Airworthiness Directive

AD No.: 2018-0113

Issued: 23 May 2018

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:
AIRBUS HELICOPTERS

Type/Model designation(s):
EC175 B helicopters

Effective Date: 06 June 2018

TCDS Number(s): EASA.R.150

Foreign AD: Not applicable

Supersedure: This AD supersedes EASA Emergency AD 2017-0194-E dated 29 September 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).

Definitions:
For the purpose of this AD, the following definitions apply:

The applicable inspection ASB: AH EC175 Emergency Alert Service Bulletin (ASB) 05A014 Revision 4, and Emergency ASB 05A020 original issue.

Affected fitting: Horizontal stabilizer fittings, Part Number (P/N) M536A3401102 (pre-mod) and P/N M536A3401105 (post-mod), as applicable. AH ASB EC175-55A006 refers to these parts as 'horizontal stabilizer bracket'.

Affected bolt: Bolts, P/N M008A5511218 (pre-mod), and P/N M551A1101212 (post-mod), as applicable, attaching the horizontal stabilizer to the tail boom.

Affected stabilizer: Horizontal stabilizers, P/N M551H1B01056, P/N M551H1D01056, P/N M551H1F01056, P/N M551H1G01056, P/N M551H1101056, P/N M551H1A01056, P/N M551H1C01056, and P/N M551H1E01056 (all pre-mod); and P/N M551A1101101 (post-mod), as applicable.

Groups: Group 1 helicopters have pre-mod affected fitting, bolts and stabilizer installed. Group 2 helicopters have post-mod fitting, bolts and stabilizer installed.

Reason:

During a daily inspection of an EC175 B helicopter, a gap was noticed between the affected stabilizer and the affected 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 affected 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.

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

To address this potential unsafe condition, AH issued EC175 Emergency ASB 05A014, providing inspection instructions. Consequently, EASA issued AD 2016-0243-E to require a one-time measurement of the clearance between affected stabilizer and affected fitting, repetitive inspections of affected bolts for integrity and cracks, repetitive measurement of the torque of the related nuts and, depending on findings, accomplishment of applicable corrective action(s).

After that AD was issued, prompted by further analyses, 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 affected stabilizer. Subsequently, occurrences were reported of fretting on the bushings at the interface with the affected fitting, and of damaged bolts. Prompted by these findings, AH issued EC175 ASB 05A014 Revision 2 to provide additional and improved inspection instructions and EASA issued 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 stabilizer, inspection of the contact areas between the affected stabilizer and affected 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. Subsequently, a refined stress analysis and failure assessment concluded that reduction of existing service life limits, additional maintenance tasks and flight limitation(s) were necessary. Prompted by these developments, AH issued EC175 Emergency ASB 05A014 Revision 3, Service Bulletin (SB) EC175-55-005 and a Temporary Revision (TR) to the EC175 B Rotorcraft Flight Manual (RFM) to provide those additional instructions. Consequently, EASA issued AD 2017-0194-E, retaining the requirements of EASA AD 2017-0127-E, which was superseded, and additionally required a reduction of the 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 affected stabilizer to prevent a move of the affected bolts from their positions in case of bolt failure.

Since EASA AD 2017-0194-E was issued, AH developed modification (mod) 99A05226-00-M-ECP/05 and mod 99A05435-00-M-ECP/00 that include installation of a new horizontal stabilizer P/N

M551A1101101, new fitting (bracket) P/N M536A3401105, and new attachment bolts, P/N M551A1101212, and published ASB EC175-55A006 to provide modification instructions. AH also issued EC175 ASB 05A014 Revision 4 and EC175 ASB 05A020, to provide separate inspection instructions for pre-mod (Group 1) and post-mod (Group 2) helicopters, respectively.

For the reasons described above, this AD retains the requirements of EASA AD 2017-0194-E, which is superseded, amends the requirements to relate to Group 1 and/or Group 2 helicopters, as applicable, and requires a modification of Group 1 helicopters that constitutes terminating action for the repetitive bolt inspections as required by paragraph (8) of this AD.

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:

For Group 1 helicopters with s/n 5002 to 5010 inclusive, and s/n 5018:

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 of the applicable inspection 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 Group 1 helicopters:

Life Limitation:

(3) From 03 October 2017 [the effective date of EASA AD 2017-0194-E], 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 of the applicable inspection ASB.

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 of the applicable inspection 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 of the applicable inspection ASB.

Placard installation:

(6) Before next flight after 03 October 2017 [the effective date of EASA AD 2017-0194-E], 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 applicable inspection 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, thereafter, operate the helicopter accordingly.

For Group 1 and Group 2 helicopters, as indicated:

Repetitive Inspections:

(8) For Group 1 helicopters: 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 of the applicable inspection ASB.

