



## Emergency Airworthiness Directive

**AD No.:** 2017-0194-E

**Issued:** 29 September 2017

Note: This Emergency 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:

AIRBUS HELICOPTERS

### Type/Model designation(s):

EC175 B helicopters

**Effective Date:** 03 October 2017

**TCDS Number(s):** EASA.R.150

**Foreign AD:** Not applicable

**Supersedure:** This AD supersedes EASA Emergency AD 2017-0127-E dated 21 July 2017.

## ATA 55 – Stabilizers – Horizontal Stabilizer Attachment Bolts – Inspection / Modification / Clearance Check

### ATA Rotorcraft Flight Manual – Amendment

#### Manufacturer(s):

Airbus Helicopters (AH)

#### Applicability:

EC175 B helicopters, all serial numbers (s/n).

#### Reason:

During a daily inspection of an EC175 B helicopter, a gap was noticed between the horizontal stabilizer and its fitting. The subsequent torque check revealed the loss of torque of one of the nuts. After removal of the affected nut, the observed clearance was found to be above the maximum allowable value of 0.1 millimetres (mm). During a daily inspection of another helicopter, one of the two horizontal stabilizer attachment bolts was found to be protruding from its seat. At a closer inspection, the bolt was found broken in its threaded section and kept in place by the sealant.

These conditions, if not detected and corrected, could lead to the in-flight loss of the horizontal stabilizer, possibly resulting in loss of control of the helicopter.



To address these potential unsafe conditions, as a precautionary measure pending completion of the investigation, AH issued EC175 Emergency Alert Service Bulletin (ASB) 05A014, providing inspection instructions. Consequently, EASA issued Emergency AD 2016-0243-E to require a one-time measurement and recording of the clearance between the horizontal stabilizer and its fitting, repetitive inspections of the affected bolts for integrity and cracks, repetitive measurement of the tightening torque of the related nuts and, depending on findings, accomplishment of applicable corrective action(s).

After that AD was issued, further analyses were conducted and it was determined that visual inspection of the attachment area of the horizontal stabilizer was also necessary. As a result, EASA issued AD 2016-0262-E, retaining the requirements of EASA AD 2016-0243-E, which was superseded, additionally requiring repetitive visual inspections of the attachment area of the horizontal stabilizer and, depending on findings, accomplishment of applicable corrective action(s).

Since that AD was published, occurrences were reported of horizontal stabilizers, developing fretting on the bushings at the interface with the horizontal stabilizer fitting, and of damaged bolts, possibly caused by installation of non-chamfered washers under their heads. Subsequent investigation determined the necessity of introduction of a service limit for the bolts securing the horizontal stabilizer to the tail boom and additional inspections. Also, further analysis on the possible consequences, if the clearance between the horizontal stabilizer and its fitting exceeds a value of 0.1 mm, concluded that the accumulated service life of the affected horizontal stabilizer fittings must be recalculated applying some penalty factors for certain helicopters. Prompted by these findings and developments, AH issued EC175 ASB 05A014 Revision 2 to provide additional and improved inspection instructions.

Consequently, EASA issued Emergency AD 2017-0127-E, partially retaining the requirements of EASA AD 2016-0262-E, which was superseded, and additionally requiring reduction of the inspection interval for the affected horizontal stabilizer, inspection of the contact areas between the affected horizontal stabilizer and stabilizer fitting, introduction of a service limit for the affected bolts, and implementation of a penalty factor to the flight hours (FH) accumulated by certain helicopters.

Since that AD was issued, a refined stress analysis and failure assessment concluded that to reduce the risk of in-flight loss of the horizontal stabilizer to an acceptable level, reduction of existing service life limits, additional maintenance tasks and flight limitation(s) are necessary. Consequently, AH issued Revision 3 of EC175 Emergency ASB 05A014, Service Bulletin (SB) EC175-55-005 and a Temporary Revision (TR) to the EC175 B Rotorcraft Flight Manual (RFM) to provide those additional instructions.

For the reasons described above, this AD retains the requirements of EASA AD 2017-0127-E, which is superseded, and additionally requires reduction of service life limit for the affected bolts, amendment of the RFM to limit the 'never-exceed speed' (Vne) Power-On and to install upper and lower stop brackets on the horizontal stabilizer to prevent a move of the affected bolts from their positions in case of bolt failure.

This AD is still considered an interim action and further AD action may follow.



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

Required as indicated, unless accomplished previously:

Note 1: For the purpose of this AD, a horizontal stabilizer fitting P/N M536A3401102 is hereafter referred to as “affected fitting” in this AD; horizontal stabilizers P/N M551H1B01056, P/N M551H1D01056, P/N M551H1F01056, P/N M551H1G01056, P/N M551H1H01056, P/N M551H1A01056, P/N M551H1C01056, and P/N M551H1E01056 are hereafter collectively referred to as “affected stabilizer” in this AD; and bolts, P/N M008A5511218, securing the horizontal stabilizer to the tail boom, are hereafter referred to as “affected bolt” in this AD.

