



Airworthiness Directive

AD No.: 2017-0148

Issued: 15 August 2017

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 plc

Type/Model designation(s):

Viper engines

Effective Date: 29 August 2017

TCDS Number(s): United Kingdom No. 1025, 1033 and 1038

Foreign AD: Not applicable

Supersedure: This AD supersedes EASA AD 2015-0127R1, dated 14 August 2015.

ATA 05 – Time Limits / Maintenance Checks – Engine Critical Parts Cyclic Life Limits – Amendment

Manufacturer(s):

Rolls-Royce plc (RR)

Applicability:

Viper Mk. 521, Mk. 522 and Mk. 601-22 engines, all serial numbers.

These engines are known to be installed on, but not limited to, Textron Aviation Inc. (formerly Beechcraft Corporation, Hawker Beechcraft, Raytheon Aircraft Company, Beech Aircraft Corporation, British Aerospace, Hawker Siddeley) BH.125 and HS.125 series aeroplanes.

Reason:

Engineering analysis of the lives of critical parts of RR Viper Mk. 521, Mk. 522 and Mk. 601-22 engines resulted in reduced cyclic life limits for certain parts. The reduced limits are published by RR in Viper Mk.601-22 Alert Service Bulletin (ASB) 72-A207, Viper Mk.521 ASB 72-A408, and Viper Mk.522 ASB 72-A412 and ASB 72-A413.

Operation of critical parts beyond the established cyclic life limits may result in part failure, possibly resulting in the release of high-energy debris, which may cause damage to the aeroplane and/or injury to the occupants.



Previously, EASA issued AD 2015-0127 (later revised) to require implementation of the reduced cyclic life limits of the affected critical parts, i.e. replacement of each part before the applicable reduced life limit is exceeded, and replacement of those critical parts that had already exceeded the reduced cyclic life limits.

Since that AD was issued, further analysis determined the need to classify compressor rotating shrouds (stages 1-5) and the compressor main shaft as Group A components. Consequently, RR revised Viper Mk.601-22 ASB 72-A207, Viper Mk.521 ASB 72-A408, both Circulation (Circ.) A and B, and Viper Mk.522 ASB 72-A412 (Circ. B) and ASB 72-A413 (Circ. A) accordingly, all now at Revision 1, hereafter collectively referred to as 'the applicable ASB' in this AD, to include the appropriate cyclic life limits.

For the reason described above, this AD retains the requirements of EASA AD 2015-0127R1, which is superseded, and requires implementation of those new cyclic life limits.

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

Required as indicated, unless accomplished previously:

Note 1: Table 1 of each applicable ASB contains a list of critical parts, hereafter referred to as 'affected parts' in this AD, and contains the applicable cyclic life limits.

Replacement of Life Limited Parts:

- (1) Before exceeding the applicable cyclic life limit (see Note 1 of this AD), or within 30 days after the effective date of this AD, whichever occurs later, replace each affected part, as applicable to engine model and depending on engine configuration, in accordance with the instructions of the applicable ASB.

Aircraft Maintenance Programme (AMP) Revision:

- (2) Within 12 months after the effective date of this AD, revise the approved AMP, on the basis of which the operator or the owner ensures the continuing airworthiness of each operated engine, by incorporating the cyclic life limitations described in the applicable ASB.

Credit:

- (3) For an AMP that, on the effective date of this AD, is already updated to incorporate the cyclic life limitations as specified in the applicable ASB at original issue, that action ensures (see Note 2 of this AD) the continued accomplishment of those limitations.

Consequently, for an engine to which that AMP applies, it is acceptable to accomplish the new limitations, as applicable to engine model and depending on engine configuration, as defined in, and within the compliance times as specified in, the applicable ASB, to comply with paragraph (1) of this AD.

For that AMP, it is acceptable to incorporate the new limitations, as applicable to engine model and depending on engine configuration, as defined in the applicable ASB, into the AMP to comply with paragraph (2) of this AD.



Recording AD compliance:

- (4) When the AMP has been revised as required by paragraph (2) or (3) of this AD, as applicable, that action ensures (see Note 2 of this AD) continued accomplishment of the tasks as required by paragraph (1) of this AD for that aeroplane. Consequently, after revising the AMP, as required by paragraph (2) or (3) of this AD, as applicable, it is not necessary that accomplishment of individual action is recorded for demonstration of AD compliance on a continued basis.

Note 2: For affected RR Viper engines installed on aeroplanes registered in Europe, complying with the approved AMP, as specified in paragraph (2) or (3) of this AD, as applicable, is required by Commission Regulation (EU) [1321/2014](#), Part M.A.301, paragraph 3.

Parts Installation:

- (5) From the effective date of this AD, it is allowed to install an affected part (see Note 1 of this AD) on an engine, provided that the part is new, or has not exceeded the applicable cyclic life limit as specified in Table 1 of the applicable ASB.

Ref. Publications:

RR ASB 72-A207, original issue dated January 2015, and Revision 1 dated June 2017.

RR ASB 72-A408 (Circ. A), original issue dated January 2015, and Revision 1 dated June 2017.

RR ASB 72-A408 (Circ. B), original issue dated January 2015, and Revision 1 dated June 2017.

RR ASB 72-A412 (Circ. B), original issue dated January 2015, and Revision 1 dated June 2017.

RR ASB 72-A413 (Circ. A), original issue dated January 2015, and Revision 1 dated June 2017.

The use of later approved revisions of these documents is acceptable for compliance with the requirements of this AD.

Remarks:

1. If requested and appropriately substantiated, EASA can approve Alternative Methods of Compliance for this AD.
2. This AD was posted on 04 July 2017 as PAD 17-088 for consultation until 01 August 2017. No comments were received during the consultation period.
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 plc, Defence Aerospace Operations Room - WH-70, P.O. Box 3, Filton, Bristol BS34 7QE, United Kingdom, Telephone : +44 (0) 117 97 90700, Fax: +44 (0) 117 97 95498 E-Mail: defence-operations-room@rolls-royce.com.

