



# United Kingdom Civil Aviation Authority

## AIRWORTHINESS DIRECTIVE

AD No: G-2004-0016

Issue Date: 29 June 2004

This AD is issued by the UK CAA acting for and on behalf of the European Aviation Safety Agency as the Primary Aviation Authority (ICAO Annex 8 Authority of State of Design) for the affected product(s).

Approved by the European Aviation Safety Agency under approval number on 2004-6754 28 June 2004.

In accordance with Article 9(7)(b) of the Air Navigation Order 2000 as amended the following action required by this Airworthiness Directive (AD) is mandatory for applicable aircraft registered in the United Kingdom.

No person may operate an aircraft to which an AD applies except in accordance with the requirements of that AD unless otherwise agreed with the Authority of the State of Registry.

Type Approval Holders Name:

**ROLLS-ROYCE PLC**

Type/Model Designation(s):

**RB211 TRENT 768-60, 772-60, 772B-60**

Type Certificate Data Sheet No: 1050

Superseded/ Revised ADs: G-2003-0016

### ATA 72 - IP TURBINE BEARING - OIL VENT TUBE INSPECTION

Manufacturer(s): Rolls-Royce PLC

**Applicability:** Models RB211 Trent 768-60, 772-60, 772B-60 engines installed on Airbus A330 aeroplanes.

**Reason:** This Airworthiness Directive has been raised following an incident involving uncontained multiple IP turbine blade release on a Trent 700 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 and investigation has established that blockage of the HP/IP turbine bearing oil vent tube due to oil coking is a significant factor in the failure sequence.

G-2003-0016 instructed a one-off inspection/cleaning of the HP/IP turbine bearing vent tube.

This Airworthiness Directive supersedes Airworthiness Directive G-2003-0016 by extending the requirements as follows:

- Repetitive inspections/cleaning of the HP/IP turbine bearing internal oil vent tube are introduced at intervals that are dependent on the level of carbon build-up found.
- The threshold life is revised following evidence from the initial inspections that have shown that overhaul does not always remove all carbon from the vent pipe. The threshold life is therefore now applicable "since new" only, and not "since last overhaul".
- The threshold life is also revised by the addition of a cyclic limit following evidence from the initial inspection.
- As a result of the latter two points above, a further three months compliance time is included to cover those engines which, due to overhaul or high cyclic usage, now exceed the revised threshold life of this Airworthiness Directive.

**Effective Date:** 30 June 2004

continued on next page

**Compliance/Action:**

- 1) Carry out the Action detailed below for engines on which the 05 module life exceeds the threshold life of 10,000 hours or 2,500 cycles since new (whichever occurs first) within 3 months of reaching the threshold life. For engines already exceeding the threshold life, carry out the Action detailed below within 3 months of the Effective Date of this Airworthiness Directive.
- 2) HP/IP turbine bearing internal oil vent tubes inspected/cleaned in accordance with this Airworthiness Directive, for which no evidence of carbon build up of visible thickness exists or for which an internal clearance of 8mm diameter for the full length of the tube is established, must be re-inspected/cleaned in accordance with the Action detailed below at repeat intervals of 6,400 hours or 1,600 cycles (whichever occurs first).
- 3) HP/IP turbine bearing internal oil vent tubes inspected/cleaned in accordance with this Airworthiness Directive which do not meet the acceptance criteria in (2), for which an internal clearance of 6mm diameter for the full length of the tube is established, must be re-inspected/cleaned in accordance with the Action detailed below at repeat intervals of 1,600 hours or 400 cycles (whichever occurs first).
- 4) HP/IP turbine bearing internal oil vent tubes inspected/cleaned in accordance with this Airworthiness Directive, for which an internal clearance of less than 6mm diameter is established, remove the engine from service within 10 cycles of the inspection.

Note: For the purposes of compliance with this Airworthiness Directive, inspection/cleaning carried out in accordance with superseded Airworthiness Directive G-2002-0016 (Rolls-Royce Alert Service Bulletin RB211-72-AE302 original issue) is deemed to be valid.

**Action:** Inspect and clean (as necessary) the HP/IP turbine bearing internal oil vent tube in accordance with Section 3 Accomplishment Instructions of Rolls-Royce Alert Non Modification Service Bulletin RB211-72- AE302 rev 1 (or later approved issue).

**Reference Publications:** Rolls-Royce Alert Non Mod Service Bulletin RB211-72-AE302 original or later approved issue may be obtained from Publication Services, Rolls-Royce plc. PO Box 31, Derby, DE24 8BJ, United Kingdom. Phone: +44 (0) 1332 242424, Fax: +44 (0) 1332 249936.

**Remarks:** Enquiries regarding this Airworthiness Directive may be directed to Civil Aviation Authority, Safety Regulation Group, Propulsion Department, Aviation House, Gatwick Airport South, West Sussex, RH6 0YR, United Kingdom. Phone: +44 (0) 1293 573199 Fax: +44 (0) 1293 573979 E-mail: tony.boud@srg.caa.co.uk.