Note 2: Airbus Helicopters EC175 Emergency ASB 05A014 Revision 3 is hereafter referred to as “the ASB” in this AD.

For helicopters with s/n 5002 to 5010 inclusive, and s/n 5018, if equipped with an affected stabilizer fitting (see Note 1 of this AD):

**Consumed Service Life Re-calculation:**

- (1) Before next flight after 25 July 2017 [the effective date of EASA AD 2017-0127-E], re-calculate the life accumulated by the affected stabilizer fitting since new in accordance with the instructions of Paragraph 3.B.8 of the ASB.

**Life Limit Implementation / Part Replacement:**

- (2) From the 25 July 2017 [the effective date of EASA AD 2017-0127-E], before the re-calculated service life of the affected stabilizer fitting, determined as required by paragraph (1) of this AD, exceeds the applicable limit as defined in the EC175 B Airworthiness Limitations Section (ALS), replace the affected fitting with a serviceable part in accordance with approved maintenance instructions.

For all helicopters:

**Life Limitation:**

- (3) From the effective date of this AD, before exceeding 200 FH accumulated by an affected bolt since new, replace that affected bolt with a serviceable part in accordance with the instructions of paragraph 3.B.7 of the ASB. The first replacement of the affected bolt(s) after the effective date of this AD can be deferred up to 20 FH, if the FH accumulated by the affected bolt(s), on the effective date of this AD, exceeds 180 FH since new.

**One Time Visual Inspection:**

- (4) Within 10 FH after 25 July 2017 [the effective date of EASA AD 2017-0127-E], accomplish a visual inspection of the affected bolts installation in accordance with the instructions of paragraph 3.B.9 of the ASB.

**Determination:**

- (5) Before next flight after 25 July 2017 [the effective date of EASA AD 2017-0127-E], determine the accumulated thickness loss (ATL) in accordance with the instructions of Paragraph 3.B.4 of the ASB.



**Placard installation:**

- (6) Before next flight after the effective date of this AD, fabricate and install, in clear view of the pilots, a placard reducing the 'never-exceed speed' (Vne) Power-On to 145 Knots indicated airspeed (IAS) in accordance with the instructions of Figure 8 of the ASB.

**RFM Amendment:**

- (7) Concurrently with the action as required by paragraph (6) of this AD, amend the RFM by inserting a copy of EC175B RFM TR No. 14A, inform all flight crews, and operate the helicopter accordingly.

**Repetitive Inspections:**

- (8) Within 10 FH after 13 December 2016 [the effective date of EASA AD 2016-0243-E], or since the last inspection as previously required by EASA AD 2016-0243-E, as applicable, and thereafter, at intervals not to exceed 10 FH, visually inspect each affected bolt in accordance with the instructions of Paragraph 3.B.3 of the ASB.
- (9) Within 10 FH after 23 December 2016 [the effective date of EASA AD 2016-0262-E], or since the last inspection as previously required by EASA AD 2016-0262-E, as applicable, and thereafter, at intervals not to exceed 10 FH, visually inspect the attachment area of the affected stabilizer in accordance with the instructions of Paragraph 3.B.3 of the ASB.
- (10) Within 55 FH after 13 December 2016 [the effective date of EASA AD 2016-0243-E], or since the last inspection as previously required by EASA AD 2016-0243-E, as applicable, and thereafter, at intervals not to exceed 55 FH, measure and record the tightening torque of the nuts of the affected bolts, including determination of the torque loss in comparison with the value measured during the latest inspection, or the nominal maximum value, as applicable, remove each affected bolt and accomplish a detailed inspection in accordance with the instructions of paragraph 3.B.4 of the ASB.
- (11) Before the first removal of the affected bolts after the effective date of this AD, as required by paragraph (10) of this AD, mark the position of each bolt in accordance with the instructions of paragraph 3.B.13 of the ASB.
- (12) Within the compliance time defined in Table 1 of this AD, and, thereafter, at intervals not to exceed 200 FH, inspect the affected stabilizer and affected fittings (see Note 1 of this AD) in accordance with the instructions of Paragraph 3.B.6 of the ASB.

Table 1 – Horizontal Stabilizer Inspection (see Note 3 of this AD)

<b>FH Accumulated</b>	<b>Compliance time</b>
Less than 145 FH	Before exceeding 200 FH
145 FH or more	Within 55 FH after the effective date of EASA AD 2017-0127-E

Note 3: Unless specified otherwise, the FH indicated in Table 1 of this AD are those accumulated by the horizontal stabilizer on 25 July 2017 [the effective date of EASA AD 2017-0127-E] since first installation on a helicopter.



