


<b>EASA</b>	<b>AIRWORTHINESS DIRECTIVE</b>
	<p><b>AD No.: 2011-0080R1</b></p> <p><b>Date: 13 November 2012</b></p> <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 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].</p>	
<p><b>Type Approval Holder's Name :</b></p> <p>ROLLS-ROYCE plc</p>	<p><b>Type/Model designation(s) :</b></p> <p>RB211 Trent 800 engines</p>
<p>TCDS Number : UK CAA 1051</p>	
<p>Foreign AD : Not applicable</p>	
<p>Revision: This AD revises EASA AD 2011-0080 dated 06 May 2011.</p>	
<b>ATA 72</b>	<b>Engine – Front Combustion Liner Head Section – Inspection / Replacement</b>
Manufacturer(s):	Rolls-Royce plc
Applicability:	<p>RB211 Trent 875-17, 877-17, 884-17, 884B-17, 892-17, 892B-17 and 895-17 engines, all serial numbers, except those incorporating Modification (Mod.) 72-AG705.</p> <p>These engines are known to be installed on, but not limited to, Boeing 777 series aeroplanes.</p>
Reason:	<p>Routine inspections have revealed cracking on the head sections of two Trent 800 front combustion liners.</p> <p>This condition, if not detected and corrected, could lead to hot gas breakout with subsequent downstream component release potentially leading to uncontained high energy debris, possibly resulting in damage to the aeroplane or injury to persons on the ground.</p> <p>To address this unsafe condition, EASA issued AD 2009-0187R1 to require a one-time borescope inspection of the head section of the front combustion liner and report findings to Rolls Royce. After that AD was issued, Rolls Royce defined a repetitive inspection programme which allows crack propagation to be safely monitored during continued operation and for engines to be withdrawn from service before loss of combustion liner integrity can occur.</p> <p>Consequently, EASA issued AD 2011-0080, taking over the requirements of EASA AD 2009-0187R1 for the RB211 Trent 800 series engines only, to require repetitive on-wing and in-shop inspections of the Front Combustion Liner Head Section for discrepancies and, depending on findings, corrective actions.</p>

	<p>Since that AD was issued, Rolls-Royce developed Mod. 72-AG705, which has been accepted as terminating action for the inspections of NMSB RB.211-72-AF456.</p> <p>For the reason describe above, this AD is revised to exclude modified engines and to specify that in- service modification of an engine constitutes terminating action for the repetitive inspections required by this AD.</p>												
Effective Date:	<p>Revision 1: 27 November 2012</p> <p>Original issue: 20 May 2011</p>												
Required Action(s) and Compliance Time(s):	<p>Required as indicated, unless accomplished previously:</p> <p>(1) <u>ON-WING Inspections:</u></p> <p>(1.1) Within 1 000 flight cycles (FC) after 20 May 2011 [the effective date of the original issue of this AD] and thereafter at intervals not to exceed 2 000 FC, inspect the Front Combustion Liner Head Section for cracking in accordance with the On-Wing Accomplishment Instructions of Rolls-Royce Non-Modification Service Bulletin (NMSB) RB211-72-AG456.</p> <p>(1.2) If, during any inspection as required by paragraph (1.1) of this AD, cracking is found, take the corrective actions as detailed in Table 1 of this AD, as applicable.</p> <p>Table 1 – Inspection Findings and Follow-on Actions</p> <table border="1"> <thead> <tr> <th>Inspection Findings</th><th>Action(s) and Compliance Time(s)</th></tr> </thead> <tbody> <tr> <td>Cumulative crack length up to 150 mm (up to 2 heatshields)</td><td>Reduce the inspection intervals to 250 FC</td></tr> <tr> <td>Cumulative crack length 150 mm to 300mm (up to 4 heatshields)</td><td>Reduce the inspection intervals to 100 FC</td></tr> <tr> <td>Cumulative crack length 300 mm to 450mm (up to 6 heatshields)</td><td>Replace the engine within 50 FC</td></tr> <tr> <td>Cumulative crack length 450 mm to 900mm (up to 12 heatshields)</td><td>Replace the engine within 5 FC</td></tr> <tr> <td>Cumulative crack length greater than 900 mm (more than 12 heatshields)</td><td>Replace the engine before next flight</td></tr> </tbody> </table> <p>(2) <u>IN-SHOP Inspections:</u></p> <p>(2.1) At every shop visit after 20 May 2011 [the effective date of the original issue of this AD], inspect the Front Combustion Liner Head Section for cracking in accordance with the In-shop Accomplishment Instructions of Rolls-Royce NMSB RB211-72-AG456.</p> <p>(2.2) If any cracking is identified during a shop visit as required by paragraph (2.1) of this AD, before release to service of the engine, replace the Front Combustion Liner Head Section with a new or serviceable part.</p> <p>(2.3) Accomplishment of a shop visit inspection as required by paragraph (2.1) of this AD may substitute the accomplishment of an on-wing inspection as required by paragraph (1) of this AD.</p> <p>(3) Replacement of the Front Combustion Liner Head Section with a new or serviceable part, as required by paragraph (1.2) or (2.2) of this AD, as</p>	Inspection Findings	Action(s) and Compliance Time(s)	Cumulative crack length up to 150 mm (up to 2 heatshields)	Reduce the inspection intervals to 250 FC	Cumulative crack length 150 mm to 300mm (up to 4 heatshields)	Reduce the inspection intervals to 100 FC	Cumulative crack length 300 mm to 450mm (up to 6 heatshields)	Replace the engine within 50 FC	Cumulative crack length 450 mm to 900mm (up to 12 heatshields)	Replace the engine within 5 FC	Cumulative crack length greater than 900 mm (more than 12 heatshields)	Replace the engine before next flight
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	<p>applicable, does not constitute terminating action for the repetitive inspections required by paragraphs (1.1) and (2.1) of this AD.</p> <p>(4) <u>Terminating Action:</u></p> <p>Modification of an engine, in accordance with the instructions of Rolls-Royce SB 72-AG705, constitutes terminating action for the repetitive inspections required by this AD for that engine.</p>
Ref. Publications:	<p>Rolls-Royce NMSB RB211-72-AG456 dated 09 September 2010.</p> <p>Rolls-Royce SB 72-AG705 dated 13 July 2012.</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 05 April 2011 as PAD 11-038 for consultation until 03 May 2011. No comments were received during the consultation period.</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>.</li> </ol> <p>If you do not have a designated representative or Aeromanager account, please contact <b>Corporate Communications</b> at <b>Rolls-Royce plc</b>.</p> <p>PO Box 31, Derby, DE24 8BJ, 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>.</p>