

EASA	AIRWORTHINESS DIRECTIVE
	AD No.: 2010-0262 Date: 13 December 2010 Note: This Airworthiness Directive (AD) 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.
This AD is issued in accordance with EC 1702/2003, Part 21A.3B. In accordance with EC 2042/2003 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 [EC 2042/2003 Annex I, Part M.A.303] or agreed with the Authority of the State of Registry [EC 216/2008, Article 14(4) exemption].	
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
Supersedure :	None
ATA 73	Engine Fuel & Control – Intermediate Pressure Turbine Overspeed Protection System Software – Introduction
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:	An uncontained engine failure has recently occurred on a Rolls-Royce RB211 Trent 900 involving release of high energy debris and resulting in damage to the aeroplane. Analysis of the available elements from the incident investigation shows that an oil fire in the High Pressure / Intermediate Pressure (HP/IP) structure cavity may 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. This condition, if not detected and corrected, could lead to additional uncontained engine failures, possibly resulting in damage to the aeroplane and injury to persons on the ground. Rolls-Royce has developed a modification of the Engine Electronic Controller (EEC) software, featuring an IPT Overspeed Protection System (IPTOS). The purpose of the IPTOS functionality is to detect engine conditions that may potentially lead to an IP turbine overspeed, and shut down the engine before the level of overspeed reaches the disc burst speed. For the reasons described above, this AD requires modification of the EEC to introduce the IPTOS functionality by installing Software version 10.6.

	The requirements of this AD address some of the findings from the subject incident investigation. It is issued independently from other requirements (*) and does not constitute terminating action for any of these requirements. (*) At the time of issuance of this AD, the requirements from AD 2010-0242-E are in force in response to the same incident investigation.
Effective Date:	27 December 2010
Required Action(s) and Compliance Time(s):	Required as indicated, unless accomplished previously: (1) Within 10 Flight Cycles (FC) after the effective date of this AD, incorporate introduction of software 10.6 to the EEC in accordance with the instructions of Rolls-Royce Alert Service Bulletin (SB) RB.211-73-AG639. (2) After modification of an engine installed on an aeroplane, as required by paragraph (1) of this AD, do not intermix with any EEC software standards prior to modification 73-F328 (standard 9.2.1) on that aeroplane. (3) From the effective date of this AD, do not install an engine on an aeroplane, unless the engine has been modified as required by paragraph (1) of this AD. (4) Incorporation of later approved versions of EEC software standards that will include IPTOS functionality is acceptable to comply with the requirement of paragraph (1) of this AD.
Ref. Publications:	Rolls-Royce Alert SB RB.211-73-AG639 dated 3 December 2010. The use of later approved revisions of this document 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. The required actions and the risk allowance have granted the issuance of a Final AD with Request for Comments, postponing the public consultation process after publication. 3. Enquiries regarding this AD should be referred to the Airworthiness Directives, Safety Management & Research Section, Certification Directorate, EASA. E-mail ADs@easa.europa.eu. 4. 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 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.