(9) Within the compliance time specified in Table 1 of this AD, 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 of the applicable inspection ASB.

Table 1 – Stabilizer Inspection

Affected Helicopters	Compliance Time
Group 1	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
Group 2	Within 10 FH after the effective date of this AD

(10) For Group 1 and Group 2 helicopters: Within the compliance time specified in Table 2 of this AD, 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, and, for Group 1 helicopter only, remove each affected bolt and accomplish a detailed inspection, in accordance with the instructions of paragraph 3 of the applicable inspection ASB.

Table 2 – Affected Bolts Torque Measurement / Recording / Inspection

Affected Helicopters	Compliance Time
Group 1	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
Group 2	Within 55 FH after the effective date of this AD

(11) For Group 1 helicopters: Before the first removal of the affected bolts after 03 October 2017 [the effective date of EASA AD 2017-0194-E], 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 applicable inspection ASB.

(12) For Group 1 and Group 2 helicopters: Within the compliance time defined in Table 3 of this AD, as applicable, and, thereafter, at intervals not to exceed 200 FH, inspect the affected stabilizer and affected fittings in accordance with the instructions of Paragraph 3 of the applicable inspection ASB.

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

FH Accumulated	Compliance time
Less than 145 FH	Before exceeding 200 FH
145 FH or more	For Group 1 helicopters: Within 55 FH after 25 July 2017 [the effective date of EASA AD 2017-0127-E], or since the last inspection as previously required by EASA AD 2017-0194-E, as applicable
	For Group 2 helicopters: Within 55 FH after the effective date of this AD

Note 1: Unless specified otherwise, the FH indicated in Table 3 of this AD are those accumulated by the horizontal stabilizer on the effective date of this AD 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, as applicable, 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 of the applicable inspection 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 applicable inspection ASB. Alternatively, the damaged bolt(s) can be repaired in accordance with the instructions of the applicable inspection 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 applicable inspection 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 applicable inspection 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 applicable inspection ASB.

Bolt Rotation:

(18) For Group 1 helicopters: 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 applicable inspection 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 Group 1 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, or Revision 3, 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) For Group 1 helicopters: Within 55 FH after 03 October 2017 [the effective date of EASA AD 2017-0194-E], install the upper and lower vertical stop brackets in accordance with the instructions of AH SB EC175-55-005.

(21) For Group 1 helicopters: Within 6 months after the effective date of this AD, modify the helicopter in accordance with the instructions of AH ASB EC175-55A006.
Prior to modification, visually inspect the attachment area of the affected stabilizer, 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, inspect the affected stabilizer and affected fittings and, depending on findings, accomplish all applicable corrective actions, in accordance with the instructions of Paragraph 3 of the applicable inspection ASB.

Terminating Action:

(22) For Group 1 helicopters: Modification of a helicopter as required by paragraph (21) of this AD cancels the requirements of paragraphs (1) through (7) and paragraphs (11) and (18) of this AD for that helicopter, and constitutes terminating action for the repetitive inspections as required by paragraph (8) of this AD for that helicopter.

(23) For Group 2 helicopters: None.

Reporting:

(24) 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 applicable inspection 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 applicable inspection ASB is an acceptable method to comply with this reporting requirement.

Parts Installation:

(25) For Group 1 helicopters: From 03 October 2017 [the effective date of EASA AD 2017-0194-E], except as required by paragraph (27) of this AD, installation on a helicopter of an affected pre-mod stabilizer, affected pre-mod fitting, or affected pre-mod bolt is allowed, provided the part is new, or has passed an inspection (no defects found) in accordance with the instructions of the applicable inspection ASB, and that, following installation, the part is inspected as required by this AD.

(26) For Group 1 helicopters: From the effective date of this AD, do not install on any helicopter an affected post-mod stabilizer, affected post-mod fitting, or affected post-mod bolt, except when modifying the helicopter as required by paragraph (21) of this AD.

(27) Do not install any affected pre-mod fitting, affected pre-mod bolt or affected pre-mod stabilizer on any helicopter, as required by paragraph (27.1) or (27.2) of this AD, as applicable.

(27.1) For Group 1 helicopters: After modification of a helicopter as required by paragraph (21) of this AD.

(27.2) For Group 2 helicopters: From the effective date of this AD.

Ref. Publications:

Airbus Helicopters 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, or Revision 4 dated 27 March 2018.

Airbus Helicopters EC175 ASB 05A020 original issue dated 27 March 2018.

Airbus Helicopters SB EC175-55-005 original dated 27 September 2017.

Airbus Helicopters ASB EC175-55A006 original dated 27 March 2018.

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

Airbus Helicopters EC175 B ALS Revision 7 dated 27 January 2017.

The use of later approved revisions of the above-mentioned 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 13 April 2018 as PAD 18-053 for consultation until 11 May 2018. 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: 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.