

Airworthiness Directive

AD No.: 2021-0171

Issued: 19 July 2021

Note: This Airworthiness Directive (AD) is issued by EASA, acting in accordance with Regulation (EU) 2018/1139 on behalf of the European Union, its Member States and of the European third countries that participate in the activities of EASA under Article 129 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 (EU) 2018/1139, Article 71 exemption].

Design Approval Holder's Name:

AIRBUS HELICOPTERS

Type/Model designation(s):

SA 365, AS 365 and EC 155 helicopters

Effective Date: 02 August 2021

TCDS Number(s): EASA.R.105

Foreign AD: Not applicable

Supersedure: This AD supersedes EASA AD 2017-0125 dated 21 July 2017.

ATA 65 – Tail Rotor – Pitch Control Rod Bearing – Inspection / Replacement

Manufacturer(s):

Airbus Helicopters (AH), formerly Eurocopter (EC), Eurocopter France, Aerospatiale, Sud Aviation

Applicability:

SA 365 N1, AS 365 N2, AS 365 N3, EC 155 B and EC 155 B1 helicopters, all serial numbers.

Definitions:

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

The applicable modification SB: EC AS365 Service Bulletin (SB) 65.00.17 Revision 1, or EC155 SB 65-006 Revision 1, as applicable (introducing EC mod 07 65B58).

The applicable inspection ASB: AH Alert Service Bulletin (ASB) AS365-01.00.67 Revision 6, or ASB EC155-04A014 Revision 6, as applicable.

Affected part: A tail rotor gearbox (TGB) having Part Number (P/N) 365A33 6005 08 (pre-mod 07 65B63).

Serviceable part: A TGB having P/N 365A33 6005 09 (post-mod 07 65B63).

Groups: Group 1 helicopters are those that have an affected part installed. Group 2 helicopters are those that do not have an affected part installed.

ALF: After last flight (ALF) of the day inspection.

Reason:

An occurrence was reported where, during a landing phase, a helicopter lost tail rotor pitch control. Investigation determined that the event had been caused by significant damage to the TGB control rod double bearing.

This condition, if not detected and corrected, could lead to loss of yaw control of the helicopter.

To address this unsafe condition, EC published inspection instructions and EASA issued several ADs, from Emergency AD 2006-0051-E up to AD 2012-0170R2, which required various repetitive and one-time inspections and, depending on finding(s), corrective action(s). That latest AD also required introducing EC mod 07 65B58 (per the applicable modification SB, as defined in this AD), to improve the TGB tolerance between its control shaft and wheel, and to limit the friction loads on the TGB control rod double bearing. After EASA AD 2012-0170R2 was issued, during technical investigation of an AS 365 N3 accident, another damaged TGB control rod double bearing was found. The affected control rod had been subject to repetitive inspections as required by that AD.

Prompted by these findings, AH issued the applicable inspection ASB, as defined in this AD, at original issue, and EASA issued Emergency AD 2016-0097-E (later revised), superseding EASA AD 2012-0170R2, to require repetitive inspections of the TGB oil level and magnetic plug and, depending on findings, the accomplishment of applicable corrective action(s). That AD also required replacement of the double bearing with an improved part (post-mod 07 65B57 P/N 704A33 651-245 or P/N 704A33-651-246) and prohibited (re)installation of certain double bearings (pre-mod 07 65B57 P/N 704A33 651-093 and P/N 704A33-651-104).

After EASA AD 2016-0097R1 was issued, it was determined that the requirement to embody mod 07 65B58, which had been removed with the applicable inspection ASB at original issue, should have been maintained as a pre-requisite for the repetitive inspections and replacements. Consequently, EASA issued AD 2017-0007, retaining the requirements of EASA AD 2016-0097R1, which was superseded, and reinstating that (inadvertently removed) modification requirement.

After EASA AD 2017-0007 was issued, based on further investigation results, AH published the applicable inspection ASB at Revision 3, amending the instructions for inspection and corrective action. EASA issued AD 2017-0125, retaining the requirements of EASA AD 2017-0007, which was superseded, adding repetitive inspections of the magnetic plug after double bearing replacement, and requiring the replacement of the TGB with a serviceable part, as defined in this AD, as a terminating action for the repetitive inspections.

