

EASA	NOTIFICATION OF A PROPOSAL TO ISSUE AN AIRWORTHINESS DIRECTIVE
	PAD No.: 12-120 Date: 17 September 2012 Note: This Proposed Airworthiness Directive (PAD) is issued by EASA, acting in accordance with Regulation (EC) No 216/2008 on behalf of the European Community, 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 closing date indicated.	
Design Approval Holder's Name :	Type/Model designation(s) :
ROLLS-ROYCE plc	RB211 Trent 900 engines
TCDS Number : EASA.E.012	
Foreign AD : Not applicable	
Supersedure: None	
ATA 72	Engine – Low Pressure Turbine Disc Seal Fins and Interstage Seals – Inspection / Replacement
Manufacturer(s):	Rolls-Royce plc
Applicability:	RB211 Trent 970-84, 970B-84, 972-84, 972B-84, 977-84, 977B-84 and 980-84 engines, all serial numbers. These engines are known to be installed on, but not limited to, Airbus A380 aeroplanes.
Reason:	Following a revenue service flight, a Trent 900 engine experienced increased low pressure vibration. The vibration did not exceed any engine limits, and the engine was not shut down during flight. Upon post-flight inspection of the engine, debris was found in the exhaust tail pipe and the engine was removed. The results of a subsequent strip inspection revealed that the stage 2 Low Pressure Turbine (LPT) disc had suffered material loss from a portion of the Interstage Seal (ISS) area of the disc, with impact damage to downstream LPT stages. All debris was contained within the engine casings. Preliminary findings show that the ISS fin had rubbed into the stage 2 vane honeycomb seal, which overheated and cracked, finally resulting in releasing a portion of the ISS area of the disc. This condition, if not detected and corrected, could lead to LPT stage 2 disc cracks, possibly resulting in an uncontained engine failure and subsequent damage to the aeroplane. For the reasons described above, this AD requires on-wing inspections of LPT disc seal fins and interstage seals, each time after it has been determined that

	the Engine Health Monitoring (EHM) vibratory levels have been exceeded in flight, and in-shop inspections of the LPT disc seal fins and interstage seals, to detect cracks or damage and, depending on findings, the accomplishment of applicable corrections action(s). This AD is considered an interim measure and further AD action may follow.
Effective Date:	[TBD: 14 days after final AD issue date]
Required Action(s) and Compliance Time(s):	Required as indicated, unless accomplished previously: (1) From the effective date of this AD, within 10 flight cycles following each Engine Health Monitoring (EHM) notification for N1 vibration levels exceeding the alert limits during flight (see Note 1), accomplish the following action: Perform trouble shooting in accordance with the Airbus A380 Trouble Shooting Manual (TSM), Task 77-00-00-810-803. Upon confirmation that N1 vibration levels are genuine and alert limits have been exceeded, inspect the LPT disc seal fins and interstage seals in accordance with the instructions of Rolls-Royce Technical Variance (TV) 125060, or in accordance with the instructions of the relevant Aircraft Maintenance Manual (AMM) Chapter (see Note 2). Note 1: Rolls-Royce Operational Service Desk (OSD) automatically receive, monitor and analyse EHM data and will send one of the notifications in Appendix 1 of this AD to the Operator through a local Rolls-Royce Representative. Note 2: The instructions contained in TV125060 are expected to be incorporated in an upcoming Revision of the Airbus A380 AMM. (2) From the effective date of this AD, each time the engine is in a shop visit for LP turbine overhaul, or if the engine is in such a shop visit on the effective date of this AD, inspect the LPT disc seal fins and interstage seals in accordance with the instructions of Rolls-Royce Alert Non-Modification Service Bulletin (NMSB) RB.211-72-AH054. If, during this inspection, any crack or material loss from the disc seal fin is found, before release to service of the engine, replace the affected parts with serviceable parts. (3) Inspections and corrective actions, accomplished before the effective date of this AD, in accordance with the instructions of Rolls-Royce TV125658 are acceptable for compliance with the initial requirements of paragraph (2) of this AD. (4) If, during any inspection as required by paragraph (1) of this AD, any crack or material loss from the disc seal fin is found, before next flight, remove the engine from the aeroplane and, before release to service of the engine, replace the affected parts with serviceable parts. (5) Corrective actions, as required by paragraphs (2) or (4) of this AD, as applicable, do not constitute terminating action for the repetitive inspections required by paragraphs (1) and (2) of this AD.
Ref. Publications:	Airbus A380 AMM and TSM. Rolls-Royce Alert NMSB RB.211-72-AH054 dated 14 September 2012. Rolls-Royce Technical Variance TV125060 issue 1, dated 27 July 2012. Rolls-Royce Technical Variance TV125658 issue 2, dated 14 August 2012. The use of later approved revisions of these documents is acceptable for compliance with the requirements of this AD.
Remarks :	1. This Proposed AD will be closed for consultation on 01 October 2012.

	2. Enquiries regarding this PAD should be referred to the Safety Information Section, Executive Directorate, EASA. 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 Aeromanager account at www.aeromanager.com. If you do not have a designated representative or Aeromanager account, please contact Corporate Communications at Rolls-Royce plc, P.O. Box 31, Derby, DE24 8BJ, The United Kingdom. Telephone: +44 (0) 1332 242424, or email from http://www.rolls-royce.com/contact/civil_team.jsp identifying the correspondence as being related to Airworthiness Directives.
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Appendix 1**Notifications of N1 Vibration Exceedance sent to the Operator:**

“Please be aware that 1LP flight MAX Vibration levels have exceeded the alert limits defined for the [60-98%] engine speed range on engine [serial number], aircraft [registration, serial number, engine position].

Please contact your local Rolls-Royce Representative, who in turn will contact the Rolls-Royce Operational Service Desk, for additional recommendations and reaction time”.

or

“Engine: [serial number, position] on aircraft [registration]

Symptoms: Change in LP Vibration

Diagnosis: High LP Vibration

Please be advised that we have observed an LP vibration increase. The Rolls-Royce recommended fault isolation process for High LP vibration states:

Please be aware that 1st order LP Vibration levels have exceeded the alert limits.

Please contact your local Rolls-Royce Representative, who in turn will contact the Rolls-Royce Operational Service Desk, for additional recommendations and reaction time”.