


<b>EASA</b>	<b>AIRWORTHINESS DIRECTIVE</b>	
	<b>AD No.: 2012-0215R1</b>	
	<b>Date: 04 January 2013</b>	
<p>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.</p>		
<p>This AD is issued in accordance with EC 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].</p>		
<b>Design Approval Holder's Name:</b>	ROLLS-ROYCE plc	<b>Type/Model designation(s):</b> RB211-524 and -535 series engines
TCDS Numbers:	United Kingdom No. 1043, 1044, 1046, 1048 and 1049	
Foreign AD:	Not applicable	
Revision:	This AD revises EASA AD 2012-0215 dated 18 October 2012 (including the Correction dated 24 October 2012).	
<b>ATA 72</b>	<b>Engine – Front Combustion Liner Metering Panel – Inspection / Replacement</b>	
Manufacturer(s):	Rolls-Royce plc	
Applicability:	<p>RB211-524B-02, 524B2-19, 524B3-02, 524B4-02, 524C2-19, 524D4-19, 524D4-B-19 and 524D4-39 engines, all serial numbers, if Service Bulletin (SB) RB.211-72-7221 is embodied. These engines are known to be installed on, but not limited to, Boeing 747 series and Lockheed L1011 series aeroplanes.</p> <p>RB211-524G2-19, 524G3-19, 524H2-19 and 524H-36 engines, all serial numbers. These engines are known to be installed on, but not limited to, Boeing 747 and 767 series aeroplanes.</p> <p>RB211-535C-37, 535E4-37, 535E4-B-37 and 535E4-B-75 engines, all serial numbers, except RB211-535E4-37 and 535E4-B-37 engines that have been modified to incorporate RR Mod. 72-C230 (SB RB.211-72-C230). These engines are known to be installed on, but not limited to, Boeing 757 series and Tupolev TU 204 series aeroplanes.</p>	
Reason:	<p>During investigation of a starting problem with an RB211-535E4-B-37 engine, the Fuel Spray Nozzles (FSNs) appeared misaligned and the engine was removed. Further investigation found that the FSNs were correctly positioned but that the Front Combustion Liner (FCL) metering panel (reference Engine Illustrated Parts Catalogue EIPC section 72-41-13, Figure/Item 02-324) was cracked and distorted. Laboratory investigation revealed that the FCL metering panel was made of N75 material rather than the specified C263 material.</p>	

	<p>Rolls-Royce (RR) issued SB RB.211-72-7221 in 1984, to address the issue of cracking of FCL metering panel manufactured in N75 material. SB RB.211-72-7221 replaces the FCL metering panel manufactured in N75 material with one manufactured in C263 material. The FCL metering panel in so-called Phase 2 combustors of the RB211-524G/H and RB211-535C/E4/E4-B series engines was specified in C263 material from engine type at entry into service.</p> <p>Based on these findings, it was determined that installation of N75 material FCL metering panels on an engine, where C263 was the intended material, may result in metering panel cracking and distortion.</p> <p>This condition, if not detected and corrected, could result in hot gas break out from the engine casing and potentially cause an uncontrolled fire.</p> <p>For the reasons described above, this AD requires inspection of FCL metering panels to determine their material and, depending on findings, replacement of panels with panels of correct material specification. Furthermore, this AD prohibits installation of FCL metering panels on an engine unless the affected FCL metering panel has been inspected and found to be made of the correct material.</p> <p>This AD has been revised to make reference to approved instructions that allow, following an on-wing inspection, limited operation of an engine with an affected FCL metering panel installed, prior to FCL metering panel in-shop replacement, in accordance with advanced criteria provided in Revision 3 of RR NMSB RB.211-72-AG046 (for RB211-535 series engines) or RR NMSB RB.211-72-AG183 (for RB211-524 series engines), respectively.</p>
Effective Date:	<p>Revision 1: 04 January 2013</p> <p>Original issue: 01 November 2012</p>
Required Action(s) and Compliance Time(s):	<p>Required as indicated, unless accomplished previously:</p> <ol style="list-style-type: none"> <li>(1) Except for engines on which RR Non-Modification Service Bulletin (NMSB) RB.211-72-AF572 (at any revision) was already carried out during a previous shop visit, at the next shop visit where access to the FCL metering panel is possible, or within 10 months after the effective date of this AD, whichever occurs first, inspect the FCL metering panel in accordance with the instructions of paragraph 3 Accomplishment Instructions of RR NMSB RB.211-72-AG046 (for RB211-535 series engines) or RR NMSB RB.211-72-AG183 (for RB211-524 series engines), as applicable to engine type and model.</li> <li>(2) FCL Metering Panel Replacement: <ol style="list-style-type: none"> <li>(2.1) If, during an in-shop inspection as required by paragraph (1) of this AD, it is found that the FCL metering panel is made of N75 material, before release to service of the engine, replace the FCL metering panel with one that has been determined to have been made of C263 material.</li> <li>(2.2) If, during an on-wing inspection as required by paragraph (1) of this AD, it is found that the FCL metering panel is made of N75 material, replace the FCL metering panel with one that has been determined to have been made of C263 material in accordance with the criteria, within the fly-on time period specified in, and in accordance with the instructions of paragraph 3 of RR NMSB RB.211-72-AG046 Revision 3 (for RB211-535 series engines) or RR NMSB RB.211-72-AG183 Revision 3 (for RB211-524 series engines).</li> </ol> </li> <li>(3) From the effective date of this AD, do not install on any engine an FCL metering panel unless the FCL metering panel has been determined to have been made of C263 material.</li> </ol>

Ref. Publications:	<p>Rolls-Royce NMSB RB.211-72-AG046 original issue dated 17 December 2009, or Revision 1 dated 17 January 2011, or Revision 2 dated 17 June 2012, or Revision 3 dated 6 December 2012.</p> <p>Rolls-Royce NMSB RB.211-72-AG183 original issue dated 17 December 2009, or Revision 1 dated 16 November 2010, or Revision 2 dated 8 June 2012, or Revision 3 dated 6 December 2012.</p> <p>Rolls-Royce NMSB RB.211-72-AF572 Revision 2 dated 2 April 2009.</p> <p>The use of later approved revisions of these documents is acceptable for compliance with the requirements of this AD.</p>
Remarks:	<ol style="list-style-type: none"> <li>1. If requested and appropriately substantiated, EASA can approve Alternative Methods of Compliance for this AD.</li> <li>2. The original issue of this AD was posted on 10 August 2012 as PAD 12-107 for consultation until 07 September 2012. The Comment Response Document can be found at <a href="http://ad.easa.europa.eu">http://ad.easa.europa.eu</a>.</li> <li>3. Enquiries regarding this AD should be referred to the Safety Information Section, Executive Directorate, EASA. E-mail: <a href="mailto:ADs@easa.europa.eu">ADs@easa.europa.eu</a>.</li> <li>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 <a href="http://www.aeromanager.com">www.aeromanager.com</a>, or contact Rolls-Royce plc. Corporate Communications, P.O. Box 31, Derby, DE24 8BJ, The United Kingdom, telephone: +44 (0) 1332 242424, or send an e-mail through <a href="http://www.rolls-royce.com/contact/civil_team.jsp">http://www.rolls-royce.com/contact/civil_team.jsp</a> identifying the correspondence as being related to <b>Airworthiness Directives</b>.</li> </ol>