Since that AD was issued, additional testing of the affected TGB concluded that the magnetic plug inspection interval must be further reduced to allow timely detection of an impending TGB bearing failure. AH published the applicable ASB, as defined in this AD, reflecting the new inspection interval, and amending the criteria for corrective action following particle detection.

For the reason described above, this AD retains the requirements of EASA AD 2017-0125, which is superseded, requires inspection of the TGB magnetic plug at reduced intervals and, depending on findings, using new criteria, accomplishment of applicable corrective action(s). This AD also extends



the calendar time limit for replacement of affected parts, and amends the Applicability by removing reference to SA 366 G1 helicopters, for which the Type Certificate has been surrendered. Finally, this AD amends the required action(s) paragraphs to simplify the text by removing reference to old ADs, and introduces editorial changes, not affecting the requirements, to update the AD to current writing standards.

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

Required as indicated, unless accomplished previously:

Modification:

- (1) For Group 1 helicopters which do not have EC/AH mod 07 65B58 or mod 07 65B56 (including mod 07 65B58) embodied: Within 50 flight hours (FH) or 3 months, whichever occurs first after the effective date of this AD, modify the helicopter in accordance with the instructions of the applicable modification SB.

Repetitive TGB Oil Level Inspections:

- (2) For Group 1 helicopters: Within the compliance time, and, thereafter, at intervals not to exceed the values as defined in Table 1 of this AD, as applicable to helicopter model, inspect the oil level in accordance with the instructions of Paragraph 3.B.1 of the applicable inspection ASB.

Table 1 –TGB Oil Level Inspections

Helicopter Models	Compliance Time	Interval (after the last inspection)
SA 365 N1, AS 365 N2 and AS 365 N3	Within 10 FH after the last inspection, or after the effective date of this AD, as applicable	10 FH
EC 155 B and EC 155 B1	Within 15 FH or 7 days, whichever occurs first after the last inspection, or after the effective date of this AD, as applicable	15 FH or 7 days, whichever occurs first

Repetitive TGB Magnetic Plug Inspections:

- (3) For Group 1 helicopters / before replacement of the double bearing, for installation of a part having P/N 704A33 651-245 or P/N 704A33-651-246, as required by paragraph (7) of this AD: During the next ALF after the effective date of this AD, and, thereafter, during each ALF, inspect the magnetic plug in accordance with the instructions of paragraph 3.B.2 of the applicable inspection ASB.
- (4) For Group 1 helicopters / after replacement of the double bearing, as required by paragraph (7) of this AD: Within 25 FH after the last magnetic plug inspection in accordance with the instructions of the applicable inspection ASB, and, thereafter, at intervals not to exceed 10 FH, inspect the magnetic plug in accordance with the instructions of paragraph 3.B.2 of the applicable inspection ASB.



Corrective Action(s):

- (5) If, during any oil level inspection as required by paragraph (2) of this AD, any discrepancy is detected, as defined in the applicable inspection ASB, before next flight, accomplish the applicable corrective action(s) in accordance with the instructions of Paragraph 3.B.1 of the applicable inspection ASB.
- (6) If, during any magnetic plug inspection as required by paragraph (3) or (4) of this AD, as applicable, any discrepancy is detected, before next flight, accomplish the applicable corrective action(s) in accordance with the instructions of paragraph 3.B.2 of the applicable inspection ASB.

Double Bearing Replacements:

- (7) For Group 1 helicopters: Within the compliance time as defined in Table 2 of this AD, as applicable to helicopter configuration, and, thereafter, at intervals not to exceed 500 FH accumulated by the double bearing, replace the double bearing with an improved part, having P/N 704A33-651-245 or P/N 704A33-651-246, in accordance with the instructions of paragraph 1.E.2 of the applicable inspection ASB.

