



Notification of a proposal to issue an Airworthiness Directive

PAD No.: 16-167

Issued: 07 December 2016

Note: This Proposed Airworthiness Directive (PAD) 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.

In accordance with the EASA Continuing Airworthiness Procedures, the Executive Director is proposing the issuance of an EASA Airworthiness Directive (AD), applicable to the aeronautical product(s) identified below.

All interested persons may send their comments, referencing the PAD Number above, to the e-mail address specified in the 'Remarks' section, prior to the consultation date indicated.

Design Approval Holder's Name:

AIRBUS HELICOPTERS

Type/Model designation(s):

SA 365, AS 365, SA 366 and EC 155 helicopters

Effective Date: [TBD – standard: 14 days after AD issue date]

TCDs Number(s): EASA.R.105

Foreign AD: Not applicable

Supersedure: This AD supersedes EASA AD 2016-0097R1 dated 25 May 2016.

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

Manufacturer(s):

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

Applicability:

SA 365 N1, AS 365 N2, AS 365 N3, SA 366 G1, EC 155 B and EC 155 B1 helicopters, all serial numbers, except those modified in accordance with Airbus Helicopters (AH) modification (mod) 07 65B63.

Reason:

An occurrence was reported of a helicopter losing tail rotor pitch control during a landing phase. Investigation determined that the event had been caused by significant damage to the tail gearbox (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 EASA issued AD 2012-0170 (later revised twice) to require various repetitive and one-time inspections and depending on finding(s), corrective action. That AD also required a modification, depending on the helicopter configuration.



Since EASA AD 2012-0170R2 was issued, during technical investigation of an AS 365 N3 accident, a damaged TGB control rod double bearing was detected. The affected control rod was subject to repetitive inspections as required by EASA AD 2012-0170R2. The investigation is still on-going to identify the root cause of this damage and the reasons why the double bearing degradation was not identified during the required inspections.

Pending the investigation results, Airbus Helicopters (AH) issued Alert Service Bulletin (ASB) No. AS365-01.00.67, ASB No. SA366-01.29 and ASB No. EC155-04A014 and EASA issued Emergency AD 2016-0097-E (later revised), superseding EASA AD 2012-0170R2, to require repetitive inspections of TGB oil level and magnetic chip detector and, depending on findings, the accomplishment of applicable corrective action(s). That AD also required replacement of the double bearing with an improved part and prohibited (re)installation of bearings with Part Number (P/N) 704A33-651-093 or P/N 704A33-651-104.

Since EASA AD 2016-0097R1 was issued, AH revised the applicable inspection ASBs to Revision 2 (see Note 1), specifying that a pre-condition of accomplishment of the inspections and replacements in accordance with these ASBs is modification of the affected helicopter in accordance with AH mod 0765B56 or mod 0765B58. Modification in accordance with Eurocopter AS365 Service Bulletin (SB) 65.00.17, SA366 SB 65.04, or EC155 SB 65-006 (introducing AH mod 0765B58) was originally required by EASA AD 2012-0170R2 to be embodied before 14 September 2011, which led AH not to retain this prerequisite in Revision 1 of ASB No. AS365 01.00.67, ASB No. SA366-01.29 and ASB No. EC155-04A014. However, AH recently considered that the probability, although remote, of helicopters not having mod 0765B56 or mod 0765B58 embodied when AD 2016-0097-E was issued, still exists.

For the reasons described above, this AD retains the requirements of EASA AD 2016-0097R1, which is superseded, but additionally reinstates a previous requirement from EASA AD 2012-0170R2 to embody AH mod 0765B58. This AD also introduces some editorial changes, not affecting the required actions.

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

Required as indicated, unless accomplished previously:

Note 1: Airbus Helicopters Alert Service Bulletin (ASB) No. AS365-01.00.67, ASB No. SA366-01.29 and ASB No. EC155-04A014, currently at Revision 2, are hereafter collectively referred to as 'the applicable inspection ASB' in this AD. Eurocopter AS365 SB 65.00.17, SA366 SB 65.04 and EC155 SB 65-006 (introducing AH mod 0765B58), currently at Revision 1, are hereafter collectively referred to as 'the applicable modification SB' in this AD.

Restatement of a requirement of EASA AD 2012-0170R2:

Modification:

- (1) For all helicopters, except those that embody Eurocopter/AH mod 0765B58 or mod 0765B56 (which includes mod 0765B58) in production: Within 3 calendar months or 300 flight hours (FH), whichever occurs first after 04 June 2011 [the effective date of EASA AD 2011-0105), modify the helicopter in accordance with the instructions of the applicable modification SB.



Restatement of the requirements of EASA AD 2016-0097R1:**Repetitive Inspections:**

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

Table 1 – Initial and Repetitive TGB Oil Level Inspections

Helicopter Model(s)	Compliance Time	
	Initial Inspection (see Note 2 of this AD)	Repetitive Inspection Interval (after the last inspection)
SA 365 N1, AS 365 N2 and AS 365 N3	Within 10 FH	10 FH
SA 366 G1	During the next check after the last flight of the day (ALF)	During each ALF check
EC 155 B and EC 155 B1	Within 15 FH or 7 days, whichever occurs first	15 FH or 7 days, whichever occurs first

Note 2: The compliance time for the initial inspection is after 25 May 2016 [the effective date of EASA AD 2016-0097R1] or since the last inspection as previously required by EASA AD 2016-0097R1, as applicable.

