


<b>EASA</b>	<b>AIRWORTHINESS DIRECTIVE</b>
	<p><b>AD No.: 2013-0155</b>  <b>[Correction: 31 July 2013]</b></p> <p><b>Date: 18 July 2013</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>	
<b>Design Approval Holder's Name:</b> ROLLS-ROYCE plc	<b>Type/Model designation(s):</b> RB211-535 and Trent 700 engines
TCDS Numbers: United Kingdom No. 1044 and EASA.E.042	
Foreign AD: Not applicable	
Supersedure: None	
<b>ATA 72</b>	<b>Engine – High Pressure / Intermediate Pressure Turbine Discs – Identification / Replacement</b>
<b>Manufacturer(s):</b>	Rolls-Royce plc
<b>Applicability:</b>	<p>RB211-535E4-37, E4-B-37 and E4-C-37 engines, all serial numbers. These engines are known to be installed on, but not limited to, Boeing 757 series aeroplanes.</p> <p>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 series aeroplanes.</p>
<b>Reason:</b>	<p>During a recent inspection of a high pressure (HP) turbine disc forged by a specific supplier, the disc was found to be contaminated with a steel inclusion, due to an inadequate cleaning procedure in the operation of the melt furnace, following a steel melt. Analysis of melt and inspection data concluded that all discs manufactured from the batch of material in which this steel inclusion was found, had a significant risk of containing steel inclusions. Rolls-Royce has carried out an analysis of the effect of the steel inclusions on the Declared Safe Cyclic Lives (DSCL) of the affected HP and intermediate pressure (IP) turbine discs. This analysis concluded that the currently published DSCL cannot be supported for several discs containing the subject inclusions.</p> <p>This condition, if not corrected, could lead to an uncontained HP or IP turbine disc failure, possibly resulting in damage to, and reduced control of, the aeroplane.</p> <p>For the reasons described above, this AD requires removal from service of certain HP and IP turbine discs before their accumulated cyclic lives have reached the revised limits.</p>

	This AD was republished to remove an erroneous reference to Table 1 and to add reference to Appendix 1.
Effective Date:	01 August 2013
Required Action(s) and Compliance Time(s):	<p>Required as indicated, unless accomplished previously:</p> <ol style="list-style-type: none"> <li>(1) Within 30 days after the effective date of this AD, determine whether a HP or IP turbine disc, as identified by Part Number (P/N) and serial number (s/n) in Appendix 1 of this AD, is installed on the engine and, if so, determine the accumulated flight cycles (FC) since new for each affected HP or IP turbine disc as applicable.</li> <li>(2) If, as a result of the determination as required by paragraph (1) of this AD, the accumulated cyclic life since new of an affected HP or IP turbine disc is equal to or exceeds the applicable reduced cyclic life limit as specified in Appendix 1 of this AD, before next flight, replace the affected HP or IP turbine disc with a serviceable part in accordance with the instructions of Rolls-Royce Non-Modification Service Bulletin (NMSB) RB.211-72-AH215 or NMSB RB.211-72-AH152 Revision 1, as applicable.</li> <li>(3) If, as a result of the determination as required by paragraph (1) of this AD, the accumulated cyclic life since new of an affected HP or IP turbine disc is less than the applicable reduced cyclic life limit as specified in Appendix 1 of this AD, before exceeding the applicable reduced cyclic life limit as specified in Appendix 1 of this AD, replace the affected HP or IP turbine disc with a serviceable disc in accordance with the instructions of Rolls-Royce NMSB RB.211-72-AH215 or NMSB RB.211-72-AH152 Revision 1, as applicable.</li> <li>(4) From the effective date of this AD, do not install a HP or IP turbine disc having a P/N and s/n as listed in Appendix 1 of this AD, unless it has been determined that the total accumulated cyclic life since new of the component is less than the applicable reduced cyclic life limit as specified in Appendix 1 of this AD.</li> </ol>
Ref. Publications:	<p>Rolls-Royce NMSB RB.211-72-AH215 original issue, dated 6 December 2012.</p> <p>Rolls-Royce NMSB RB.211-72-AH152 original issue, dated 28 February 2013, or Revision 1 dated 3 July 2013.</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. This AD was posted on 23 March 2013 as PAD 13-050 for consultation until 19 April 2013. 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, 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>

## Appendix 1: Reduced cyclic lives for HP / IP Turbine Discs

Engine	P/N	s/n	Reduced Cyclic Life Limit
RB211-535	UL39767	LDRCZ19900	11 400 FC
	UL39767	LDRCZ19903	
	UL39767	LDRCZ19904	
Trent 700	FK26893	LDRCZ19901	8 687 FC (see Note)
	FK26893	LDRCZ20081	
	FK26893	LDRCZ20082	
	FK26893	LDRCZ20084	
	FK26893	LDRCZ20088	
	FK26893	LDRCZ20089	
	FK26893	LDRCZ20090	
	FK26893	LDRCZ20093	
	FK26893	LDRCZ20094	
	FK26893	LDRCZ20097	
	FK26893	LDRCZ20099	
	FK26893	LDRCZ20100	
	FK20795 or FW53118	LDREB12176	9 270 FC (see Note)
	FK20795 or FW53118	LDREB12177	
	FK20795 or FW53118	LDREB12178	
	FK20795 or FW53118	LDREB12179	
	FK20795 or FW53118	LDREB12180	

Note: If maximum approved cyclic life of an affected HP or IP turbine disc, as specified in the latest issue of the applicable Time Limits Manual (TLM), is lower than the applicable cyclic life limit specified in Appendix 1 of this AD, the disc must be removed before exceeding the applicable TLM limit.