



**United Kingdom
Civil Aviation Authority**

**AIRWORTHINESS
DIRECTIVE**

AD No: G-2003-0011

Issue Date: 1 October 2003

This AD is issued by the UK CAA as the Primary Aviation Authority (ICAO Annex 8 Authority of State of Design) for the affected product(s).

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

RB211-524

Type Certificate Data Sheet No: 1043/1046/1048

Superseded AD: 005-07-95

ATA 72 – ENGINE - COMBUSTION LINER HEAD AND METERPANEL ASSEMBLY – INSPECTION

Manufacturer(s): Rolls-Royce plc

Applicability: Model RB211-524B2, 524C2, 524D4, 524B-02, 524B3, 524B4 engines incorporating RB211-72-7221 or SB RB211-72-7998 but not incorporating RB211-72-9670 or RB211-72-9764 combustion liners.

Model RB211-524G, 524H engines not incorporating SB RB211-72-9764.

These engines are installed on Boeing 747 series aeroplanes and Lockheed L-1011 series aeroplanes.

Reason: An RB211-524B4 engine suffered a combustion case burn-through as a result of combustor head break-up; this engine had been previously inspected within the inspection interval specified in revision 8 of the Rolls-Royce Service Bulletin RB211-72-B482. The revision 9 to Rolls-Royce Service Bulletin RB211-72-B482 is issued as an Alert Service Bulletin RB211-72-AB482 in accordance with the new procedures of JAR39; this revision reduces the inspection interval of RB211-524B series engines from 400 cycles to 200 cycles in line with all other engine marks. There are no other changes to the previous inspection requirements for all other engines.

A terminating action to this Directive is required by 31 December 2012.

This Directive supersedes CAA Airworthiness Directive 005-07-95.

Effective Date: 14 October 2003

Compliance/Action:A. Combustion Liner Head Section

At the threshold and within the intervals detailed below, inspect the combustion head section for break-up in accordance with the Accomplishment Instructions (paragraph 3A) and subject to the Acceptance Limits (paragraph 1E) of Rolls-Royce Alert Service Bulletin RB211-72-AB482 revision 9 dated 28 July 2003.

1. For **RB211-524C2, 524D4, 524G and 524H** engines as defined in the Applicability of this Directive,

a. The head section has not been previously repaired,

Inspect, unless already accomplished, the combustion head section between 1400 and 1600 cycles since new. For those combustion head sections, which have exceeded 1600 cycles since new and which have not been previously inspected to Service Bulletin RB211-72-B482 revision 8, inspect within 100 cycles from the effective date of this Directive.

Repeat the inspection at intervals not exceeding 200 cycles thereafter.

b. The head section has previously been repaired in accordance with FRS5367/B,

Inspect, unless already accomplished, the combustion head section between 1800 and 2200 cycles since the repair FRS5367/B was carried out. For those combustion head sections, which have exceeded 2200 cycles since repair FRS5367/B and which have not been previously inspected to Service Bulletin RB211-72-B482 revision 8, inspect within 200 cycles from the effective date of this Directive.

Repeat the inspection at intervals not exceeding 400 cycles thereafter.

c. The head section has been repaired by means other than FRS5367/B,

Inspect, unless already accomplished, the combustion head section between 500 and 700 cycles since the last head section repair was carried out. For those combustion head sections, which have exceeded 700 cycles since repair and which have not been previously inspected to Service Bulletin RB211-72-B482 revision 8, inspect within 100 cycles from the effective date of this Directive.

Repeat the inspection at intervals not exceeding 200 cycles thereafter.

2. For **RB211-524B-02, 524B2, 524B3 and 524B4** engines as defined in the Applicability of this Directive,

a. The head section has not been previously repaired,

Inspect, unless already accomplished, the combustion head section between 3000 and 3200 cycles since new. For those combustion head sections, which have exceeded 3200 cycles since new and which have not been previously inspected to Service Bulletin RB211-72-B482 revision 8, inspect within 200 cycles from the effective date of this Directive.