- (3) During the next ALF inspection after 25 May 2016 [the effective date of EASA AD 2016-0097R1], and, thereafter, during each ALF check, inspect the TGB magnetic plug in accordance with the instructions of paragraph 3.B.2 of the applicable ASB.

Corrective Action(s):

- (4) If, during any TGB oil level inspection as required by paragraph (2) of this AD, any discrepancy is detected, as defined in the applicable 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.
- (5) If, during any TGB magnetic plug inspection as required by paragraph (3) of this AD, 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 Replacement:

- (6) Within the compliance time defined in Table 2 or Table 3 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 a serviceable part, P/N 704A33-651-245 or P/N 704A33-651-246, in accordance with the instructions of paragraph 1.E.2.a.3 a) or 1.E.2.a.3 b), as applicable, of the applicable inspection ASB.



Table 2 – Double Bearing Replacement on pre-mod 07 65B57 helicopters (equipped with double bearing with P/N 704A33 651-093 or P/N 704A33-651-104)

FH accumulated by the Double Bearing [on 25 May 2016, the effective date of EASA AD 2016-0097R1]	Compliance Time
335 FH or more	Within 15 FH after 25 May 2016 [the effective date of EASA AD 2016-0097R1]
Less than 335 FH	Before exceeding 350 FH

Table 3 – Double Bearing Replacement on post-mod 07 65B57 helicopters (equipped with double bearing with P/N 704A33 651-245 or P/N 704A33-651-246)

FH accumulated by the Double Bearing [on 25 May 2016, the effective date of EASA AD 2016-0097R1]	Compliance Time
485 FH or more	Within 15 FH after 25 May 2016 [the effective date of EASA AD 2016-0097R1]
Less than 485 FH	Before exceeding 500 FH

- (7) For helicopters in pre-mod 07 65B57 configuration: As an alternative to the replacement requirement of paragraph (6) of this AD, for helicopters equipped with a double bearing which, on 25 May 2016 [the effective date of EASA AD 2016-0097R1], had already accumulated 335 FH or more, within 15 FH after 25 May 2016 [the effective date of EASA AD 2016-0097R1], and, thereafter, at intervals not to exceed 55 FH, inspect the double bearing of the TGB control shaft in accordance with the instructions of paragraph 3.B.3 of the applicable inspection ASB. These inspections allow the bearing replacement, as required by paragraph (6) of this AD, to be deferred until 110 FH after 25 May 2016 [the effective date of EASA AD 2016-0097R1]. If, during any of these inspections, any defects are found, before next flight, accomplish the applicable corrective action(s) in accordance with the instructions of paragraph 3.B.3 of the applicable inspection ASB.
- (8) For helicopters in post-mod 07 65B57 configuration: As an alternative to the **initial** replacement as required by paragraph (6) of this AD, for helicopters equipped with a double bearing which, on 25 May 2016 [the effective date of EASA AD 2016-0097R1], had already accumulated 485 FH or more, within 15 FH after 25 May 2016 [the effective date of EASA AD 2016-0097R1], inspect the double bearing of the TGB control shaft in accordance with the instructions of paragraph 3.B.3 of as the applicable inspection ASB. This inspection allows the initial bearing replacement, as required by paragraph (6) of this AD, to be deferred until 110 FH after 25 May 2016 [the effective date of EASA AD 2016-0097R1]. If, during any of this inspection, any defects are found, before next flight, accomplish the applicable corrective action(s) in accordance with the instructions of paragraph 3.B.3 of the applicable inspection ASB.



Terminating Action:

- (9) Accomplishment of corrective action(s) on a helicopter, as required by paragraph (4) or (5) of this AD, as applicable, does not constitute terminating action for the repetitive inspections as required by paragraph (2) and (3) of this AD for that helicopter.
- (10) Modification of a helicopter by replacing the TGB double bearing, as required by paragraph (6) of this AD, as applicable, constitutes terminating action for the repetitive TGB magnetic plug inspections as required by paragraph (3) of this AD for that helicopter.

Parts Installation:

- (11) From 25 May 2016 [the effective date of EASA AD 2016-0097R1], do not install on any helicopter a pre-mod 07 65B57 double bearing P/N 704A33-651-093 or P/N 704A33-651-104.

Ref. Publications:

Eurocopter AS365 SB 65.00.17 Revision 1 dated 23 February 2011.

Eurocopter SA366 SB 65.04 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 4 May 2016, or Revision 1 dated 03 June 2016, or Revision 2 dated 28 October 2016.

Airbus Helicopters ASB SA366-01.29 original issue dated 4 May 2016, or Revision 1 dated 03 June 2016, or Revision 2 dated 28 October 2016.

Airbus Helicopters ASB EC155-04A014 original issue dated 4 May 2016, or Revision 1 dated 03 June 2016, or Revision 2 dated 28 October 2016.

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

Remarks:

1. This Proposed AD will be closed for consultation on 04 January 2017.
2. Enquiries regarding this PAD should be referred to the EASA Safety Information Section, Certification Directorate. E-mail: ADs@easa.europa.eu.
3. For any question concerning the technical content of the requirements in this PAD, please contact: Airbus Helicopters – Aéroport de Marseille Provence 13725 Marignane Cedex, France; Telephone +33 (4) 42 85 97 97; Fax: +33 (4) 42 85 99 66; E-mail: Directive.technical-support@airbus.com.

