



Notification of a proposal to issue an Airworthiness Directive

PAD No.: 16-031

Issued: 29 February 2016

Note: This Proposed Airworthiness Directive (PAD) is issued by EASA, acting in accordance with Regulation (EC) 216/2008 on behalf of the European Union, its Member States and of the European third countries that participate in the activities of EASA under Article 66 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 plc

Type/Model designation(s):

RB211 Trent 800 engines

Effective Date: [TBD - standard: 14 days after AD issue date]

TCDS Number(s): EASA.E.047

Foreign AD: Not applicable

Supersedure: None

ATA 72 – Engine – High Pressure Compressor Stage 1-4 Drum – Inspection

Manufacturer(s):

Rolls-Royce plc (RR)

Applicability:

RB211 Trent 895-17, 892-17, 892B-17, 884-17, 884B-17, 877-17 and 875-17 engines, all serial numbers, except those that embody Modification (Mod) 72-J195 in production.

These engines are known to be installed on, but not limited to, Boeing 777 aeroplanes.

Reason:

Inspection of Trent 800 engines returned from service revealed flame eroded areas and axial cracking on the rear Stage 3 disc of the High Pressure Compressor (HPC) Stage 1-4 drum. This is considered to be the result of a localised fire originating from an excessive rub at the stage 3-4 forward seal fin.

This condition, if not detected and corrected, could lead to an uncontained engine failure and release of high energy debris, possibly resulting in damage to the aeroplane and injury to occupants.



To address this potential unsafe condition, RR have developed Mod 72-J195, which is also available as Service Bulletin (SB) RB.211-72-J195 for in-service accomplishment.

For the reasons described above, this AD requires repetitive inspections of the HPC Stage 1-4 drum on pre-Mod 72-J195 engines and, depending on findings, replacement with a serviceable part. This AD also specifies SB RB.211-72-J195 as optional terminating action for these inspections.

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

Required as indicated, unless accomplished previously:

Note 1: For the purpose of this AD, an affected HPC Stage 1-4 drum has Part Number (P/N) FK24009, P/N FK26167, P/N FK32580, P/N FW11590, P/N FW61622, P/N FW88723, P/N FW88724 or P/N FW88725.

- (1) Before exceeding 5 000 duty cycles (Standard, Heavy or Max, as applicable, see Note 2 of this AD) since the last HPC stage 1-4 drum piece-part inspection, and, thereafter, at intervals not to exceed 5 000 duty cycles, accomplish the actions specified in paragraphs (1.1) and (1.2) concurrently.

Note 2: For the purpose of this AD, duty cycles are defined in the Airworthiness Limitations Section of the applicable RR Engine Manual (EM).

(1.1) Inspect the affected HPC stage 1-4 drum seal fin 41-3028 for evidence of wear. Accomplishment of this inspection in accordance with the applicable EM, task 72-41-31-200-801, is an acceptable method.

(1.2) Inspect the affected HPC stage 3 circumferential dovetail slot 7A & 7B (see Note 3 of this AD) for cracking and/or evidence of flame erosion. Accomplishment of this inspection in accordance with the applicable EM, Section 17, Sub-task 72-41-31-220-193 (for loading slot focus inspection areas, see Figure 72-41-31-990-008), is an acceptable method.

Note 3: Dovetail slot label for the affected HPC stage 3 disc is dependent on whether the drum is pre-SB RB211-72-B672 (pre-SB, see EM Fig 72-41-31-990-006-001) or post-SB RB.211-72-B672 (post-SB, see EM Fig 72-41-31-990-006-002). The pre-SB Stage 3 loading slot is labelled 7B and the post-SB Stage 3 loading slot is labelled 7A.

- (2) If, during any inspection as required by paragraph (1) of this AD, any discrepancy is detected, before next flight, or before release to service of the engine, as applicable, replace the affected HPC stage 1-4 drum with a serviceable part.
- (3) Replacement of the HPC stage 1-4 drum on an engine, as required by paragraph (2) of this AD, does not constitute terminating action for the repetitive inspection requirements of this AD for that engines, except as specified in paragraph (4) of this AD.
- (4) Modification of an engine in accordance with the instructions of RR SB RB.211-72-J195 constitutes terminating action for the repetitive inspections as required by this AD for that engine.



Ref. Publications:

RR SB RB.211-72-J195 original issue dated 26 February 2016.

The use of later approved revisions of this document is acceptable for compliance with the requirements of this AD.

Remarks:

1. This Proposed AD will be closed for consultation on 28 March 2016.
2. Enquiries regarding this PAD should be referred to the EASA Safety Information Section, Certification Directorate. E-mail: ADs@easa.europa.eu.
3. 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 http://www.rolls-royce.com/contact/civil_team.jsp identifying the correspondence as being related to **Airworthiness Directives**.

