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| <b>EASA</b>                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>NOTIFICATION OF A PROPOSAL TO ISSUE AN<br/>AIRWORTHINESS DIRECTIVE</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                                                                                                                                                                                                                                                                                                                | <p><b>PAD No.: 13-170</b></p> <p><b>Date: 19 November 2013</b></p> <p>Note: This Proposed Airworthiness Directive (PAD) 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>In accordance with the EASA Continuing Airworthiness Procedures, the Executive Director is proposing the issuance of an EASA Airworthiness Directive (AD), applicable to the aeronautical product(s) identified below.<br/>All interested persons may send their comments, referencing the PAD Number above, to the e-mail address specified in the 'Remarks' section, prior to the consultation closing date indicated.</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Design Approval Holder's Name:</b><br>ROLLS-ROYCE plc                                                                                                                                                                                                                                                                                                                                                                        | <b>Type/Model designation(s):</b><br>RB211 Trent 700 engines                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| TCDS Number: EASA.E.042                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Foreign AD: Not applicable                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Supersedure: This AD supersedes EASA AD 2013-0060 dated 11 March 2013.                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>ATA 72</b>                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>Engine – Low Pressure Compressor Blades – Inspection / Replacement</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Manufacturer(s): Rolls-Royce plc (RR)                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Applicability:                                                                                                                                                                                                                                                                                                                                                                                                                  | <p>RB211 Trent 768-60, 772-60, 772B-60 and 772C-60 engines, all serial numbers.</p> <p>These engines are known to be installed on, but not limited to, Airbus A330 aeroplanes.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Reason:                                                                                                                                                                                                                                                                                                                                                                                                                         | <p>Low Pressure (LP) compressor partial aerofoil blade release events occurred in service on RR Trent 700 engines. While primary containment of the released sections was achieved in each case, some of the releases did exhibit secondary effects that are considered to present a potential hazard. Previously, expeditious actions by RR mitigated the risks presented by these effects, by removal from service of batches of LP compressor blades. However, some causal factors still exist that are not fully understood.</p> <p>This condition, if not detected and corrected, could lead to LP compressor blade release with possible consequent loss of the engine nose cowl, under cowl fires and forward projection of secondary debris, possibly resulting in damage to the aeroplane and/or injury to persons on the ground.</p> <p>To address this potential unsafe condition, EASA issued AD 2012-0247 to require a one-time inspection of the higher life LP compressor blades.</p> <p>After identification of a population of these LP compressor blades that were incorrectly inspected, EASA issued AD 2013-0060, superseding AD 2012-0247, to require re-inspection of the affected blades.</p> <p>Since EASA AD 2013-0060 was issued, to mitigate the risk of further partial fan</p> |

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|                                            | <p>blade release events, RR issued Non-Modification Service Bulletin (NMSB) RB.211-72-AH465, providing instructions for a programme of repetitive ultrasonic inspections of the affected LP compressor blades to detect sub-surface anomalies in the aerofoil.</p> <p>For the reasons described above, this AD supersedes EASA AD 2013-0060 and requires repetitive inspections of all affected fan blades and, depending on findings, replacement of LP compressor blades.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Effective Date:                            | [TBD: 14 days after final AD issue date]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Required Action(s) and Compliance Time(s): | <p>Required as indicated, unless accomplished previously:</p> <ol style="list-style-type: none"> <li>(1) For LP Compressor blades Part Number (P/N) FK23411, P/N FK25441, P/N FK25968, P/N FW11901, P/N FW15393, P/N FW23643, P/N FW23741 and P/N FW23744, before exceeding 3 600 FC since new and, thereafter, at intervals not to exceed 2 400 FC, accomplish an ultrasonic inspection of each LP compressor blade in accordance with the instructions of Section 3 of RR NMSB RB.211-72-AH465.</li> <li>(2) Inspections accomplished in accordance with the instructions of Rolls-Royce NMSB RB.211-72-G702, or NMSB RB.211-72-G872, or NMSB RB.211-72-H311, or Engine Manual Task 72-31-11-200-806, are acceptable to comply with the initial inspection requirements of paragraph (1) of this AD.</li> <li>(3) For any blade that, on the effective date of this AD, has already exceeded 2 200 FC since last inspection, the next inspection must be accomplished before exceeding 3 000 FC since the last inspection. Thereafter, repetitive inspections must be accomplished as required by paragraph (1) of this AD.</li> <li>(4) If, during any inspection as required by paragraph (1) or (3) of this AD, a LP Compressor blade fails the ultrasonic inspection, before next flight, or before release to service of the engine, as applicable, replace the affected blade with a serviceable one.</li> <li>(5) From the effective date of this AD, installation on an engine of any replacement LP compressor blades P/N FK23411, P/N FK25441, P/N FK25968, P/N FW11901, P/N FW15393, P/N FW23643, P/N FW23741 or P/N FW23744 that have accumulated or exceeded 3 600 FC since new, or 2 400 FC since inspection in accordance with RR NMSB RB.211-72-AH465, or since an inspection as specified in paragraph (2) of this AD, whichever occurred later, is allowed, provided that, prior to installation, the replacement LP compressor blades have passed the ultrasonic inspection in accordance with the instructions of Section 3 of RR NMSB RB.211-72-AH465.</li> </ol> |
| Ref. Publications:                         | <p>Rolls-Royce NMSB RB.211-72-G702 dated 23 May 2011.</p> <p>Rolls-Royce NMSB RB.211-72-G872 dated 2 April 2012, or Revision 1 dated 2 July 2012, or Revision 2 dated 08 March 2013.</p> <p>Rolls-Royce NMSB RB.211-72-H311 dated 08 March 2013.</p> <p>Rolls-Royce NMSB RB.211-72-AH465 dated 15 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. This Proposed AD will be closed for consultation on 17 December 2013.</li> <li>2. Enquiries regarding this PAD 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>3. For any question concerning the technical content of the requirements in this PAD, please contact your designated Rolls-Royce representative, or download the publication from your Aeromanager account at</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

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|  | <p><a href="http://www.aeromanager.com">www.aeromanager.com</a>.</p> <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.O. Box 31, Derby, DE24 8BJ, The United Kingdom.<br/>Telephone: +44 (0) 1332 242424,</p> <p>or send an email 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> |
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