



Airworthiness Directive

AD No.: 2020-0287

Issued: 21 December 2020

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: 04 January 2021

TCDS Number(s): EASA.R.105

Foreign AD: Not applicable

Supersedure: This AD supersedes EASA AD 2020-0212 dated 05 October 2020.

ATA 65 – Tail Rotor Drive – Tail Rotor Drive Flange / Shaft Flexible Coupling – Inspection / Modification

Manufacturer(s):

Airbus Helicopters (AH), formerly Eurocopter, Eurocopter France, Aerospatiale

Applicability:

AS 365 N2, AS 365 N3, SA 365 C1, SA 365 C2, SA 365 C3, SA 365 N and SA 365 N1 helicopters, all serial numbers (s/n) on which AH modification (mod) 07 63B64 has been embodied; and

EC 155 B and EC 155 B1 helicopters, all s/n.

Definitions:

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

The applicable inspection ASB: AH Alert Service Bulletin (ASB) AS365-63.00.18, ASB SA365-65.50 and ASB EC155-63A012, as applicable.

The applicable modification ASB: AH ASB AS365-63.00.19 Revision 1, ASB EC155-63A013 Revision 1, ASB SA365-65.52 Revision 1 and ASB AS365-63.00.26, as applicable.

Groups:

Group 1 are AS 365 N2, AS 365 N3, EC 155 B and EC 155 B1 helicopters, all s/n which were first delivered (after manufacture) before 09 July 2014, and SA 365 N1 helicopters, all s/n, on which AH mod 07 63B64 has been embodied, except those on which AH mod 07 63C81 was embodied in production, or which were modified in service in accordance with the instructions of AH ASB AS365-63.00.19 Revision 1, or ASB EC155-63A013 Revision 1, as applicable.

Group 2 are AS 365 N2, AS 365 N3, EC 155 B and EC 155 B1 helicopters, all s/n which were first delivered (after manufacture) on or after 09 July 2014, and on which AH mod 07 63B64 has been embodied, except those on which AH mod 07 63C81 was embodied in production, or which were modified in service in accordance with the instructions of AH ASB AS365-63.00.19 Revision 1, or ASB EC155-63A013 Revision 1, as applicable.

Group 3 are SA 365 C1, SA 365 C2, SA 365 C3 and SA 365 N helicopters, all s/n, except those which were modified in service in accordance with the instructions of AH ASB SA365-65.52 Revision 1 or ASB AS365-63.00.26 (both ASBs correspond to AH mod 07 63C81 and mod 07 63D01), as applicable.

Group 4 are SA 365 C1, SA 365 C2 and SA 365 C3 helicopters, all s/n, which were modified in service in accordance with the instructions of the original issue of AH ASB SA365-65.52 (AH mod 07 63C81).

Reason:

Several occurrences have been reported of loss of tightening torque of the shur-lok nut, which serves as a retainer of the tail rotor (TR) drive flange of the main gearbox (MGB). Subsequent investigation determined that these events were the result of failure of the shur-lok nut locking function, which is normally ensured by two anti-rotation tabs engaged into two slots at the end of the MGB output shaft pinion.

This condition, if not detected and corrected, could lead to loosening of the shur-lok nut and, ultimately, to complete disengagement of the nut threads, possibly resulting in reduction of TR drive control, rear transmission vibrations and reduced control of the helicopter.

To address this potential unsafe condition, AH issued the applicable inspection ASB to provide inspection instructions and EASA issued AD 2014-0165, superseded by EASA AD 2014-0179 (later revised), to require a one-time inspection of the radial play inside the TR drive flange and the condition of the shur-lok nut and, depending on findings, corrective actions.

EASA also issued AD 2019-0046, applicable to a subset of the helicopter models affected by the requirements of EASA AD 2014-0179R2, to require installation of a rear output stop with 5 spigots on the TR shaft flexible coupling (AH mod 07 63C81, available for in-service helicopters through AH ASB AS365-63.00.19 Revision 1 or ASB EC155-63A013 Revision 1, as applicable).

