Airworthiness Directive

AD No.: **2023-0133**

Issued: **05 July 2023**

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 or Annex Vb Part ML.A.301, as applicable, 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 Annex Vb Part ML.A.303, as applicable] 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):
AS 350 and EC 130 helicopters

Effective Date: 19 July 2023

TCDS Number(s): EASA.R.008

Foreign AD: Not applicable

Supersedure: This AD supersedes EASA AD 2017-0059 dated 06 April 2017.

ATA 76 – Engine Controls – Microswitches – Inspection / Modification

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Manufacturer(s):
Airbus Helicopters (AH), formerly Eurocopter, Eurocopter France, Aerospatiale

Applicability:
AS 350 B3 helicopters, all serial numbers (s/n).

EC 130 B4 helicopters, all s/n.

EC 130 T2 helicopters, all s/n.

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

Affected microswitch: Microswitches, having Part Number (P/N) T3933-3.

Affected grip: Pilot twist grip, having P/N 350A27-3200-0802, or P/N 350A27-3200-0901, or P/N 350A27-3200-0902, or P/N 350A27-3200-0904, or P/N 350A27-3200-0951, or P/N 350A27-3200-1004, or P/N 350A27-5209-04, or P/N 350A27-5209-0401, or P/N 350A27-5209-06.

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Serviceable assembly: Engine power control assemblies, having P/N 350A08-8756-0071 (for AS 350 B3 helicopters) or P/N 350A08-8757-0071 (for EC 130 helicopters), which include the support plate assembly P/N 350A27-5627-00 containing the microswitches 53Ka, 53Kb and 65K.

The ASB: AH AS350 Emergency Alert Service Bulletins (ASB) 05.00.61 Revision 3, AS350 Emergency ASB 05.00.77 Revision 1, EC130 Emergency ASB 05A009 Revision 3 and EC130 Emergency ASB 05A014 Revision 1, as applicable.

The modification ASB: AH ASB AS350-76.00.33 and AH ASB EC130-76A013, as applicable.

Salt-laden atmospheric condition: A condition which exists when a helicopter is ship-based, or based less than 1 km from the coast, or when an offshore flight is conducted at an altitude below 1 000 feet.

Groups: Group 1 helicopters are those that have an affected microswitch installed.
Group 2 helicopters are those that do not have an affected microswitch installed. A helicopter on which AH modification (MOD) 074782 has been embodied in production is a Group 2 helicopter, provided that no affected microswitch has been installed on that helicopter.

Reason:

An occurrence was reported where during troubleshooting analysis, a dormant failure risk was identified for one of the two microswitches, 53Ka or 53Kb, following the introduction of MOD 073261 (AS 350 B3) or MOD 073773 (EC 130 B4).

This condition, if not detected and corrected, could, in case of failure of the other switch, prevent the pilot to switch from "IDLE" to "FLIGHT" mode during training of autorotation landing, which could make it impossible to abort the autorotation and compel the pilot to continue autorotation until touchdown.

To address this potential unsafe condition, EASA issued AD 2009-0256 to require repetitive inspections of the microswitches 53Ka and 53Kb for correct opening and closing and, depending on findings, accomplishment of applicable corrective action(s).

Subsequently, Eurocopter developed a new MOD (074263) and introduced this on the production line, intended, in case of simultaneous failure of microswitches 53Ka and 53Kb, to allow the pilot to recover engine "FLIGHT" mode by operating the twist grip. Eurocopter issued ASB AS350-80.00.09 and ASB EC130-80A005, to provide instructions for installation of that MOD on in-service helicopters. Consequently, EASA issued AD 2013-0061, retaining the requirements of EASA AD 2009-0256, which was superseded, to require that modification, improving the twist grip operational logic and constituting terminating action for the repetitive inspections.

After that AD was issued, an error was found in the modification installation procedure of Eurocopter ASB AS350-80.00.09 and ASB EC130-80A005. As a consequence of this error, helicopters modified in-service in accordance with the instructions of those ASBs were not in conformity with the approved modification design. Additionally, during the accident investigation of an AS 350 B3 helicopter operated offshore, involving engine power loss in flight, it was found that operation of microswitches in the engine "IDLE" / "FLIGHT" control system could be affected by corrosive effects

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of operating in a salt-laden atmosphere, possibly resulting in engine power loss. These effects were not prevented by installation of MOD 074263.

