Airworthiness Directive

AD No.: 2019-0112

Issued: 21 May 2019

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: 04 June 2019

TCDS Number(s): EASA.E.111

Foreign AD: Not applicable

Supersedure: None

ATA 73 – Engine Fuel & Control – Engine Electronic Controller Software – Update

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Manufacturer(s):
Rolls-Royce plc

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

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:

The SB: Rolls-Royce Alert Service Bulletin (SB) TRENT XWB 73-AK228, or Airbus SB A350-73-P007.

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

Affected SW: Engine electronic controller (EEC) software (SW) XWB_84-4.2.2, Part Number (P/N) RRY24XWB0020013, or earlier versions and P/N.

Serviceable SW: EEC SW XWB_84-6.1.1, P/N RRY25XWB0010022, or later approved versions and P/N.

Groups: Group 1 engines are those that have an EEC with an affected SW installed.
Group 2 engines are those that have an EEC with serviceable SW installed. An engine having ESN 21517, 21518, 21524, 21526 or 21652, and any engine having ESN 21701 or higher, is a Group 2 engine, provided that the EEC SW currently installed on the engine is serviceable SW, as defined in this AD.

Reason:

Based on review of the SW logic, it was determined that there could be certain adverse conditions affecting the fuel flow limits. In addition, it was found that the low pressure (LP) shaft rotational speed keep-out-zone limits were not optimised. This could lead to engine stabilisation in a speed region where it may result in LP compressor blade flutter.

These conditions, if not corrected, could lead to loss of thrust control, or to multiple LP compressor blade failures and consequent high energy debris release, as applicable, possibly resulting in reduced control of the aeroplane.

To address these potential unsafe conditions, Rolls-Royce defined a new EEC SW, XWB_84-6.1.1, P/N RRY25XWB0010022, which corrects these issues.

For the reasons described above, this AD requires a modification by updating the EEC SW. This AD also prohibits installation of affected SW on post-mod/SB engines.

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

Required as indicated, unless accomplished previously:

SW update:

(1) For Group 1 engines: Within 30 days after the effective date of this AD, update the EEC SW in accordance with the instruction of the SB.

SW Installation:

(2) Do not upload affected SW on any engine or EEC, as required by paragraph (2.1) or (2.2) of this AD, as applicable.

(2.1) For Group 1 engines: After modification of the engine as required by paragraph (1) of this AD.

(2.2) For Group 2 engines: From the effective date of this AD.

Engine/EEC Installation:

(3) From the effective date of this AD, it is allowed to install on any aeroplane an engine or EEC with affected SW, provided that, within 30 days after the effective date of this AD, or before release to service of the aeroplane, whichever occurs later, the engine or EEC, as applicable, is modified to install serviceable SW, as defined in this AD.

Ref. Publications:

Rolls-Royce Alert SB TRENT XWB 73-AK228 original issue dated 22 March 2019.

Airbus SB A350-73-P007 original issue dated 19 March 2019.

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. This AD was posted on 01 April 2019 as PAD 19-052 for consultation until 22 April 2019. 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.

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 http://www.rolls-royce.com/contact/civil_team.jsp identifying the correspondence as being related to **Airworthiness Directives**.