EASA	AIRWORTHINESS DIRECTIVE
	AD No.: 2011-0050 **Date: 21 March 2011** 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.

This AD is issued in accordance with EC 1702/2003, Part 21A.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].

Type Approval Holder's Name :	**Type/Model designation(s) :**
ROLLS-ROYCE PLC	RB211-Trent 500 series engines

TCDS Number :	EASA TCDS No. E.060
Foreign AD :	N/A
Supersedure :	N/A

ATA 73	**Engine – Right-Hand (RH) Fuel Manifold Assembly – Cleaning / Replacement**
Manufacturer(s):	Rolls-Royce plc
Applicability:	RB211 Trent 500 series engines, all serial numbers. These engines are known to be installed, but not limited to Airbus A340 series aeroplanes.
Reason:	A Trent 500 engine has been found with thermal distress of the Intermediate Pressure (IP) Turbine Nozzle Guide Vanes. The resultant investigation found the root cause to be carbon blockage of the fuel spray nozzles. The source of the carbon has been identified to be the RH fuel manifold assembly. Analysis has verified that low fuel velocity and thermal input may cause formation of carbon in a specific region of the RH fuel manifold. As advanced thermal distress of IP Turbine components may potentially result in uncontained, high energy debris release, the formation of carbon in the RH fuel manifold constitutes a potentially unsafe condition. To address and correct this unsafe condition, Rolls Royce have developed a cleaning or replacement programme of the RH fuel manifold and an optional part replacement. For the reason described above, this AD requires initial and repetitive cleaning or replacement of the RH fuel manifold assembly. It proposes as well accomplishment of a modification which constitutes terminating action for the repetitive cleaning or replacement.

Effective Date:	04 April 2011
Required Action(s) and Compliance Time(s):	Required as indicated, unless accomplished previously: (1) Within the compliance time and depending on engine configurations as indicated in Table 1 of this AD, clean and inspect the RH fuel manifold assembly **or** replace the RH fuel manifold assembly with a serviceable RH fuel manifold assembly in accordance with all instructions contained in Rolls Royce Non Modification Service Bulletin 73 No. 73-AG422 Revision 1. Repeat those actions at intervals not to exceed the ones indicated in Table 1 of this AD. Note 1: the inspection following cleaning serves to provide assurance that the cleaning operation has been effective and proper. Note 2: a serviceable RH fuel manifold assembly is a part which either is new **or** has been cleaned and inspected in accordance with instructions contained in Rolls Royce Non Modification Service Bulletin 73 No. 73-AG422 Revision 1. (2) Accomplishment of Rolls Royce RB211 Propulsion System Service Bulletin Fuel and Control – Introduction of the Revised Right Hand Fuel Manifold Assembly – Modification Number 73-G547 constitutes terminating action for the repetitive cleaning or replacement requirements of this AD for that engine.
Ref. Publications:	Rolls-Royce RB211 Propulsion System Non Modification Service Bulletin (NMSB) No. 73-AG422 Revision 1. The use of later approved revisions of this document is acceptable for compliance with the requirements of this AD.
Remarks :	1. If requested and appropriately substantiated, EASA can approve Alternative Methods of Compliance for this AD. 2. This AD was posted on 04 February 2011 as PAD 11-015 for consultation until 04 March 2011. No comments were received during the consultation period. 3. Enquiries regarding this AD should be referred to the Airworthiness Directives, Safety Management & Research 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 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.** PO 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**.

Annex to EASA AD 2011-0050 – Table 1

<table>
<tr><th colspan="2">Engine Configurations at the effective date of this AD</th><th>Compliance Time for the Initial Cleaning and Inspection or Initial Replacement of Part</th><th>Intervals for the repetitive Cleanings and Inspections or Replacement of Part</th></tr>
<tr><td rowspan="4">The engine has not been refurbished in accordance with the Engine Management Programme (EMP) issue 7 (May 2010) onwards and it cannot be suitably demonstrated that Rolls-Royce Repeater Technical Variance TV97291, July 2009 onwards, or cleaning of manifold in accordance with Overhaul Process Manual, TSD594-J Task 70-00-00-100-121 as instructed in Component Maintenance Manual, Tubes, Hoses and Ducts, October 2009 onwards, or fitment of a new RH manifold assembly or accomplishment of Rolls-Royce RB211 Propulsion System Non Modification Service Bulletin (NMSB) No. 73-AG327 has been carried out,</td><td>and the engine has accumulated a total service life of 3 200 Cycles Since New (CSN) or more</td><td>Within 200 Cycles after the effective date of this AD</td><td rowspan="8">Within 1 300 Cycles since last Cleaning and Inspection or last Replacement of RH fuel manifold assembly</td></tr>
<tr><td>and the engine has accumulated a total service life of greater than or equal to 2 600 CSN but less than 3 200 CSN</td><td>Within 400 Cycles after the effective date of this AD</td></tr>
<tr><td>and the engine has accumulated a total service life of 1 300 CSN but less than 2 600 CSN</td><td>Within 600 Cycles after the effective date of this AD</td></tr>
<tr><td>and the engine has not accumulated a total service life of 1 300 CSN</td><td>At the latest when the engine has accumulated 1 900 Cycles Since New (CSN)</td></tr>
<tr><td rowspan="4">It can be suitably demonstrated that one of the following applies:</td><td>the engine has been refurbished in accordance with Level 3 or Level 4 as defined in issue 7 or any later issue of the Engine Management Programme (EMP) (i)</td><td rowspan="4">At the latest when the engine has accumulated 1300 Cycles after prior accomplishment of actions (i), (ii), (iii) or (iv)</td></tr>
<tr><td>Rolls-Royce Repeater Technical Variance TV97291, July 2009 onwards, has been carried out (ii)</td></tr>
<tr><td>cleaning of manifold in accordance with Overhaul Process Manual, TSD594-J Task 70-00-00-100-121 as instructed in Component Maintenance Manual, Tubes, Hoses and Ducts, October 2009 onwards, has been carried out (iii)</td></tr>
<tr><td>fitment of a new RH manifold assembly or accomplishment of Rolls-Royce RB211 Propulsion System Non Modification Service Bulletin (NMSB) No. 73-AG327 has been carried out (iv)</td></tr>
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