



Airworthiness Directive

AD No.: 2004-0009R3

Issued: 23 March 2016

Note: This Airworthiness Directive (AD) is issued by EASA, acting in accordance with Regulation (EC) 216/2008 on behalf of the European Union, its Member States and of the European third countries that participate in the activities of EASA under Article 66 of that Regulation.

This AD is issued in accordance with Regulation (EU) 748/2012, Part 21.A.3B. In accordance with Regulation (EU) 1321/2014 Annex I, Part M.A.301, the continuing airworthiness of an aircraft shall be ensured by accomplishing any applicable ADs. Consequently, no person may operate an aircraft to which an AD applies, except in accordance with the requirements of that AD, unless otherwise specified by the Agency [Regulation (EU) 1321/2014 Annex I, Part M.A.303] or agreed with the Authority of the State of Registry [Regulation (EC) 216/2008, Article 14(4) exemption].

Design Approval Holder's Name:

ROLLS-ROYCE CORPORATION

Type/Model designation(s):

250-C18, -C20, -C28 and -C30 engines

Effective Date: Revision 3: 30 March 2016
Original issue, Revision 1 and Revision 2: 15 December 2004

TCDS Number(s): EASA.IM.E.052 and EASA.IM.E.109

Foreign AD: None

Revision: This AD revises EASA AD 2004-0009R2 dated 25 November 2005. The original issue of this AD superseded United Kingdom (UK) Civil Aviation Authority (CAA) AD 010-12-92 Revision 2, effective date 03 March 1995.

ATA 73 – Engine Fuel & Control – Engine Fuel System Pipes – Inspection

Manufacturer(s):

Rolls-Royce Corporation (RRC), formerly Allison Engine Company, Allison Gas Turbine Division, Detroit Diesel Allison

Applicability:

Models 250-C18, 250-C18A, 250-C20, 250-C20B, 250-C20F, 250-C20J, 250-C20R, 250-C20R/1, 250-C20R/2, 250-C20R/4, 250-C20S, 250-C20W, 250-C28B, 250-C28C, 250-C30, 250-C30G, 250-C30G/2, 250-C30M, 250-C30P and 250-C30S turboshaft engines, all serial numbers.

These engines are installed in single- and twin-engined helicopters.

Reason:

Accidents and incidents were reported concerning RRC 250 series turboshaft engines, which were attributed to improper alignment, clamping, and torquing of engine tubing during installation. Instances of twisted lines, kinked lines and split flares resulted from installation practices contrary to those specified in the Operation and Maintenance Manual.



This condition, if not detected and corrected, could lead to engine in-flight shut-down (IFSD), possibly resulting in a forced landing and consequent damage to the helicopter and injury to occupants.

To address this potential unsafe condition, RRC issued Alert Commercial Service Letter (CSL) A-169, A-1166, A-2113, A-3117 and A-4036 (single document, hereafter referred to as 'the CSL' in this AD) to provide information on how to prevent incorrect installation of fuel control system pipes. The CSL also describes the various failure modes of the tube assemblies, which can be traced to one or any combination of the causes listed in the CSL.

Prompted by these findings and actions, in 1991, CAA UK issued 'additional' AD 010-12-92 (later revised twice) to require repetitive inspections of the 'B' nuts of all fuel control system pipes connecting the Gas Producer Fuel Control, the Power Turbine Governor, or the Compressor for indication of slippage and, depending on findings, accomplishment of applicable corrective action(s), as described in the CSL for engines installed on UK-registered helicopters.

In December 2004, upon request of the CAA UK, EASA issued AD 2004-0009 (later corrected, and revised twice), retaining the requirements of CAA UK AD 010-12-92 Rev.2, which was superseded, making these actions valid for all engines installed on helicopters registered in EASA Member States.

Since AD 2004-0009R2 was issued, it became apparent that, despite the fact that the AD explicitly applied to "engines installed in single- and twin-engined helicopters", the AD also included a reference to USA TCDS E10CE (250-B15 and -B17 turboprop engines) which has caused confusion. The same CSL (TP CSL A-101, A-1121 and A-2019) also applies to those turboprop engines, but this AD does not. In addition, feedback from operators indicated that the not-to-exceed 100 flight hours (FH) inspection interval was deemed too 'inflexible' for maintenance planning purposes.

For the reasons described above, this AD is revised to delete the reference to USA TCDS E10CE, to explicitly list the affected turboshaft engine models (at this time, the Models 250-C18B, 250-C18C, 250-C20C, 250-C28, 250-C30R, 250-C30R/1, 250-C30R/3, 250-C30R/3M and 250-C30U are not validated in Europe), to extend the inspection interval, and to introduce some editorial changes to meet current AD writing standards, without changing the requirements.

Required Action(s) and Compliance Time(s):

Required as indicated, unless accomplished previously:

- (1) Within 100 FH after 15 December 2004 [the effective date of the original issue of this AD], and, thereafter, at intervals not to exceed 110 FH, inspect the 'B' nuts of all fuel control system pipes connecting the Gas Producer Fuel Control, the Power Turbine Governor, or the Compressor (Pc, Py, Pr, Pg, Po, P1 and P2 pipelines) for indication of slippage.
- (2) During each engine maintenance after 15 December 2004 [the effective date of the original issue of this AD] which involves disturbing any fuel control system pipes connecting the Gas Producer Fuel Control, the Power Turbine Governor, or the Compressor (Pc, Py, Pr, Pg, Po, P1, and P2 pipelines), comply with paragraphs (2.A) and (2.B) of this AD.



(2.A) Accomplish the instructions of the CSL original issue, Section Recommendations, all paragraphs, except 1 and 10, or the CSL at Revision 1, Section 2 Recommendations, all paragraphs, except A and J.

(2.B) Record the torque value of each 'B' nut in the applicable engine maintenance record(s).

- (3) If, during any inspection as required by paragraph (1) of this AD, discrepancies are detected, before next flight, accomplish the applicable corrective action(s) in accordance with the instructions of the engine's applicable Operation and Maintenance Manual.
- (4) If, during any maintenance action as required by paragraph (2.A) of this AD, discrepancies are detected, before release to service of the engine, accomplish the applicable corrective action(s) in accordance with the instructions of the engine's applicable Operation and Maintenance Manual.
- (5) Accomplishment of corrective actions on an engine, as required by paragraph (3) or (4) of this AD, as applicable, does not constitute terminating action for the repetitive actions required by paragraphs (1) and (2) of this AD for that engine.

Ref. Publications:

Rolls-Royce Corporation Alert CSL A-169, A-1166, A-2113, A-3117 and A-4036 (single document), original issue dated 15 November 1990, or Revision 1 dated 5 February 2007.

Remarks:

1. If requested and appropriately substantiated, EASA can approve Alternative Methods of Compliance for this AD.
2. Based on the required actions and the compliance time, EASA have decided to issue a Final AD with Request for Comments, postponing the public consultation process until after publication.
3. Enquiries regarding this AD should be referred to the EASA Safety Information Section, Certification Directorate. E-mail: ADs@easa.europa.eu.
4. For any question concerning the technical content of the requirements in this AD, please contact Rolls-Royce Corporation, 450 South Meridian Street, Indianapolis, Indiana 46225-1103, United States of America, Telephone: 888-255-4766 or +1 317-230-2720, E-mail: helicoptercustsupp@rolls-royce.com, Internet: www.rolls-royce.com.

