


EASA	AIRWORTHINESS DIRECTIVE
	<p>AD No.: 2013-0240</p> <p>Date: 30 September 2013</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>	
Design Approval Holder's Name : ROLLS-ROYCE plc	Type/Model designation(s) : RB211 Trent 900 engines
TCDS Number :	EASA.E.012
Foreign AD :	Not applicable
Supersedure:	None
ATA 72	Engine – Low Pressure Turbine Exhaust Case and Support Assembly (Tail Bearing Housing) – Inspection / Replacement
Manufacturer(s):	Rolls-Royce plc
Applicability:	<p>RB211 Trent 970-84, 970B-84, 972-84, 972B-84, 977-84, 977B-84 and 980-84 engines, all serial numbers.</p> <p>These engines are known to be installed on, but not limited to, Airbus A380 aeroplanes.</p>
Reason:	<p>Rolls-Royce performed a re-analysis of the structural features of the Trent 900 low pressure turbine exhaust case and support assembly (also known as Tail Bearing Housing, or TBH). The result of this re-analysis indicates that the TBH may not retain full limit load capability in all fail-safe conditions. In addition, during previous inspections of Trent 900 TBH mounts and vanes, cracks have been found in the outer annulus leading edge (LE) fillet of some vanes.</p> <p>These conditions, if not detected and corrected, could lead to disconnection of the TBH structural ring from the mounts, possibly resulting in damage to, or reduced control of, the aeroplane.</p> <p>To address this potential unsafe condition, Rolls-Royce have published Alert Non-Modification Service Bulletins (NMSB) RB.211-72-AG971 and RB.211-72-AH154, now both at Revision 1, providing inspection instructions and criteria for replacement of parts.</p> <p>For the reasons described above, this AD requires on-wing and in-shop inspections of the TBH structural features to detect cracks or damage and, depending on findings, the accomplishment of applicable corrective action(s).</p>
Effective Date:	14 October 2013

<p>Required Action(s) and Compliance Time(s):</p>	<p>Required as indicated, unless accomplished previously:</p> <ol style="list-style-type: none"> (1) Within the compliance times specified in Table 1 of Appendix 1 of this AD, as applicable, accomplish on-wing inspections of the TBH features in accordance with the instructions of the specified sections of the Rolls-Royce Alert NMSB, as referenced in Table 1. (2) Within the compliance times specified in Table 2 of Appendix 1 of this AD, as applicable, accomplish in-shop inspections of the TBH features in accordance with the instructions of the specified sections of the Rolls-Royce Alert NMSB, as referenced in Table 2. (3) If, during any on-wing inspection as required by paragraph (1) of this AD, any crack is found on the TBH Mount Lug Run-outs, remove the engine in accordance with the criteria and within the compliance times defined in paragraph 3.A.(2) of Royce Alert NMSB RB.211-72-AG971. (4) If, during any in-shop inspection as required by paragraph (1) of this AD, any crack is found on the TBH Mount Lug Run-outs, before release to service, repair the engine in accordance with the instructions of sections 3.B.(1) or 3.C.(1), as applicable, of Rolls-Royce Alert NMSB RB.211-72-AG971. (5) If, during any on-wing inspection as required by paragraph (1) of this AD, any crack or damage is found on the TBH Mount Lug Forging LE Areas or Fail Safe Catcher, re-inspect or remove the engine in accordance with the criteria and within the compliance times defined in sections 3.A.(3) or 3.A.(4), as applicable, of Rolls-Royce Alert NMSB RB.211-72-AH154. (6) If, during any in-shop inspection as required by paragraph (2) of this AD, any crack or damage is found on the TBH Mount Lug Forging LE Areas or Fail Safe Catcher, before release to service, repair the engine in accordance with the instructions of sections 3.B.(2) or 3.B.(3), as applicable, of Rolls-Royce Alert NMSB RB.211-72-AH154. (7) Inspections and corrective actions, accomplished before the effective date of this AD, in accordance with the instructions of applicable sections of Rolls-Royce Alert NMSB RB.211-72-AG971 Initial Issue or Rolls-Royce Alert NMSB RB.211-72-AH154 Initial Issue are acceptable for compliance with the requirements of paragraph (1) or (2) of this AD, as applicable. (8) If, on or before the effective date of this AD, the last in-shop inspection of the Mount Lug Run-Outs was accomplished in accordance with the instructions of section 3.C of Rolls-Royce Alert NMSB RB.211-72-AG971 Initial Issue, then the compliance time interval for the next in-shop inspection of the Fail Safe Catcher, as required by paragraph (2) of this AD, may be counted from that previous inspection. (9) Inspections and corrective actions, accomplished before the effective date of this AD, in accordance with the instructions of Rolls-Royce Technical Variance (TV) TV124801 or TV124851 (at any issue) are acceptable in lieu of actions in accordance with the instructions of section 3.A or 3.B, as applicable, of Rolls-Royce Alert NMSB RB.211-72-AG971. (10) Inspections and corrective actions, accomplished before the effective date of this AD, in accordance with the instructions of Rolls-Royce TV132043 or TV132217 (at any issue) are acceptable in lieu of actions in accordance with the instructions of section 3.A or 3.B, as applicable, of Rolls-Royce Alert NMSB RB.211-72-AH154. (11) Before exceeding 17 200 engine flight cycles (FC) by a TBH since first installation on an engine, that TBH must be removed from service. This life limit will be introduced in the applicable Airworthiness Limitation Section (ALS) of the Engine Manual.
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	(12) Corrective actions, as required by paragraph (3), (4), (5) or (6) of this AD, as applicable, do not constitute terminating action for the repetitive inspections required by paragraph (1) and (2) of this AD.
Ref. Publications:	<p>Rolls-Royce Alert NMSB RB.211-72-AG971 original issue dated 20 September 2012, or Revision 1, dated 27 September 2013.</p> <p>Rolls-Royce Alert NMSB RB.211-72-AH154 original issue dated 29 May 2013, or Revision 1, dated 18 June 2013.</p> <p>Rolls-Royce TV124801 issue 2, dated 04 July 2012.</p> <p>Rolls-Royce TV124851 issue 2, dated 04 July 2012.</p> <p>Rolls-Royce TV132043 issue 1, dated 25 March 2013.</p> <p>Rolls-Royce TV132217 issue 2, dated 15 April 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"> 1. If requested and appropriately substantiated, EASA can approve Alternative Methods of Compliance for this AD. 2. This AD was posted on 04 July 2013 as PAD 13-096 for consultation until 25 July 2013. 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, Executive 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 email from http://www.rolls-royce.com/contact/civil_team.jsp identifying the correspondence as being related to Airworthiness Directives.

