



**United Kingdom  
Civil Aviation Authority**

**AIRWORTHINESS  
DIRECTIVE**

**AD No: G-2005-0029**

Issue Date: 4 October 2005

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 2005-6239 on 12 September 2005.**

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:

Type/Model Designation(s):

**ROLLS-ROYCE PLC**

**RB211 TRENT 500**

**Type Certificate Data Sheet No: 1056**

**Superseded/ Revised ADs: None**

**CORRECTION to G-2005-0029 dated 19 September 2005**

**ATA 72 - IP TURBINE BEARING – INSPECTION OF OIL VENT AND BEARING CHAMBER FOR CARBON BUILD-UP**

**Manufacturer(s):** Rolls-Royce plc

**Applicability:** Models RB211-553-61, 556-61, 556B-61, 560-61, 553A2-61, 556A2-61, 556B2-61, 560A2-61 engines installed on Airbus A340-500/600 series aeroplanes.

**Reason:** A previous service incident in a Trent 700 engine has shown that carbon restriction in the vent tube can cause over-pressurisation of the HP/IP bearing chamber leading to oil ejection from the rear of the chamber. If this oil spray ignites, the fire can then cause an IPT shaft failure, leading to IPT disc overspeed with resultant release of hazardous high-energy debris. It is considered that the risk of a hazardous outcome increases as a function of tube total time.

As the design arrangement in the Trent 500 engines is similar to that of the Trent 700 engines, the same failure scenario could occur in the Trent 500 engines. Therefore, this Airworthiness Directive instructs inspection of the vent tube for carbon build-up, which might lead to blockage of the oil tube.

**Effective Date:** 30 September 2005

**Compliance/Action:** Inspect and assess the condition of the HP/IP turbine bearing oil vent tubes and bearing chamber in accordance with Rolls-Royce Alert Non Modification Service Bulletin RB211-72-AE836 original issue (or later approved issue) section 3 Accomplishment Instructions Part A or Part B as follows:

- 1) Inspect the HP/IP turbine bearing oil vent tubes and bearing chamber at an 05 module threshold life of 12,000 hours or 1,500 cycles (whichever occurs first) since new:
  - (a) For 05 modules that exceed the threshold life at the effective date of this Airworthiness Directive, carry out the inspection within 2,400 hours or 300 cycles (whichever occurs first) from the effective date of this Airworthiness Directive.
  - (b) For 05 modules that are below the threshold life but above 9,600 hours or 1,200 cycles at the effective date of this Airworthiness Directive, carry out the inspection within 2,400 hours or 300 cycles (whichever occurs first) from the effective date of this Airworthiness Directive.
  - (c) For 05 modules that are below 9,600 hours or 1,200 cycles at the effective date of this Airworthiness Directive, carry out the inspection at a maximum life of 12,000 hours or 1,500 cycles (whichever occurs first).

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- 2) Repeat the inspection at intervals not exceeding 12,000 hours or 1,500 cycles since previous inspection (whichever occurs first) if, at the previous inspection, any one of the following conditions were met:
  - (a) There was no carbon build up of a visible thickness.
  - (b) The cleaning tool HU82105 could pass along the full length of the internal vent tube into the bearing chamber.
  - (c) The 8mm diameter borescope could pass along the full length of the internal vent tube into the bearing chamber.
- 3) Repeat the inspection at interval not exceeding 1,600 hours or 400 cycles since previous inspection (whichever occurs first) if, at the the previous inspection, the carbon restriction prevented the 8mm diameter flexible borescope from passing through the internal vent tube, but the 6mm diameter borescope could pass along the full length of the internal vent tube into the bearing chamber.
- 4) Remove the engine within 10 cycles if the carbon restriction prevented the 6mm diameter borescope from passing through the full length of the internal vent tube.

For 05 Module in shop at the effective date of this Airworthiness Directive, inspect the vent tube for carbon build-up of a visible thickness and repair the vent tube as necessary in accordance with Rolls-Royce Alert Non Modification Service Bulletin RB211-72-AE836 original issue (or later approved issue) section 3 Accomplishment Instructions Part B.

**Reference Publications:** Rolls-Royce Alert Service Bulletin RB211-72-AE836 may be obtained from Rolls-Royce plc, Technical Publications, 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 573641 Fax: +44 (0) 1293 573979 E-mail: christophe.denis@srg.caa.co.uk.