Notification of a Proposal to issue an Airworthiness Directive

PAD No.: 26-071

Issued: 03 June 2026

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 and Trent 7000 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 2024-0178 dated 12 September 2024.

ATA 72 – Engine – Intermediate Pressure Compressor Shaft Assembly / Front Air Seal – Inspection

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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 (s/n); and

Trent 7000-68, Trent 7000-70, Trent 7000-72, Trent 7000-72 C and Trent 7000 72-D engines, all s/n.

These engines are known to be installed on, but not limited to, Boeing 787 and Airbus A330 aeroplanes, as applicable.

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

Affected part(s): Intermediate pressure compressor (IPC) shaft assemblies, having Part Number (P/N) LV18447 or P/N LV19601.

Serviceable part: IPC shaft assembly, eligible for installation in accordance with Rolls-Royce instructions which is not an affected part; or an affected part which is new (never installed); or an affected part which passed an inspection (no defect found) in accordance with the instructions of the NMSB, as defined in this AD, or Rolls-Royce NMSB Trent 1000 72-K618 Revision 2.

The NMSB: Rolls-Royce Alert Non-Modification Service Bulletin (NMSB) Trent 1000 72−AL139 Revision (Rev.) 1.

The modification SB: Rolls-Royce Service Bulletin (SB) TRENT 1000 72-L197 (installing IPC shaft assembly P/N LV39600), or TRENT 1000 72-L198 at Rev. 1 (installing IPC shaft assembly P/N LV39838), or TRENT 1000 72-L199 (installing IPC shaft assembly P/N LV39600), or TRENT 1000 72-L200 at Rev. 1 (installing IPC shaft assembly P/N LV39838), as applicable to engine model and s/n.

Where, in this AD, reference is made to a Rolls-Royce 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.

Groups:
Group 1 engines are:
Trent 1000 engine models that have IPC shaft assembly's P/N LV18447 or P/N LV19601 installed; and
Trent 7000-72, Trent 7000-72 C engine models that have IPC shaft assembly's P/N LV18447 or P/N LV19601 installed.

Group 2 engines are Trent 7000-68 and Trent 7000-70 and Trent 7000 72-D engine models that have IPC shaft assembly P/N LV19601 installed.

Group 3 are engines which are not Group 1 nor Group 2 engines.

Reason:
Occurrences of cracked IPC shaft assembly front air seals, installed on Group 1 engines were reported. The subsequent investigations identified possible change of the vibration and flutter characteristics of the affected parts and identified a potential propagation of the cracking into the IPC stage 1 disc.

This condition, if not detected and corrected, could possibly lead to IPC stage 1 disk burst with subsequent release of high energy debris and damage to the aeroplane or failure of the IPC front seal and release of debris, leading to an engine in-flight shut down, and consequent reduced control of an aeroplane.

To address this potential unsafe condition, Rolls-Royce published the original issue of the NMSB Trent 1000 72−AL139 and EASA issued AD 2024-0178 to provide inspection instructions.

Since the issuance of AD 2024-0178, it has been determined that IPC shaft assembly having P/N LV19601 is eligible for installation on additional engine models (defined as Group 2 engines in this AD). Additionally, Rolls-Royce published the modification SBs introducing IPC shaft assemblies

P/N LV39838 and P/N LV39600 which incorporate a redesigned tapered front seal ring for better stiffness and vibration behaviour, along with minor geometric and manufacturing refinements.

For the reasons described above, this AD retains the requirements of EASA AD 2024-0178, which is superseded, expands the Applicability to all engines potentially exposed to the unsafe condition and requires repetitive inspections of the front air seal of the affected part(s) and, depending on findings, removal of the engine from service and subsequent applicable corrective action(s). This AD also introduces modification of the engines in accordance with the modification SB, installing IPC shaft assemblies that are not an affected part under this AD, as optional terminating action for the repetitive inspections required by this AD.

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

Required as indicated by this AD, unless the action(s) required by this AD have been already accomplished:

On–wing Inspection:

(1) For Group 1 engines: Within 500 engine flight cycles (EFC) accumulated by the affected part since new (for P/N LV19601) or since embodiment of Rolls-Royce SB Trent 1000 72-K571 (for P/N LV18447) or SB Trent 1000 72-K570 (for P/N LV18447), as applicable, **or** within the compliance time as defined in Table 1 of this AD, whichever occurs later, and, thereafter at intervals not to exceed 300 EFC, accomplish a visual inspection of the front air seal of each affected part in accordance with the instructions of the NMSB (Method A or Method B).

Table 1 – Compliance Time

Number of EFC (see Note 1 of this AD)	**Compliance Time**
Less than 500	Within 500 EFC after embodiment of Rolls-Royce SB Trent 1000 72-K571 (Trent 1000 engines) or SB Trent 1000 72-K570 (Trent 7000 engines), as applicable; or within 300 EFC after 26 September 2024 [the effective date of EASA AD 2024-0178], whichever occurs later
500 or more but less than 800	Within 800 EFC after embodiment of Rolls-Royce SB Trent 1000 72-K571 (Trent 1000 engines) or SB Trent 1000 72-K570 (Trent 7000 engines), as applicable; or within 200 EFC after 26 September 2024 [the effective date of EASA AD 2024-0178], whichever occurs later
800 or more	Within 1 000 EFC after embodiment of Rolls-Royce SB Trent 1000 72-K571 (Trent 1000 engines) or SB Trent 1000 72-K570 (Trent 7000 engines), as applicable; or within 50 EFC after 26 September 2024 [the effective date of EASA AD 2024-0178], whichever occurs later

Note 1: The EFC specified in column ‘Number of EFC’ of the Table 1 of this AD are those accumulated on 26 September 2024 [the effective date of EASA AD 2024-0178] by the affected part having P/N LV18447 since accomplishment of Rolls-Royce SB Trent 1000 72-K571 (Trent 1000 engines) or SB Trent 1000 72-K570 (Trent 7000 engines), as applicable; or by the affected part having P/N LV19601 since new, as applicable.

