (DAC) data files table in Revision 25; to revise the references to the AMM and to add certain air pipes (IP8-TBH Transfer Pipes, HP/IP bearing support air pipes, LP turbine bearing support air pipes) to the list of mandatory inspections in Revision 26.

For the reasons described above, this AD retains the requirements of EASA AD 2022-0247, which is superseded, and requires accomplishment of the actions specified in the TLM.

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

Required as indicated, unless accomplished previously:

Maintenance Tasks and Replacement of Critical Parts:

- (1) From the effective date of this AD, accomplish the following actions, as specified in the TLM, as applicable to engine model and depending on engine configuration:
 - (1.1) Replace each component before exceeding the applicable life limit.
 - (1.2) Within the thresholds and intervals, accomplish all applicable maintenance tasks.
 - (1.3) Ensure that DAC tables shown in the DAC life-usage calculator (LUC) tool match the applicable DAC Data Files as specified in the TLM.
 - (1.4) Ensure flight profile monitoring is conducted using take-off and en-route speed limits as specified in the TLM.

Corrective Action(s):

- (2) In case of finding discrepancies (as defined in the TLM) during accomplishment of any task as required by paragraph (1) of this AD, within the compliance time specified in the TLM, accomplish the applicable corrective action(s) in accordance with approved Rolls-Royce



maintenance documentation. If no compliance time is identified in the TLM, accomplish the applicable corrective action(s) before next flight. If a detected discrepancy is not identified in the TLM, before next flight, contact Rolls-Royce for approved instructions and accomplish those instructions accordingly.

AMP Revision:

- (3) Within 12 months after the effective date of this AD, revise the approved AMP by incorporating the limitations, tasks and associated thresholds and intervals described in the TLM, as applicable to engine model and depending on engine configuration.

Credit:

- (4) If, before the effective date of this AD, the AMP has been revised to incorporate the maintenance tasks and life limitations as specified in a previous revision of Rolls-Royce Trent 1000 TLM T-Trent-10RRT, that action ensures the continued accomplishment of those tasks and limitations.

Consequently, for an aeroplane to which that AMP applies, it is acceptable to accomplish the new and/or more restrictive tasks, as defined in this AD, as applicable to engine model and depending on engine configuration, within the compliance times as specified in the TLM to comply with paragraph (1) of this AD.

For that AMP, it is acceptable to incorporate the new and/or more restrictive tasks, as defined in this AD, as applicable to engine model and depending on engine configuration, into the AMP to comply with paragraph (3) of this AD.

Recording AD Compliance:

- (5) When the AMP of an aeroplane has been revised as required by paragraph (3) or (4) of this AD, as applicable, that action ensures continued accomplishment of the tasks as required by paragraphs (1) and (2) of this AD for the engine(s) installed on that aeroplane. Consequently, after revising the AMP, as required by paragraph (3) or (4) of this AD, as applicable, it is not necessary that accomplishment of individual action is recorded for demonstration of AD compliance on a continued basis.

Ref. Publications:

Rolls-Royce Trent 1000 TLM T-Trent-10RRT, Revision 26 dated 01 May 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 31 May 2023.
2. Enquiries regarding this PAD should be referred to the EASA Safety Information Section, Certification Directorate. E-mail: ADs@easa.europa.eu.
3. 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.

4. 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**.

