# Airworthiness Directive

**AD No.:** 2020-0277

**Issued:** 11 December 2020

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, 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 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 XWB engines

Effective Date: 25 December 2020

TCDS Number(s): EASA.E.111

Foreign AD: Not applicable

Supersedure: None

## ATA 72 – Engine – Intermediate Pressure Compressor Rotor 1 Blades – Inspection



**Manufacturer(s):**
Rolls-Royce plc

**Applicability:**
Trent XWB-75, Trent XWB-79, Trent XWB-79B and Trent XWB-84 engines, all serial numbers.

These engines are known to be installed on, but not limited to, Airbus A350 aeroplanes.

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

Where, in this AD, reference is made to a Rolls-Royce Service Bulletin (SB) with an 'A' (Alert) in the number, it should be recognised that a later revision may not have that 'A'. This kind of change does not effectively alter the publication references for the purpose of this AD.

**The NMSB**: Rolls-Royce Alert Non-Modification SB (NMSB) TRENT XWB 72-AK632.

**The inspection NMSB**: Rolls-Royce NMSB TRENT XWB 72-K633.

**Affected part**: Intermediate pressure compressor (IPC) Rotor 1 (R1) blades, having Part Number KH21559 (post-SB/mod 72-H408 standard).

**Serviceable part**: An affected part that is new (not previously installed), or that has not exceeded 2 300 engine flight cycles (EFC) since first installation on an engine; or an affected part that, prior to installation, has passed an inspection (no cracks found) in accordance with the instructions of the inspection NMSB.

**Affected engine**: An engine with an affected part installed.

**Reason:**

Occurrences have been reported of finding cracked IPC R1 blades on certain Trent XWB engines that were close to their first planned refurbishment shop visit.

This condition, if not corrected, could lead to blade failure and consequent engine in-flight shut-down (IFSD), possibly resulting in reduced control of the aeroplane.

To address this potential unsafe condition and avoid dual engine IFSD, Rolls-Royce issued the inspection NMSB to provide inspection instructions and the NMSB to provide information on threshold and intervals.

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

This AD is considered an interim action and further AD action may follow.

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

Required as indicated, unless accomplished previously:

**Inspection(s)**:

(1) Within the compliance time specified in Table 1 of this AD, as applicable, and, thereafter, at intervals not to exceed 200 EFC, accomplish an on-wing or in-shop inspection of each affected engine in accordance with the instructions of the inspection NMSB.

Table 1 – Inspection Threshold (see Note 1 of this AD)

| EFC Accumulated | Compliance Time |
|---|---|
| Less than 2 300 EFC | Before exceeding 2 300 EFC, or within 50 EFC after the effective date of this AD, whichever occurs later |
| 2 300 EFC or more | Within 50 EFC after the effective date of this AD |

Note 1: Unless indicated otherwise, the EFC specified in Table 1 of this AD are those accumulated by the oldest affected part in the IPC R1 blade set since the first installation of this blade on an engine. In the case when the EFC of the IPC R1 blade set cannot be established, use the EFC accumulated by the engine since new.

**Corrective Action(s)**:

(2) If, during any inspection as required by paragraph (1) of this AD, any affected part is found cracked, before next flight, or before release to service of the engine, as applicable, contact Rolls-Royce for approved corrective action instructions and accomplish those instructions accordingly.

**Credit**:

(3) Inspection(s) and corrective action(s) on an engine, accomplished before the effective date of this AD in accordance with the instructions of Rolls-Royce NMSB TRENT XWB 72-AK612 or NMSB TRENT XWB 72-AK613, as applicable, are an acceptable method to comply with the initial requirements of paragraphs (1) and (2) of this AD for that engine.

**Terminating Action**:

(4) None.

**Parts Installation**:

(5) From the effective date of this AD, it is allowed to install on any engine an affected part, provided this is a serviceable part, as defined in this AD and that, following installation, the affected engine is inspected as required by this AD.

## Ref. Publications:

Rolls-Royce Alert NMSB TRENT XWB 72-AK632 original issue dated 07 August 2020.

Rolls-Royce NMSB TRENT XWB 72-K633 original issue dated 07 August 2020.

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

Rolls-Royce Alert NMSB TRENT XWB 72-AK612 original issue dated 09 July 2020.

Rolls-Royce Alert NMSB TRENT XWB 72-AK613 original issue dated 17 July 2020.

## Remarks:

1. If requested and appropriately substantiated, EASA can approve Alternative Methods of Compliance for this AD.

2. This AD was posted on 12 August 2020 as PAD 20-120 for consultation until 09 September 2020. The Comment Response Document 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 Programming and Continued Airworthiness 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**.