

EASA	AIRWORTHINESS DIRECTIVE	
	<p>AD No.: 2015-0187</p> <p>Date: 09 September 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): RB211-22 and RB211-524 engines</p>
TCDS Numbers:	United Kingdom No. 1039, 1043, 1046 and 1048	
Foreign AD:	Not applicable	
Supersedure:	None	
ATA 72 Engine – Low Pressure Turbine Roller Bearing – Replacement		
Manufacturer(s):	Rolls-Royce plc (RR)	
Applicability:	<p>RB211-22B-02, RB211-524B-02, RB211-524B-B-02, RB211-524B2-19, RB211-524B2-B-19, RB211-524B3-02, RB211-524B4-02, RB211-524B4-D-02, RB211-524C2-19, RB211-524C2-B-19, RB, RB211-524D4-19, RB211-524D4-B-19, RB211-524D4X-19, RB211-524D4X-B-19, RB211-524D4-39, RB211-524D4-B-39, RB211-524G2-19, RB211-524G3-19, RB211-524-G2-T-19, RB211-524G3-T-19, RB211-524H-36, RB211-524H2-19, RB211-524H-T-36 and RB211-524H2-T-19 engines, all serial numbers.</p> <p>These engines are known to be installed on, but not limited to, Lockheed Martin Corporation L-1011 (TriStar), Boeing 747 and Boeing 767 aeroplanes.</p>	
Reason:	<p>An RB211-524G2-T engine experienced an in-service event that resulted in breach of a turbine casing and some release of core engine debris through a hole in the engine nacelle. The investigation of the event determined the primary cause to have been fracture and release of a Low Pressure (LP) turbine stage 2 blade. The blade release caused secondary damage to the LP turbine, producing significant out-of-balance forces. The event engine was fitted with an LP turbine support bearing where the roller retention cage is constructed from two halves that are riveted together. The LP turbine imbalance resulted in an overload of the LP turbine support bearing and caused separation of the riveted, two-piece roller retention cage. Radial location of the LP turbine shaft was lost, allowing further progression of the event that resulted in a breach of the IP turbine casing.</p> <p>This condition, if not corrected, could lead to breach of the turbine casing and release of high energy debris, possibly resulting in damage to the aeroplane and/or injury to the occupants.</p>	

	<p>To address this potentially unsafe condition, RR issued Alert Non-Modification Service Bulletin (NMSB) RB.211-72-AG729 and NMSB RB.211-72-AG800 to introduce a modified LP turbine support roller bearing. This modified LP turbine support roller bearing can withstand greater abnormal loads that could be generated when a turbine blade release occur, therefore preventing the failure progression as occurred during the event.</p> <p>For the reasons described above, this AD requires modification of the affected engines by replacing the LP turbine support roller bearing with a modified part.</p>
Effective Date:	23 September 2015
Required Action(s) and Compliance Time(s):	<p>Required as indicated, unless accomplished previously:</p> <p>Note: Where, in this AD, reference is made to an 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> <ol style="list-style-type: none"> (1) Within 24 months after the effective date of this AD, replace each LP turbine support two-piece riveted cage roller bearing, Part Number (P/N) LK30313 or P/N UL29651, as applicable, with a P/N FB500000 LP turbine support roller bearing in accordance with the instructions of RR NMSB RB.211-72-AG729 or NMSB RB.211-72-AG800, as applicable. (2) An engine that embodies RR MOD.72-B540 in production, or has been modified in service in accordance with the instructions of RR SB RB.211-72-B540 (introducing P/N FB500000 LP turbine support roller bearing), is compliant with the modification requirements of paragraph (1) of this AD, provided it is determined that the engine remains in that configuration. (3) Do not to install an LP turbine support two-piece riveted cage roller bearing P/N LK30313 or P/N UL29651 on an engine, as required by paragraph (3.1) or (3.2) of this AD, as applicable. <ol style="list-style-type: none"> (3.1) For an engine that, on the effective date of this AD, does not have a P/N FB500000 LP turbine support roller bearing installed: After modification of that engine as required by paragraph (1) of this AD. (3.2) For an engine that, on the effective date of this AD, has a P/N FB500000 LP turbine support roller bearing installed: From the effective date of this AD. (4) From the effective date of this AD, do not release an engine to service after a shop visit, unless that engine has a P/N FB500000 LP turbine support roller bearing installed.
Ref. Publications:	<p>Rolls-Royce NMSB RB.211-72-AG729 original issue dated 1 August 2011.</p> <p>Rolls-Royce NMSB RB.211-72-AG800 original issue dated 5 March 2012.</p> <p>Rolls-Royce SB RB.211-72-B540 original issue dated 28 July 1995.</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. This AD was posted on 06 August 2015 as PAD 15-103 for consultation until 03 September 2015. 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 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, United Kingdom, telephone: +44 (0) 1332 242424, or

send an e-mail through http://www.rolls-royce.com/contact/civil_team.jsp identifying the correspondence as being related to **airworthiness directives**.

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