After that AD was issued, AH reviewed the applicability of mod 07 63C81 (5 spigots) and developed mod 07 63D01 (4 spigots) and issued ASB SA365-65.52 Revision 1 and ASB AS365-63.00.26 to make these mods available for another subset of in-service helicopter models initially excluded from the applicability of EASA AD 2014-0179R2. Consequently, EASA issued AD 2020-0212, retaining the requirements of EASA AD 2014-0179R2 and AD 2019-0046, which were superseded, to require, for

helicopters that were not affected by EASA AD 2019-0046, installation of a rear output stop with 4 or 5 spigots, depending on the front shaft configuration, on the TR shaft flexible coupling.

Since that AD was issued, it was determined that modification of the MGB TR drive flange is also required for AS 365 N2, AS 365 N3, EC 155 B and EC 155 B1 helicopters with AH mod 07 63B64 embodied which were delivered from 09 July 2014 onwards.

For the reason described above, this AD retains the requirements of EASA AD 2020-0212, which is superseded, and expands the Applicability to all AS 365 N2, AS 365 N3, EC 155 B and EC 155 B1 helicopters with AH mod 07 63B64 embodied.

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

Required as indicated, unless accomplished previously:

Inspection:

- (1) For Group 1, Group 3 and Group 4 helicopters: Within 110 flight hours (FH) after 01 August 2014 [the effective date of the original issue of EASA AD 2014-0179], inspect the shur-lok nut of the TR drive flange of the MGB in accordance with the instructions of paragraphs 3.A and 3.B of the applicable inspection ASB.

Corrective Action(s):

- (2) If, during the inspection as required by paragraph (1) of this AD, any discrepancy is detected, as specified in the applicable inspection ASB, before next flight, accomplish the applicable corrective action(s) in accordance with the instructions of the applicable inspection ASB.

Modification:

- (3) Within the compliance time as defined in Table 1 of this AD, modify the MGB TR drive flange in accordance with the instructions of the applicable modification ASB.

Table 1 – MGB TR Drive Flange Modification

Group	Compliance Time
1	Within 600 FH or 12 months, whichever occurs first after 25 March 2019 [the effective date of EASA AD 2019-0046]
2	Within 600 FH or 10 months, whichever occurs first after the effective date of this AD
3	Within 600 FH or 12 months, whichever occurs first after 19 October 2020 [the effective date of EASA AD 2020-0212]

Additional Action:

- (4) For Group 4 helicopters: Within 600 FH or 12 months, whichever occurs first after 19 October 2020 [the effective date of EASA AD 2020-0212], accomplish all the additional modification actions in accordance with the instructions of AH ASB SA365-65.52 at Revision 1.

Credit:

- (5) Modification of a Group 1 or Group 2 helicopter, accomplished before 25 March 2019 [the effective date of EASA AD 2019-0046] in accordance with the instructions of the original issue of AH ASB AS365-63.00.19 or ASB EC155-63A013, as applicable, is an acceptable method to comply with the requirements of paragraph (3) of this AD for that helicopter.

Acceptable Method of Compliance:

- (6) Modification of a helicopter as required by paragraph (3) or (4), or as specified in paragraph (5) of this AD, as applicable, is an acceptable method to comply with the requirements of paragraph (1) of this AD, provided the helicopter remains in that configuration.

Ref. Publications:

AH ASB AS365-63.00.18 original issue dated 09 July 2014, or Revision 1 dated 07 March 2016, or Revision 2 dated 31 January 2019, or Revision 3 dated 22 July 2020.

AH ASB SA365-65.50 original issue dated 09 July 2014, or Revision 1 dated 07 March 2016, or Revision 2 dated 22 July 2020.

AH ASB EC155-63A012 Revision 1 dated 21 July 2014, or Revision 2 dated 07 March 2016.

AH ASB AS365-63.00.19 original issue dated 22 January 2018, or Revision 1 dated 31 January 2019.

AH ASB EC155-63A013 original issue dated 22 January 2018, or Revision 1 dated 31 January 2019.

AH ASB SA365-65.52 original issue dated 22 January 2018, or Revision 1 dated 22 July 2020.

AH ASB AS365-63.00.26 original issue dated 22 July 2020.

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 Programming and Continued Airworthiness 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 (0)4 42 85 97 97, Fax +33 (0)4 42 85 99 66, Web portal: <https://keycopter.airbushelicopters.com> > Technical Requests Management, E-mail: support.technical-dyncomp.ah@airbus.com, and TechnicalSupport.Helicopters@airbus.com.