**Corrective Action(s):**

- (13) If, during any inspection as required by paragraph (4), (8) or (10) of this AD, any bolt is found broken or, if during any inspection as required by paragraph (10), the loss of torque is more than 20%, before next flight, measure the clearance between the affected horizontal stabilizer and its fitting and determine the ATL in accordance with the instructions of Paragraph 3.B.4 of the ASB.
- (14) If, during any inspection as required by paragraph (4), any bolt is found damaged, before next flight, replace the damaged bolt(s) with a serviceable one in accordance with the instructions of the ASB. Alternatively, the damaged bolt(s) can be repaired in accordance with the instructions of the ASB and reinstalled, provided that, within 50 FH after reinstallation, each repaired bolt is replaced with a serviceable part.
- (15) If, during the determination, as required by paragraph (5) or (13) of this AD, as applicable, it is established that the ATL is 0.4 mm or more, within 50 FH after this determination, replace the affected stabilizer with a serviceable part in accordance with the instructions of the ASB.
- (16) If, during any inspection as required by paragraph (8) or (10) of this AD, as applicable, any cracked or any damaged bolt is detected, before next flight, replace both affected bolts with serviceable parts in accordance with the instructions of the ASB.
- (17) If, during any inspection, as required by paragraph (9) or (12) of this AD, as applicable, any damage (as defined in the ASB) to the affected stabilizer or an affected fitting is detected, before next flight, replace each damaged part with a serviceable part in accordance with the instructions of the ASB.

**Bolt Rotation:**

- (18) After an affected bolt accumulates 90 FH since first installation on a helicopter and before exceeding 110 FH, rotate each affected bolt by 90° in accordance with the instructions of paragraph 3.B.14 of the ASB. The first rotation of installed bolt(s) after the effective date of this AD can be deferred up to 20 FH, if the FH accumulated by the affected bolt(s), on the effective date of this AD, exceeds 90 FH since new.

**Credit:**

- (19) Inspections and corrective action(s), accomplished on a helicopter before the effective date of this AD in accordance with the instructions of AH EC175 Emergency ASB 05A014 at original issue, or Revision 1, or Revision 2, as applicable, are acceptable to comply with the initial requirements of paragraphs (1), (4), (5), (8), (9), (10), (12), (13), (14), (15), (16), and (17) of this AD for that helicopter.

**Modification:**

- (20) Within 55 FH after the effective date of this AD, install the upper and lower vertical stop brackets in accordance with the instructions of AH SB No. EC175-55-005.

**Terminating Action:**

- (21) None.



**Reporting:**

(22) If, during any action as required by paragraph (13) of this AD, the clearance between the affected stabilizer and affected fitting is found to exceed the maximum allowable value, as defined in the ASB, or if during any inspection as required by this AD, an affected bolt is found cracked or broken, within 30 days after that finding, report to AH the measured clearance value or the damage of the affected bolt. Using the 'Response Form' of the ASB is an acceptable method to comply with this reporting requirement.

**Parts Installation:**

(23) From the effective date of this AD, installation on a helicopter of an affected stabilizer, affected fitting, or affected bolt (see Note 1 of this AD) is allowed, provided the part is new, or has passed inspection (no defects found) in accordance with the instructions of the ASB, and that, following installation, the part is inspected as required by this AD.

**Ref. Publications:**

AH EC175 ASB 05A014 original issue dated 07 December 2016, or Revision 1 dated 21 December 2016, or Revision 2 dated 20 July 2017, or Revision 3 dated 29 September 2017.

AH EC175 SB No. EC175-55-005 original dated 27 September 2017.

AH RFM TR No. 14A original issue dated 28 September 2017.

EC175 B ALS Revision 7 dated 27 January 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. The results of the safety assessment have indicated the need for immediate publication and notification, without the full consultation process.
3. Enquiries regarding this AD should be referred to the EASA Safety Information Section, Certification Directorate. E-mail: [ADs@easa.europa.eu](mailto:ADs@easa.europa.eu).
4. For any question concerning the technical content of the requirements in this AD, please contact: Airbus Helicopters (Technical Support), Aéroport de Marseille Provence 13725 Marignane Cedex, France, Telephone +33 (0)4 42 85 97 97, Fax +33 (0)4 42 85 99 66, E-mail: Web portal: <https://keycopter.airbushelicopters.com> > Technical Requests Management, or E-mail: [support.technical-airframe.ah@airbus.com](mailto:support.technical-airframe.ah@airbus.com).