Table 2 – Double Bearing Replacement

Helicopter Configuration	Compliance Time
Pre-mod 07 65B57 (helicopters equipped with double bearing having P/N 704A33 651-093 or P/N 704A33-651-104)	Within 50 FH after the effective date of this AD
Post-mod 07 65B57 (helicopters equipped with double bearing having P/N 704A33 651-245 or P/N 704A33-651-246)	Within 500 FH after the last replacement of the double bearing

Credit:

- (8) Inspections and corrective actions, accomplished on a helicopter before the effective date of this AD in accordance with the instructions of the original issue, or Revision 1, or Revision 2, or Revision 3, or Revision 4, or Revision 5 of the applicable inspection ASB, are acceptable to comply with the initial requirements of paragraphs (2) through (7) of this AD.

TGB Replacement:

- (9) For Group 1 helicopters: Within 41 months after the effective date of this AD, modify the helicopter by replacing the affected part with a serviceable part (to be recorded as mod 07 65B63). Replacement of a TGB in accordance with the instructions of MET task 64-20-01-402 (for AS/SA 365) or AMM Task 65-20-01-061 (for EC 155) is an acceptable method to comply with this requirement.

Terminating Action:

- (10) Accomplishment of corrective action(s) on a helicopter, as required by paragraph (5) or (6) of this AD, as applicable, does not constitute terminating action for the repetitive inspections as required by paragraphs (2), (3) and (4) of this AD for that helicopter.



- (11) Modification of a helicopter by replacing the TGB double bearing, as required by paragraph (7) of this AD, constitutes terminating action for the repetitive inspections as required by paragraph (3) of this AD for that helicopter.
- (12) Modification of a helicopter by replacing the affected part (TGB) as required by paragraph (9) of this AD constitutes terminating action for the repetitive inspections as required by paragraph (4) of this AD, and for the repetitive double bearing replacements as required by paragraph (7) of this AD, for that helicopter.

Parts Installation:

- (13) For Group 1 helicopters: From the effective date of this AD, do not install on any helicopter a pre-mod 07 65B57 double bearing P/N 704A33-651-093 or P/N 704A33-651-104.
- (14) Do not install (see Note 1 of this AD) an affected part on any helicopter, as required by paragraph (14.1) or (14.2) of this AD, as applicable.
 - (14.1) For Group 1 helicopters: After modification of that helicopter as required by paragraph (9) of this AD.
 - (14.2) For Group 2 helicopters: From the effective date of this AD.

Note 1: Removing a TGB and then re-installing that TGB on the same helicopter during the same maintenance visit does not constitute “install” as specified in paragraph (14) of this AD.

Ref. Publications:

Eurocopter AS365 SB 65.00.17 Revision 1 dated 23 February 2011.

Eurocopter EC155 SB 65-006 Revision 1 dated 23 February 2011.

Airbus Helicopters ASB AS365-01.00.67 original issue dated 04 May 2016, or Revision 1 dated 03 June 2016, or Revision 2 dated 28 October 2016, or Revision 3 dated 20 July 2017, or Revision 4 dated 11 December 2019, or Revision 5 dated 25 March 2020, or Revision 6 dated 14 June 2021.

Airbus Helicopters ASB EC155-04A014 original issue dated 04 May 2016, or Revision 1 dated 03 June 2016, or Revision 2 dated 28 October 2016, or Revision 3 dated 20 July 2017, or Revision 4 dated 11 December 2019, or Revision 5 dated 25 March 2020, or Revision 6 dated 14 June 2021.

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. 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. Information about any failures, malfunctions, defects or other occurrences, which may be similar to the unsafe condition addressed by this AD, and which may occur, or have occurred on a product, part or appliance not affected by this AD, can be reported to the [EU aviation safety reporting system](#). This may include reporting on the same or similar components, other than those covered by the design to which this AD applies, if the same unsafe condition can exist or may develop on an aircraft with those components installed. Such components may be installed under an FAA Parts Manufacturer Approval (PMA), Supplemental Type Certificate (STC) or other modification.
5. 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 (4) 42 85 97 97, Fax: +33 (4) 42 85 99 66, Web portal: <https://airbusworld.helicopters.airbus.com> Technical Requests Management, or E-mail: TechnicalSupport.Helicopters@airbus.com.

REVISED