Consequently, EASA issued Emergency AD 2013-0191-E, superseding EASA AD 2013-0061, to require repetitive inspections for corrosion, installation of protection against corrosive environment, testing for insulation and operation of the microswitches in the engine "IDLE" / "FLIGHT" control system and, depending on findings, accomplishment of applicable corrective action(s). Additionally, that AD required in-service helicopters to be modified to install an improved twist grip operational logic (MOD 074263) in conformity with the approved design. That AD also amended the status of MOD 074263, which was no longer considered terminating action for the required repetitive maintenance actions.

After that AD was issued, AH added complementary specifications to the operational procedure, introduced reference to MOD 074699 and extended the applicability of the ASB to helicopters equipped with a SAFRAN (formerly Turboméca) ARRIEL 2D engine. Consequently, EASA issued AD 2017-0052, retaining the requirements of EASA Emergency AD 2013-0191-E, which was superseded, requiring installation of MOD 074699 and expanding the Applicability.

After that AD was issued, errors were discovered in the Applicability, also inadvertently omitting the model EC 130 T2. Consequently, EASA issued AD 2017-0059, retaining the requirements of EASA AD 2017-0052, which was superseded, correcting the Applicability and adjusting certain compliance times.

Since that AD was issued, AH developed MOD 074782, introducing a new engine power control assembly with microswitches 53Ka, 53Kb and 65K, and issued the modification ASB to provide instructions for in-service embodiment of this MOD.

For the reason described above, this AD retains the requirements of EASA AD 2017-0059, which is superseded, and additionally requires installation of a serviceable assembly. This AD also prohibits (re)installation of an affected microswitch on any helicopter.

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

Required as indicated, unless accomplished previously:

Modification (MOD 074263): **For all pre-MOD 074263 helicopters, except those equipped with a SAFRAN ARRIEL 2D engine, as installed on the assembly line**:

(1) For Group 1 helicopters: Within 6 months after 23 August 2013 [the effective date of EASA AD 2013-0191-E], modify the twist grip operational logic in accordance with the instructions of section 3, excluding section 3.B.2.a.2, of Eurocopter ASB AS350-80.00.09 Revision 1, or ASB EC130-80A005 Revision 1, as applicable.

(2) For Group 1 helicopters: For helicopters already modified before 23 August 2013 [the effective date of EASA AD 2013-0191-E] in accordance with the instructions of the original issue of Eurocopter ASB AS350-80.00.09 or ASB EC130-80A005, as applicable, within 6 months after 23 August 2013, modify the twist grip operational logic in accordance with the instructions of section 3, excluding section 3.B.2.a.1, of Eurocopter ASB AS350-80.00.09 Revision 1, or ASB EC130-80A005 Revision 1, as applicable.

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Modification (MOD 074699):

(3) For Group 1 helicopters: Within the compliance time as specified in Table 1 of this AD, as applicable, install MOD 074699, inspect and test the "IDLE" and "FLIGHT" controls on the pilot's and co-pilot's twist grips in accordance with the instructions of section 3 of the ASB.

Table 1 – Modification

Helicopters in Pre-MOD 074699 Configuration	**Compliance Time**
AS 350 B3 (except those with ARRIEL 2D engine) and EC 130 B4	Within 10 flight hours (FH) or 7 days, whichever occurs first after 23 August 2013 [the effective date of EASA AD 2013-0191-E]
AS 350 B3 equipped with ARRIEL 2D engine, and EC 130 T2 helicopters	Within 10 FH or 7 days, whichever occurs first after 13 April 2017 [the effective date of EASA AD 2017-0059]

Repetitive Inspections:

(4) For Group 1 helicopters: Within 330 FH after installation of MOD 074699 (see Note 1 of this AD), or within 30 days after 13 April 2017 [the effective date of EASA AD 2017-0059], whichever occurs later, and, thereafter, at intervals not to exceed the values specified in Table 2 of this AD, inspect and test the "IDLE" and "FLIGHT" controls on the pilot's and co-pilot's twist grips in accordance with the instructions of paragraph 3 of the ASB.

Note 1: The compliance time of paragraph (4) of this AD is since first flight of the helicopter (MOD 074699 installed during manufacture), or after the moment of in-service modification in accordance with the instructions of the ASB, as required by paragraph (3) of this AD, as applicable.