(2) For Group 2 engines: Within 500 EFC accumulated by the IPC shaft assembly having P/N LV19601 since new, **or** within the compliance time as defined in Table 2 of this AD, whichever occurs later, and, thereafter at intervals not to exceed 300 EFC, accomplish a visual inspection of the front air seal of each affected part in accordance with the instructions of the NMSB (Method A or Method B).

Table 2 – Compliance Time

Number of EFC (see Note 2 of this AD)	**Compliance Time**
Less than 500	Within 300 EFC after the effective date of this AD
500 or more but less than 800	Within 200 EFC after the effective date of this AD
800 or more	Within 50 EFC after the effective date of this AD

Note 2: The EFC specified in column 'Number of EFC' of the Table 2 of this AD are those accumulated on the effective date of this AD by the IPC shaft assembly having P/N LV19601 since new.

In-shop Inspection:

(3) For Group 1 and Group 2 engines: In-shop inspection of an engine or an affected part in accordance with the instructions of the NMSB or Rolls-Royce NMSB Trent 1000 72-K618 Rev. 2 is acceptable to comply with the requirements of paragraph (1) or (2) of this AD, as applicable, provided that the applicable compliance time and intervals as defined in paragraph (1) or (2) of this AD, as applicable, are not exceeded and that, before release to service of that engine, found discrepancies are corrected, as applicable, in accordance with the instructions of the NMSB or Rolls-Royce NMSB Trent 1000 72-K618 Rev. 2.

Corrective Action(s):

(4) If, during any on-wing inspection as required by paragraph (1) or (2) of this AD, as applicable, any cracked affected part is detected, before next flight, remove the engine from service in accordance with the instructions of the NMSB and, before release to service of that engine, replace the affected part with a serviceable part, as defined in this AD, in accordance with approved Rolls-Royce maintenance instructions.

Credit:

(5) For Group 1 engines and Group 2 engines converted from Group 1 in accordance with RR approved conversion instructions:
Inspections(s) and corrective actions(s), as applicable, accomplished on an engine before the effective date of this AD in accordance with the instructions of Rolls-Royce Alert NMSB Trent 1000 72−AL139 at original issue are acceptable to comply with the requirements of paragraph (1), (3) and (4) of this AD, as applicable, for that engine.

Acceptable Method of Compliance:

(6) For Group 1 and Group 2 engines: Inspection(s) and corrective action accomplished in-shop or on-wing on an engine in accordance with the instructions of Rolls-Royce Technical Variance (TV) 277059 are acceptable to comply with the initial requirements of the paragraphs (1), (2) and (4) of this AD, as applicable, for that engine.

(7) The IPC shaft assemblies listed (by P/N and s/n) in Appendix 3 of the NMSB are known to have been already inspected before the effective date of this AD in accordance with maintenance instructions equivalent to those of the NMSB, and are therefore considered compliant with the initial inspection requirement of paragraph (1) and (2) of this AD. Appendix 3 of the NMSB provides the number of EFC accumulated by each listed affected part at the time of initial inspection. Subsequent inspections must be accomplished on these parts as required by paragraph (1) or (2) of this AD, as applicable.

Optional Terminating Action:

(8) For Group 1 engines: Modification of an engine in accordance with the instructions of the modification SB constitutes terminating action for the repetitive inspections required by this AD for that engine, provided that, thereafter, no affected part is installed on that engine.

Additional Requirements:

(9) Except for Group 3 engines having IPC shaft assembly P/N LV39838 installed: From the effective date of this AD, modification of an engine in accordance with the instructions of Rolls-Royce SB Trent 1000 72-K571 (Trent 1000 engines) or SB Trent 1000 72-K570 (Trent 7000 engines), as applicable, is allowed, provided that, after modification, that engine is inspected and, depending on findings, corrected as required by this AD for Group 1 or Group 2 engine, as applicable.

Ref. Publications:

Rolls-Royce Alert NMSB Trent 1000 72−AL139 original issue dated 05 July 2024, or Rev. 1 dated 16 December 2025.

Rolls-Royce NMSB Trent 1000 72-K618 Rev. 2 dated 13 June 2024.

Rolls-Royce SB Trent 1000 72-K570 original issue dated 15 June 2021, or Rev. 1 dated 31 March 2023.

Rolls-Royce SB Trent 1000 72-K571 original issue dated 15 June 2021, or Rev. 1 dated 22 February 2022.

Rolls-Royce SB TRENT 1000 72-L197 original issue date 10 April 2025.

Rolls-Royce SB TRENT 1000 72-L198 Rev. 1 dated 03 October 2025.

Rolls-Royce SB TRENT 1000 72-L199 original issue dated 10 April 2025.

Rolls-Royce SB TRENT 1000 72-L200 Rev. 1 dated 17 October 2025.

The use of later approved revisions of the above-mentioned documents is acceptable for compliance with the requirements of this AD.

Remarks:

1. This Proposed AD will be closed for consultation on 01 July 2026.

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 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 E-mail through https://www.rolls-royce.com/contact-us/civil-aerospace.aspx,
identifying the correspondence as being related to **Airworthiness Directives**.