



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 2004-3674 on 7 April 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:

Type/Model Designation(s):

**ROLLS-ROYCE PLC**

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

Type Certificate Data Sheet No: 1050

Superseded AD: G-2003-0014

**ATA 72 – ENGINE – HP COMPRESSOR – TEST/MODIFICATION**

Manufacturer(s): Rolls-Royce plc

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

Reason: There have been a number of low power surges in service on Trent 700 engines. These surges occurred with the aeroplane on the ground as take-off power was being set or during taxi. The cause of the surges has been identified as excessive wear to the HPC casing front location feature. This causes increased HPC tip clearances resulting in loss of surge margin. Engines affected by this problem are also at risk of failure to respond due to surge on acceleration during descent, prior to flap selection.

Routine ground testing for adequate surge margin will assure safe in-flight operation and embodiment of the redesigned HPC casing front location feature will remove the problem.

This AD supersedes AD G-2003-0014 by introducing the accomplishment of the engine control software to automatically maximise HPC surge margin in descent as an Interim Action with an associated compliance date. The requirements of this AD are otherwise unchanged from those of AD G-2003-0014.

Effective Date: 4 December 2003 (the effective date of AD G-2003-0014).

Compliance/Action:

1) In-Service Test

Carry out a surge test in accordance with Rolls-Royce Alert Service Bulletin RB211-71-AD509 revision 3 or later CAA approved revision, Section 3 Accomplishment Instructions before the engine exceeds 2000 cycles since new or 1000 cycles since HP Compressor overhaul, and subsequently at intervals of not more than;

(a) 130 cycles

or

(b) 160 cycles if Rolls-Royce Alert Service Bulletin RB211-73-AE224 original issue or later CAA approved revision, or later standard of engine control software is embodied.

Note: For the purposes of this Airworthiness Directive, testing carried out in accordance with superseded AD 005-09-2001 or AD G-2003-0014 (Rolls-Royce Alert Service Bulletin RB211-71-AD509 revision 3, revision 2, revision 1 or original issue) is deemed to be valid.

## 2) Interim Action

Fit an EEC incorporating a revised standard of engine control software as specified in Rolls-Royce Alert Service Bulletin RB211-73-AE224 original issue or later CAA approved revision, or later standard of engine control software, before 1 July 2005.

## 3) Terminating Action

Fit redesigned HP compressor stage 1 casing and intermediate case outer location ring in accordance with Rolls-Royce Service Bulletin RB211-72-D574 original issue or later CAA approved revision, Section 3 Accomplishment Instructions within 4500 cycles of the Effective Date of this Airworthiness Directive or before 30 June 2012 whichever is the sooner. Incorporation of this modification removes the requirement to carry out 1) In-Service Test and 2) Interim Action and therefore constitutes the terminating action for this Airworthiness Directive.

**Reference Publications:** Rolls-Royce Alert Service Bulletin RB211-71-AD509 revision 3 or later approved issue, Rolls-Royce Alert Service Bulletin RB211-73-AE224 original issue or later CAA approved revision, Rolls-Royce Service Bulletin RB211-72-D574 original issue or later CAA approved revision 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 AD 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.booth@srp.caa.co.uk](mailto:tony.booth@srp.caa.co.uk).

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