Appendix 1

Note 1: FC = Flight Cycles.

Note 2: Since new = FC accumulated by the TBH since first installation on an engine.

Note 3: Rolls-Royce NMSB RB.211-72-AG971 Rev 1 Section 3.B provides instructions for in-shop inspections of Mount Lug Run-out and Fail Safe Catcher, as Section 3.C provides instructions for in-shop inspection of the full TBH.

Table 1 – TBH **On-wing** Inspections

TBH Feature	Applicable Rolls-Royce NMSB and Section	Acceptable Alternative Rolls-Royce NMSB and Section	Compliance Time	
			Initial Inspection	Interval (not to exceed)
Mount Lug Run-outs	RB.211-72-AG971 Rev 1 Section 3.A	In-shop: RB.211-72-AG971 Rev 1 Section 3.B or 3.C (see Note 3)	Before exceeding 2 200 FC since new (see Note 2)	2 200 FC
Mount Lug Forging LE Areas and Fail Safe Catcher – When TBH has accumulated no more than 900 FC since new (see Note 2) on the effective date of this AD	RB.211-72-AH154 Rev 1 Section 3.A	In-shop: RB.211-72-AH154 Rev 1 Section 3.B, <u>or</u> RB.211-72-AG971 Rev 1 Section 3.B or 3.C, as applicable (see Note 3)	Before exceeding 1 000 FC since new (see Note 2)	1 000 FC
Mount Lug Forging LE Areas and Fail Safe Catcher – When TBH has accumulated more than 900 FC since new (see Note 2) on the effective date of this AD	RB.211-72-AH154 Rev 1 Section 3.A	In-shop: RB.211-72-AH154 Rev 1 Section 3.B, <u>or</u> RB.211-72-AG971 Rev 1 Section 3.B or 3.C, as applicable (see Note 3)	Within 100 FC after the effective date of this AD	

Appendix 1 (continued)

Table 2 – TBH In-shop Inspections

TBH Feature	Applicable Rolls-Royce NMSB and Section	Acceptable Alternative Rolls-Royce NMSB and Section	Compliance Time	
			Initial Inspection	Interval (not to exceed)
Mount Lug Run-outs	RB.211-72-AG971 Rev 1 Section 3.B	On-wing: RB.211-72-AG971 Rev 1 Section 3.A In-shop: RB.211-72-AG971 Rev 1 Section 3.C (see Note 3)	Before exceeding 2 200 FC since new (see Note 2)	2 200 FC
Top Core Vanes	RB.211-72-AG971 Rev 1 Section 3.C	n/a	Before exceeding 3 800 FC since new (see Note 2)	3 800 FC
Mount Lug Forging LE Areas and Fail Safe Catcher – When TBH has accumulated no more than 900 FC since new (see Note 2) on the effective date of this ADC	RB.211-72-AH154 Rev 1 Section 3.B	On-wing: RB.211-72-AH154 Rev 1 Section 3.A In-shop: RB.211-72-AG971 Rev 1 Section 3.B or 3.C, as applicable (see Note 3)	Before exceeding 1 000 FC since new (see Note 2)	1 000 FC
Mount Lug Forging LE Areas and Fail Safe Catcher – When TBH has accumulated more than 900 FC since new (see Note 2) on the effective date of this AD	RB.211-72-AH154 Rev 1 Section 3.B	On-wing: RB.211-72-AH154 Rev 1 Section 3.A In-shop: RB.211-72-AG971 Rev 1 Section 3.B or 3.C, as applicable (see Note 3)	Within 100 FC after the effective date of this AD	