Table 2 – Repetitive Inspections / Tests

Helicopter Operating Conditions (since last inspection/test as required by paragraph (3) or (4) of this AD)	**Interval** (FH or calendar time, whichever occurs first)
For helicopters which operate or have operated in salt-laden atmospheric conditions	330 FH or 6 months
For helicopters which do not operate and have not operated in salt-laden atmospheric conditions	660 FH or 12 months

Credit:

(5) Modification (MOD 074699), test and inspection of a helicopter, accomplished before 13 April 2017 [the effective date of EASA AD 2017-0059] in accordance with the instructions of an earlier issue of the ASB, is an acceptable method to comply with the initial requirements of paragraphs (3) and (4) of this AD for that helicopter.

Corrective Action(s):

(6) If, during any inspection or test as required by paragraph (3) or (4) of this AD, as applicable, discrepancies are detected, before next flight, accomplish the applicable corrective action(s),

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depending on findings, in accordance with the instructions of section 3 of the ASB, or modify the helicopter in accordance with the instructions of the modification ASB.

Modification:

(7) For Group 1 helicopters: Within the compliance times specified in Table 3 of this AD, modify the helicopter by removing each affected microswitch and by installing a serviceable assembly in accordance with the instructions of the modification ASB.

Table 3 – Modification

Helicopter Operating Conditions	Compliance Time
For helicopters which operate or have operated in salt-laden atmospheric conditions	Within 1 320 FH or 26 months, whichever occurs first after the effective date of this AD
For helicopters which do not operate and have not operated in salt-laden atmospheric conditions	Within 2 640 FH or 53 months, whichever occurs first after the effective date of this AD

Terminating Action:

(8) Modification of a Group 1 helicopter in accordance with the instructions of the modification ASB, as specified in paragraph (6) of this AD, or as required by paragraph (7) of this AD, as applicable, constitutes terminating action for the repetitive inspections as required by paragraph (4) of this AD for that helicopter.

Part(s) Installation:

(9) For Group 1 helicopters: From the effective date of this AD, do not install a serviceable assembly on a helicopter, except as specified in paragraph (6) of this AD, or as required by paragraph (7) of this AD.

(10) Do not install on any helicopter an affected microswitch or an affected grip containing an affected microswitch part, as required by paragraph (10.1) or (10.2) of this AD, as applicable.

(10.1) For Group 1 helicopters: After modification of the helicopter in accordance with the instructions of the modification ASB, as specified in paragraph (6) of this AD, or as required by paragraph (7) of this AD.

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

Ref. Publications:

Eurocopter AS350 Emergency ASB 05.00.61 and EC130 Emergency ASB 05A009 (published as single document) original issue dated 16 November 2009, or Revision 1 dated 22 November 2012, or Revision 2 dated 13 August 2013, or AH ASB 05.00.61 and EC130 Emergency ASB 05A009 Revision 3 dated 15 June 2015, or AH ASB 05.00.61 and EC130 Emergency ASB 05A009 Revision 4 dated 17 April 2023.

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AH AS350 Emergency ASB 05.00.77 and EC130 Emergency ASB 05A014 (published as single document) original issue dated 03 February 2015, or Revision 1 dated 15 June 2015, or Revision 2 dated 17 April 2023.

Eurocopter ASB AS350-80.00.09 original issue dated 22 November 2012, and Revision 1 dated 13 August 2013.

Eurocopter ASB EC130-80A005 original issue dated 22 November 2012, and Revision 1 dated 13 August 2013.

AH ASB AS350-76.00.33 original issue dated 17 April 2023.

AH ASB EC130-76A013 original issue dated 17 April 2023.

The use of later approved revisions of the above-mentioned documents (that may be published by Airbus Helicopters, the current design approval holder) 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 11 May 2023 as PAD 23-056 for consultation until 08 June 2023, and re-posted on 16 June 2023 as PAD 23-056R1 for additional consultation until 30 June 2023. The Comment Response Document can be found in the EASA Safety Publications Tool, in the compressed (zipped) file attached to the record for this AD.

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 Customer Support, Telephone +33 (0)4.42.85.97.89, Fax + 33 (0)4.42.85.99.66, E-mail: Airframe.Technical-Support@airbus.com, Keycopter Technical Request Management: TechnicalSupport.Helicopters@airbus.com.

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