

EASA	AIRWORTHINESS DIRECTIVE
	AD No.: 2013-0190 Date: 20 August 2013 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 EU 748/2012, Part 21.A.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].	
Design Approval Holder's Name: ROLLS-ROYCE plc	Type/Model designation(s): RB211 Trent 700 engines
TCDS Number:	EASA.E.042
Foreign AD:	Not applicable
Supersedure:	None
ATA 73	Engine Fuel & Control – Engine Electronic Control – Software Update
Manufacturer(s):	Rolls-Royce plc (RR)
Applicability:	RB211 Trent 768-60, 772-60, 772B-60 and 772C-60 engines, all serial numbers. These engines are known to be installed on, but not limited to, Airbus A330 aeroplanes.
Reason:	An operator of an A330 aeroplane fitted with RR Trent 772B engines experienced an engine uncontained multiple turbine blade failure. Investigation results showed that High Pressure/Intermediate Pressure (HP/IP) oil vent tubes may be affected by carbon deposit and may also be damaged by their outer heat shields, which in this case led to combustion inside the tube. The consequent chain of events resulted in an engine internal fire which caused the failure of the IP Turbine (IPT) disc drive arm. This condition, if not corrected, could lead to uncontained multiple turbine blade failures or an HP/IP turbine disc burst, possibly resulting in damage to, and reduced control of, the aeroplane. Prompted by these findings, an Intermediate Pressure Turbine Overspeed System (IPTOS) protection function was introduced, and subsequently required by EASA AD 2009-0075 for Airbus A330 aeroplanes. Since that AD was issued, following further engineering evaluation, some limitations have been identified and modifications have been developed to improve the effectiveness of the IPTOS protection function within the Engine Electronic Control (EEC).

	For the reasons described above, this AD requires introduction of the enhanced IPTOS protection function by installation of a reprogrammed EEC, which shuts down the engine when shaft failure is detected.
Effective Date:	03 September 2013
Required Action(s) and Compliance Time(s):	Required as indicated, unless accomplished previously: (1) Not later than 31 December 2018, modify the engine by installing an EEC incorporating EEC software standard A14.1.3 in accordance with the instructions of Rolls-Royce Alert Service Bulletin (ASB) RB.211-73-AG829. (2) The modification as required by paragraph (1) of this AD does not affect the aeroplane modifications as required by EASA AD 2009-0075. After installation on an aeroplane of Trent 700 engines, modified as required by paragraph (1) of this AD, that aeroplane remains compliant with EASA AD 2009-0075. (3) Installation of an EEC incorporating an EEC software standard later than A14.1.3 is acceptable to comply with the requirement of this AD. (4) After modification of an engine as required by paragraph (1) of this AD, do not install any EEC unit on that engine, unless the software standard is A14.1.3 or higher.
Ref. Publications:	Rolls-Royce ASB RB.211-73-AG829 dated 18 April 2012. 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. This AD was posted on 02 July 2013 as PAD 13-090 for consultation until 30 July 2013. The Comment Response Document can be found at http://ad.easa.europa.eu/. 3. Enquiries regarding this AD should be referred to the Safety Information Section, Executive 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, 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.