

Airworthiness Directive

AD No.: 2023-0186
Issued: 27 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 7000 engines

Effective Date: 10 November 2023

TCDS Number(s): EASA.E.036

Foreign AD: Not applicable

Supersedure: None

ATA 75 – Air – Intermediate / High Pressure Air Tubes – Inspection

Manufacturer(s):

Rolls-Royce plc

Applicability:

Trent 7000-72 and Trent 7000-72C engines, all serial numbers.

These engines are known to be installed on, but not limited to, Airbus A330 (NEO) aeroplanes.

Definitions:

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

The NMSB: Rolls-Royce Alert Non-Modification Service Bulletin (NMSB) TRENT 1000 75-AK962.

The SB: Rolls-Royce Service Bulletin (SB) TRENT 1000 72-K336.

Affected part(s): Intermediate pressure (IP) Stage 8 (IP8) and high pressure (HP) Stage 3 (HP3) air tubes identified in Tables 1 and 2, respectively, of Appendix 1 of the NMSB.

Shop visit: Any engine maintenance shop visit during which the core module flange is separated (including Hospital, Check and Rectify shop visits).

Groups: Group 1 engines are those which have embodied Rolls-Royce modification (mod) 72-K336 in production, or the SB in service. Group 2 engines are those which have not embodied Rolls-Royce mod 72-K336 in production, nor the SB in service.

Reason:

The Rolls-Royce Trent 7000 engine maintenance instructions normally contain instructions for visual inspections to determine the integrity of the affected parts, as defined in this AD, at intervals consistent with exposure assumptions used in critical part life assessments. Review of these instructions identified that on Group 1 engines, fracture of an affected part can remain undetected for a longer period than the planned shop visit for the engine. Additionally, for Group 2 engines, while adequate inspection is carried out during a shop visit for high pressure turbine blade replacement, there are no specific instructions to inspect the affected air tubes.

This potential unsafe condition, if not detected and corrected, could lead to reduced efficiency of internal cooling and sealing flows, possibly resulting in engine critical parts being unable to achieve their approved lives, leading to engine critical part failure, damage to the engine, and reduced control of the aeroplane.

To address this potential unsafe condition, Rolls-Royce issued the NMSB, providing instructions to inspect the affected parts.

For the reasons described above, this AD requires repetitive visual inspections of each affected part and, depending on findings, accomplishment of applicable corrective action(s).

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

Required as indicated, unless accomplished previously:

Inspection:

- (1) For Group 1 engines (on-wing): Within the compliance time defined in Table 1 of this AD, and, thereafter, at intervals not to exceed 1 000 flight cycles (FC), inspect each affected part in accordance with the instructions of Section 3.A (on-wing) of the NMSB.

Table 1 – Air Tube Inspection

| Compliance Time (A or B, whichever occurs later) | |
|--|--|
| A | Within 1 000 FC after embodiment of the SB or before exceeding 1 000 FC since first flight of the engine, as applicable. |
| B | Within 30 days after the effective date of this AD. |

- (2) For Group 1 and Group 2 engines: During the next shop visit after the effective date of this AD, when a core module flange is separated, inspect each affected part in accordance with the instructions of Section 3.B (in-shop) of the NMSB.

Note 1: Group 2 engines are subject of core module flange separations at intervals 1 000 FC in fulfilling the requirements of EASA AD 2021-0169.



- (3) For Group 1 and Group 2 engines: For an engine that, on the effective date of this AD, is in a shop visit, before release to service of that engine, inspect each affected part in accordance with the instructions of Section 3.B (in-shop) of the NMSB.
- (4) Within 1 000 FC after the inspection, as required by paragraph (2) or (3) of this AD, as applicable, and thereafter at intervals not to exceed 1 000 FC, inspect each affected part (on-wing or in-shop) in accordance with the instructions Section 3.A (on-wing) or 3.B (in-shop) of the NMSB, as applicable.

In-shop Inspection instead of On-wing:

- (5) Accomplishment of an in-shop inspection of a Group 1 engine as required by paragraph (2) or (3) of this AD is acceptable to comply with an on-wing inspection as required by paragraph (1) of this AD for that engine.

Corrective Action(s):

- (6) If, during any inspection as required by paragraph (1), (2), (3) or (4) of this AD, as applicable, any damage is detected, as defined in the NMSB, before next flight (for engines on-wing), or before release to service of the engine (for engines in-shop visit), as applicable, accomplish the applicable corrective action(s) in accordance with the instructions of Section 3 of the NMSB.

Modification:

- (7) For Group 2 engines: From the effective date of this AD, modification of an engine in accordance with the instructions of the SB is allowed, provided that, following modification, the engine (which effectively has become a Group 1 engine) is inspected and, depending on findings, corrected as required by this AD.

Ref. Publications:

Rolls-Royce Alert NMSB TRENT 1000 75-AK962 original issue dated 20 October 2023.

Rolls-Royce SB TRENT 1000 72-K336 original issue dated 03 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. Based on the required actions and the compliance time, EASA have decided to issue a Final AD with Request for Comments, postponing the public consultation process until after publication.
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