Repeat the inspection at intervals not exceeding 200 cycles thereafter.

b. The head section has previously been repaired in accordance with FRS5367/B,

Inspect, unless already accomplished, the combustion head section between 3000 and 3200 cycles since the repair FRS5367/B was carried out. For those combustion head sections, which have exceeded 3200 cycles since repair FRS5367/B and which have not been previously inspected to Service Bulletin RB211-72-B482 revision 8, inspect within 200 cycles from the effective date of this Directive.

Repeat the inspection at intervals not exceeding 400 cycles thereafter.

c. The head section has been repaired by means other than FRS5367/B,

Inspect, unless already accomplished, the combustion head section between 2000 and 2200 cycles since last head section repair. For those combustion head sections, which have exceeded 2200 cycles since repair and which have not been previously inspected to Service Bulletin RB211-72-B482 revision 8, inspect within 200 cycles from the effective date of this Directive.

Repeat the inspection at intervals not exceeding 200 cycles thereafter.

Note: If the Operator can confirm with the relevant Overhaul Base or Repair Vendor that the microbrazed repair, FRS5367, has been applied to all 18 struts, then this is equivalent to FRS5367/B.

Note: Head sections repaired by replacement of all 18 struts in accordance with FRS6548 are considered as equivalent to fitting a new head section for the purposes of this Directive.

B. Meterpanel Assembly

For **RB211-524D4, 524G and 524H** engines incorporating SB72-7998, inspect the meterpanel assembly at the threshold and within the intervals detailed below in accordance with the Accomplishment Instructions (paragraph 3B) and subject to the Acceptance Limits (paragraph 1E) of Rolls-Royce Alert Service Bulletin RB211-72-AB482 revision 9 dated 28 July 2003,

1. The meterpanel assembly has not been previously repaired,

Inspect, unless already accomplished, the meterpanel assembly between 1000 and 1200 cycles since new. For those meterpanels, which have exceeded 1200 cycles since new and which have not been previously inspected in accordance with Service Bulletin RB211-72-B482 revision 8, inspect within 50 cycles from the effective date of this Directive.

Repeat the inspection at intervals not exceeding 400 cycles.

Note: For those operators who do not use RB211-524H rating at any time, the inspection threshold may be increased to between 1800 and 2000 cycles.

2. The meterpanel has previously been repaired,

Inspect, unless already accomplished, the meterpanel assembly between 500 and 700 cycles since last repair, if a new meterpanel has not been fitted during this repair. For those meterpanels, which have exceeded 700 cycles since last repair and which have not been previously inspected to Service Bulletin RB211-72-B482 revision 8, inspect within 50 cycles from the effective date of this Directive.

Repeat the inspection at intervals not exceeding 400 cycles.

C. Terminating Action

The incorporation of the modifications RB211-72-9670 or RB211-72-9764 in the RB211-524B2, 524C2, 524D4, 524B-02, 524B3, 524B4 engines constitutes the terminating action to the requirements of this Directive.

The incorporation of the modification RB211-72-9764 in the RB211-524G and 524H engines constitutes the terminating action to the requirements of this Directive.

The incorporation of these modifications is required to be accomplished at next shop visit where the 04 module is refurbished or overhaul, but no later than 31 December 2012.

Reference Publications: Rolls-Royce Alert Service Bulletin RB211-72-AB482 may be obtained from Rolls-Royce plc, Technical Publications, PO Box 31, Derby, DE24 8BJ, United Kingdom.

Remarks: Enquiries regarding this Directive should be directed to the Civil Aviation Authority, Propulsion Department, Safety Regulation Group, Aviation House, Gatwick Airport South, West Sussex, RH6 0YR, United Kingdom. Phone: +44 (0)1293 573641 Fax: +44 (0) 1293 573979

For questions regarding the technical content of this Directive contact Rolls-Royce plc at the address shown above.