


EASA	AIRWORTHINESS DIRECTIVE CANCELLATION NOTICE	
	AD No.: 2010-0242-CN Date: 02 March 2011 Note: This Airworthiness Directive (AD) Cancellation Notice 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.	
Type Approval Holder's Name : ROLLS-ROYCE PLC		Type/Model designation(s) : RB211 Trent 900 series engines
TCDS Number :	EASA.E.012	
Foreign AD :	Not applicable	
Cancellation :	This notice cancels EASA AD 2010-0242R1 dated 21 December 2010, which revised EASA Emergency AD 2010-0242-E dated 22 November 2010; the original issue of this AD superseded EASA AD 2010-0236-E dated 10 November 2010.	
ATA 72	Engine – High Pressure / Intermediate Pressure (HP/IP) Structure – Inspections	
Manufacturer(s):	Rolls-Royce plc	
Applicability:	RB211 Trent 900 series engines, variants RB211 Trent 970-84, RB211 Trent 970B-84, RB211 Trent 972-84, RB211 Trent 972B-84, RB211 Trent 977-84, RB211 Trent 977B-84 and RB211 Trent 980-84, all serial numbers. These engines are known to be installed on, but not limited to, Airbus A380 series aeroplanes.	
Reason:	<p>On 4 November 2010, an uncontained engine failure occurred on a Rolls-Royce RB211 Trent 900 involving release of high energy debris and resulting in damage to the aeroplane. Analysis of the preliminary elements from the incident investigation showed that an oil fire in the High Pressure / Intermediate Pressure (HP/IP) structure cavity could have initiated a sequence of events leading to rupture of the drive arm of the IP Turbine (IPT) disc and subsequent overspeed and burst of that same disc.</p> <p>Pending conclusion of the investigation, EASA issued AD 2010-0242-E, which superseded AD 2010-0236-E, requiring repetitive inspections of the Low Pressure Turbine (LPT) case drain, HP/IP structure air buffer cavity and oil service tubes in order to detect any abnormal oil leakage, and if any discrepancy was found, prohibiting further engine operation.</p> <p>Progress of the on-going investigation showed that the most probable primary failure was an oil feed tube fracture, initiated by thin wall section, leading to an oil leak and fire. This thin wall section was confirmed to have originated during the manufacturing process. Manufacturing and inspection data, and stress analysis performed by Rolls-Royce, confirmed that oil feed tubes with a</p>	

	<p>defined minimum thin wall section feature a higher life and lower risk of fracture.</p> <p>EASA issued revised AD 2010-0242R1 to extend the inspection threshold and interval requirements for engines where the HP/IP structure is within the population assessed as being at lower risk.</p> <p>Since issuance of AD 2010-0242R1, the latest progress of the on-going investigation, further assessment of manufacturing data and additional stress analysis continue to support the above failure scenario. In addition, all HP/IP structures containing an oil feed tube with a wall section below a certain threshold, and therefore having a potential risk of fracture, have been removed from service. Finally inspections performed as required by AD 2010-0236-E, AD 2010-0242-E and AD 2010-0242R1 have not identified any engine with a risk to develop a failure scenario similar to the uncontained engine failure event.</p> <p>As an additional safety measure, EASA issued AD 2010-0262 to require modification of Trent 900 Engine Electronic Controllers (EEC) to introduce IPT Overspeed Protection System (IPTOS) software which allows detection of certain engine conditions that may potentially lead to an IP turbine overspeed, and, if these conditions are met, shut down the engine before the level of overspeed reaches the disc burst speed.</p> <p>For the reasons described above, the HP/IP structure inspections are not considered necessary anymore and AD 2010-0242R1 is cancelled.</p> <p>Additional notes:</p> <ul style="list-style-type: none"> - Rolls-Royce has issued Revision 5 of Rolls-Royce NMSB 72-AG590 to advise the cancellation of Trent 900 HP/IP structure inspection requirements. - The inspections previously required by this AD are intrusive and introduce some risk from possible maintenance errors. The root cause of the incident having been addressed through other adequate measures, it is considered prudent to cancel these inspections.
Effective Date:	02 March 2011
Compliance:	Not applicable.
Ref. Publications:	Rolls-Royce RB211 Trent 900 Alert NMSB 72-AG590 Revision 5 dated 28 February 2011.
Remarks :	<ol style="list-style-type: none"> 1. Enquiries regarding this AD Cancellation Notice should be referred to the Airworthiness Directives, Safety Management & Research Section, Certification Directorate, EASA; E-mail: ADs@easa.europa.eu. 2. For any question concerning the technical content of this AD Cancellation Notice, 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. PO Box 31, Derby, DE24 8BJ, United Kingdom. Phone: +44 (0) 1332 242424, or e-mail from http://www.rolls-royce.com/contact/civil_team.jsp identifying the correspondence as being related to Airworthiness Directives.