


<b>EASA</b>	<b>PROPOSED AIRWORTHINESS DIRECTIVE</b>
	<p><b>PAD No.: 07-099</b></p> <p><b>Date: 15 June 2007</b></p>
No person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of that Airworthiness Directive unless otherwise agreed with the Authority of the State of Registry.	
<b>Type Approval Holder's Name:</b> ROLLS-ROYCE plc	<b>Type/Model designation(s):</b> RB211 Trent 768-60, 772-60, 772B-60 and 772C-60
TCDS No: EASA E.042	
Foreign AD number: Not applicable	
<p>Supersedure: This AD supersedes EASA AD 2006-0355.</p> <p>[EASA AD 2006-0355 superseded CAA United Kingdom AD G-2004-0016 (EASA Approval Number 2004-6754), which superseded CAA-UK AD G-2003-0016 (EASA Approval Number 2003-1866)]</p>	
<b>ATA 72</b>	<b>Engine – HP/IP Turbine Bearing Oil Vent Tubes – Inspection / Cleaning / Replacement</b>
<b>Manufacturer(s):</b>	Rolls-Royce plc
<b>Applicability:</b>	Models 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.
<b>Reason:</b>	<p>In October 2003 an uncontained multiple Intermediate Pressure (IP) turbine blade release occurred on an RB211 Trent 700 series engine. The blade release was the result of an overspeed of the IP turbine rotor that was initiated by an internal fire in the HP/IP bearing chamber. Post incident analysis established that blockage of the HP/IP turbine bearing oil vent tube, due to oil coking, is a significant factor in the failure sequence.</p> <p>Airworthiness Directive G-2003-0016 (EASA Approval Number 2003-1866) was issued requiring a one-time inspection and cleaning of the HP/IP turbine bearing vent tube. AD G-2004-0016 (EASA Approval Number 2004-6754) revised and superseded G-2003-0016 by introducing repetitive inspections/cleaning and some changes to the threshold lives.</p> <p>In April 2006 a vent pipe breach incident occurred on another engine, resulting in oil loss, in which it is suspected that carbon build up within the vent pipe was a contributing factor. This indicated that further measures were necessary to enhance the cleaning requirements in order to control carbon build-up. Airworthiness Directive EASA AD 2006-0355 was issued, superseding United Kingdom CAA AD G-2004-0016 and introducing enhanced cleaning requirements.</p>

	<p>Further analysis has now identified that previous intervention actions may have exacerbated the problem of carbon formation in the vent pipe. These intervention actions are believed to loosen carbon fragments which are subsequently released during engine running, leading to blockage downstream in the vent flow restrictor. The resultant reduced vent pipe flow will then cause accelerated carbon build up inside the pipe and increased likelihood of auto-ignition.</p> <p>This AD has therefore been revised to include an additional inspection of the vent pipe restrictor, which should only be carried out after an engine run to high power, following the vent pipe cleaning procedure.</p>
Effective Date:	TBD [14 days after final issue date]
Compliance/Action:	<p><u>VENT TUBE INSPECTIONS</u></p> <p>A. <u>On-Wing Compliance:</u></p> <p>(1) For engines with a 05 module installed that are below the threshold life of 10,000 hours or 2,500 cycles since new (whichever occurs first), carry out the Action (part C. below) within 3 months after reaching the threshold life.</p> <p style="padding-left: 40px;">Note: for the purposes of compliance with this Airworthiness Directive, inspection/cleaning carried out previously in accordance with the superseded Airworthiness Directives is deemed to be valid.</p> <p>(2) For engines with a 05 module installed that has already exceeded the threshold life and have not previously undergone the Action (part C. below), carry out the Action within 1 month after the effective date of this Airworthiness Directive.</p> <p style="padding-left: 40px;">Note: any engines in this category have been out of compliance with the superseded AD.</p> <p>(3) Following return to service repeat the Action below within the intervals defined there-in.</p> <p style="padding-left: 40px;">Note: 'next inspection' intervals previously established in compliance with the superseded Airworthiness Directives remain valid until this Airworthiness Directive is accomplished.</p> <p>B. <u>In-Shop Compliance:</u></p> <p>Carry out the Action (part C. below) for engines at every engine shop visit.</p> <p>C. <u>Action:</u></p> <p>(1) Inspect, clean and replace (as necessary) the HP/IP turbine bearing internal and external oil vent tubes and bearing chamber (if specified) and repeat inspect the Vent Flow Restrictor (after either high power ground run, or between 1 and 25 service cycles after inspection/cleaning) in accordance with Section 3 Accomplishment Instructions of Rolls-Royce Alert Non Modification Service Bulletin RB211-72-AE302 Revision 5 (or later approved revision).</p> <p>(2) Acceptance Criteria and Re-inspection Requirements:</p> <p style="padding-left: 20px;">a) HP/IP turbine bearing internal oil vent tubes confirmed to be</p>

	<p>free of carbon by passing the Rolls-Royce cleaning tool (HU80298) through the full length may be returned to service and are subject to repeat interval of 6,400 hours or 1,600 cycles (whichever occurs first).</p> <p>b) HP/IP turbine bearing internal oil vent tubes which contain blockage that prevents the Rolls-Royce cleaning tool (HU80298) from passing through the full length must be removed from service (with the engine) within 10 cycles after the inspection.</p> <p>c) HP/IP turbine bearing external oil vent tubes (IPC ref 79-22-49, 10-100 and 10-500) which contain carbon of visible (by borescope inspection) thickness after cleaning may not be returned to service.</p>
Ref. Publications:	Rolls-Royce Alert Non Mod Service Bulletin RB211-72-AE302 Revision 5 (or later approved revisions).
Remarks:	<ol style="list-style-type: none"> <li>1. If requested and appropriately substantiated the responsible EASA manager for the related product has the authority to accept Alternative Method of Compliance (AMOCs) for this AD.</li> <li>2. The closing date for comments is 28 June 2007.</li> <li>3. Enquiries regarding this AD should be referred to the AD Focal Point - Certification Directorate, EASA. E-mail: <a href="mailto:ADs@easa.europa.eu">ADs@easa.europa.eu</a></li> <li>4. For any questions concerning the technical content of the requirements in this AD, please contact Rolls-Royce plc. PO Box 31, Derby, DE24 8BJ, United Kingdom. Phone: +44 (0) 1332 242424, Fax: +44 (0) 1332 249936.</li> </ol>