


EASA	AIRWORTHINESS DIRECTIVE	
	<p>AD No.: 2010-0188R1</p> <p>Date: 23 February 2015</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 EU 1321/2014 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 [EU 1321/2014 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>Design Approval Holder's Name : ROLLS-ROYCE plc</p>	<p>Type/Model designation(s) : RB211 Trent 800 engines</p>	
<p>TCDS Number : EASA.E.047</p>		
<p>Foreign AD : Not applicable</p>		
<p>Revision: This AD revises EASA AD 2010-0188 dated 20 September 2010, including the Correction dated 22 February 2011.</p>		
ATA 73	Engine – Fan Case Low Pressure Fuel Tubes and Clips – Inspection / Replacement	
<p>Manufacturer(s): Rolls-Royce plc (RR)</p>		
<p>Applicability:</p>	<p>RB211 Trent 895-17, 892-17, 892B-17, 884-17, 884B-17, 877-17 and 875-17 engines, all serial numbers, except those that have embodied RR modification (Mod.) 73-H814 in production, or have been modified in service through RR Service Bulletin (SB) RB211-73-H814.</p> <p>These engines are known to be installed on, but not limited to, Boeing 777 series aeroplanes.</p>	
<p>Reason:</p>	<p>Fuel leaks from the engine have occurred in-service due to damage to sections of the fan case Low Pressure (LP) fuel tubes which run between the Low Pressure and the High Pressure (HP) fuel pumps. This damage has been caused by fretting between the securing clips and the tube outer surface, which has caused localised thinning of the tube wall thickness. The thinning of the tube wall causes the tube to fracture and fuel loss to occur. In one case, fuel loss in excess of 10 000 pounds (lbs) occurred.</p> <p>Fuel leaks, if not detected early enough or if not correctly managed, could lead to potential unsafe conditions such as critical fuel unbalance or in-flight fuel starvation. Fuel leak detection and the associated aeroplanes procedures can be complex, leading to some flight crews failing to detect and/or address such situations. EASA has initiated reviews of fuel leak management procedures.</p> <p>To address this potential unsafe condition, RR published Non Modification Service Bulletin (NMSB) RB211-73-D685 as a precautionary measure to mitigate the risk of in-flight fuel starvation identified as a result of the existence of a known cause of fuel leaks.</p>	

	<p>Consequently, EASA issued AD 2010-0188 (later corrected) to require repetitive inspections of fan case LP fuel tubes and clips and, depending on findings, replacement of parts.</p> <p>Since that AD was issued, RR published SB RB211-73-H814, providing a modification that cancels the need for the inspections as specified in RR NMSB RB211-73-D685.</p> <p>For the reason described above, this AD is revised to exclude post-Mod. 73-H814 engines and post-SB RB211-73-H814 engines from the Applicability and to introduce SB RB211-73-H814 as optional terminating action for the repetitive inspections required by this AD.</p> <p>This revised AD also includes some editorial changes, to introduce the latest AD writing standards and improve readability, without affecting the technical requirements or compliance times.</p>								
Effective Date:	<p>Revision 1: 23 February 2015</p> <p>Original issue: 04 October 2010</p>								
Required Action(s) and Compliance Time(s):	<p>Required as indicated, unless accomplished previously:</p> <p>Note 1: Where, in this AD, reference is made to a RR Mod., SB or NMSB with an 'A' (Alert) in the number, it should be recognised that an earlier or later revision may not have that 'A'. This kind of change does not effectively alter the publication references for the purpose of this AD.</p> <p>(1) Initially, within the compliance time specified in Table 1 of this AD, and, thereafter, at intervals not to exceed 3 000 engine hours (EH), inspect the fan case LP fuel tubes (Part Numbers (P/N) FK22617, FK19213 and FK23986) and the relevant associated clips, in accordance with the instructions of RR NMSB RB211-73-D685 Revision 3.</p> <p>If, during any inspection (on wing or in-shop, as applicable) required by this AD, any discrepancy is detected, before next flight, or before release to service of the engines, as applicable, replace each affected part with a serviceable part in accordance with the instructions of RR NMSB RB211-73-D685 Revision 3.</p> <p style="text-align: center;">Table 1 – Initial Inspection</p> <table border="1" data-bbox="550 1330 1406 1615"> <thead> <tr> <th colspan="2" style="text-align: center;">Compliance Time (whichever occurs later, A, B or C)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">A</td> <td>Before exceeding 3 000 EH since new</td> </tr> <tr> <td style="text-align: center;">B</td> <td>Within 3 000 EH since the last inspection accomplished before 04 October 2010 [the effective date of the original issue of this AD] in accordance with RR NMSB RB211-73-D685 Revision 3</td> </tr> <tr> <td style="text-align: center;">C</td> <td>Within 2 000 EH after 04 October 2010 [the effective date of the original issue of this AD]</td> </tr> </tbody> </table> <p>(2) DELETED – requirements merged into paragraph (1).</p> <p>(3) Replacement of parts on an engine as required by this AD does not constitute terminating action for the repetitive inspections required by this AD for that engine.</p> <p>(4) Modification of an engine in accordance with the instructions of RR SB RB211-73-H814 constitutes terminating action for the repetitive inspections required by this AD for that engine.</p>	Compliance Time (whichever occurs later, A , B or C)		A	Before exceeding 3 000 EH since new	B	Within 3 000 EH since the last inspection accomplished before 04 October 2010 [the effective date of the original issue of this AD] in accordance with RR NMSB RB211-73-D685 Revision 3	C	Within 2 000 EH after 04 October 2010 [the effective date of the original issue of this AD]
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Ref. Publications:	<p>Rolls-Royce NMSB RB211-73-D685 Revision 3 dated 18 August 2009, or Revision 4 dated 20 January 2010, or Revision 5 dated 18 August 2010, or Revision 6 dated 21 February 2011.</p>								

	<p>Rolls-Royce SB RB211-73-H814 dated 19 March 2014.</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"> 1. If requested and appropriately substantiated, EASA can approve Alternative Methods of Compliance for this AD. 2. The original issue of this AD was issued as PAD 10-013 on 21 January 2010 for consultation until 18 February 2010. 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, Certification Directorate, EASA. E-mail ADs@easa.europa.eu. 4. For any questions 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. <p>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, United Kingdom Telephone: +44 (0) 1332 242424, or</p> <p>e-mail from http://www.rolls-royce.com/contact/civil_team.jsp identifying the correspondence as being related to Airworthiness Directives.</p>