Airworthiness Directive

AD No.: **2017-0059**

Issued: **06 April 2017**

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:	Type/Model designation(s):
AIRBUS HELICOPTERS	AS 350 and EC 130 helicopters

Effective Date: 13 April 2017

TCDS Number(s): EASA.R.008

Foreign AD: Not applicable

Supersedure: This AD supersedes EASA AD 2017-0052 dated 24 March 2017.

ATA 76 – Engine Controls – Switches 53Ka, 53Kb and 65K – Inspection / Modification

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Manufacturer(s):
Airbus Helicopters (formerly Eurocopter)

Applicability:
AS 350 B3 helicopters, all serial numbers, if equipped with a Turbomeca ARRIEL 2B1 engine incorporating the two-channel FADEC (modification (MOD) 073254) and embodying MOD 073261 (new twist grip), or if equipped with a Turbomeca ARRIEL 2D engine (MOD 074302).

EC 130 B4 helicopters, all serial numbers, if equipped with a Turbomeca ARRIEL 2B1 engine incorporating the two-channel FADEC and embodying MOD 073773 (new twist grip).

EC 130 T2 helicopters, all serial numbers, if equipped with a Turbomeca ARRIEL 2D engine.

Reason:
During trouble-shooting analysis performed by Eurocopter, a dormant failure risk was identified for one of the two switches, 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, would, in case of failure of the other switch, prevent the pilot to switch from "IDLE" to "FLIGHT" mode during training of autorotation landing, which

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would make aborting the autorotation impossible and compel the pilot to continue autorotation until touchdown.

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

Subsequently, Eurocopter designed a new modification intended, in case of simultaneous failure of switches 53Ka and 53Kb, to recover engine "FLIGHT" mode when the pilot operates the twist grip. Newly built helicopters are fitted with this modification, identified as MOD 074263. Installation of that modification on in-service helicopters was made possible through Eurocopter Alert Service Bulletins (ASB) No. AS350-80.00.09 or ASB No. EC130-80A005, as applicable. Consequently, EASA issued AD 2013-0061, retaining the requirements of EASA AD 2009-0256, which was superseded, to require a modification, improving the twist grip operational logic and constituting terminating action for the repetitive inspections.

After that AD was issued, Eurocopter found an error in the modification installation procedure as presented in Eurocopter ASB No. AS350-80.00.09 and ASB No. 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. The error identified in the ASBs did not affect helicopters with MOD 074263 installed on the assembly line. Additionally, in the course of investigation into causes of a recent accident of an AS 350 B3 helicopter operated offshore, involving engine power loss in flight, it was found that operation of switches in the engine "IDLE" / "FLIGHT" control system could be affected by corrosive effects of operating in a salt-laden atmosphere, possibly resulting in engine power loss. These effects are 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 switches 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 EASA AD 2013-0191-E was issued, following feedback from some operators, Airbus Helicopters added complementary specifications to the operational procedure and introduced, for configuration management, reference to MOD 074699 and extended the applicability to helicopters equipped with a Turbomeca ARRIEL 2D engine. Consequently, EASA issued AD 2017-0052, retaining the requirements of EASA Emergency AD 2013-0191-E, which was superseded, to require installation of MOD 074699 and expanding the Applicability.

Since that AD was issued, errors were discovered in the Applicability, also inadvertently omitting the Model EC 130 T2.

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For the reason described above, this AD retains all requirements from EASA AD 2017-0052, which is superseded, but corrects the Applicability, adjusts certain compliance times, and introduces several editorial changes for clarification and readability.

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 (Turbomeca) ARRIEL 2D engine, as installed on the assembly line:

(1) 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 paragraph 3, excluding paragraph 3.B.2.a.2, of Eurocopter ASB No. AS350-80.00.09 Revision 1, or ASB No. EC130-80A005 Revision 1, as applicable.

(2) 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 No. AS350-80.00.09, or ASB No. EC130-80A005, as applicable, within 6 months after 23 August 2013, modify the twist grip operational logic in accordance with the instructions of paragraph 3, excluding paragraph 3.B.2.a.1, of Eurocopter ASB No. AS350-80.00.09 Revision 1, or ASB No. EC130-80A005 Revision 1, as applicable.

Note 1: Airbus Helicopters AS350 ASB No. 05.00.61 Revision 3, AS350 Emergency ASB No. 05.00.77 Revision 1, EC130 Emergency ASB No. 05A009 Revision 3, and EC130 Emergency ASB No. 05A014 Revision 1, are hereafter collectively referred to as 'the applicable ASB' in this AD.

Modification (MOD 074699):

(3) 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 paragraph 3 of the applicable 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 the effective date of this AD

Repetitive Inspections:

(4) Within 330 FH after installation of MOD 074699 (see Note 2 of this AD), or within 30 days after the effective date of this AD, 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 applicable ASB.

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Note 2: 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 applicable 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** (not to exceed, whichever occurs first)
For helicopters which operate or have operated in salt laden atmospheric conditions (see Note 3 of this AD)	330 FH or 6 months
For helicopters which do not operate and have not operated in salt laden atmospheric conditions (see Note 3 of this AD)	660 FH or 12 months

Note 3: For the purpose of this AD, a salt laden atmospheric condition is defined to exist 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.

Credit:

(5) Modification (MOD 074699), test and inspection of a helicopter, accomplished before the effective date of this AD in accordance with the instructions of an earlier issue of the applicable ASB, is acceptable to comply with the initial requirements of paragraphs (3) and (4) of this AD.

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), depending on findings, in accordance with the instructions of paragraph 3 of the applicable ASB.

Terminating Action:

(7) None.

Ref. Publications:

Eurocopter AS350 Emergency ASB No. 05.00.61 and EC130 Emergency ASB No. 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 Airbus Helicopters ASB No. 05.00.61 and EC130 Emergency ASB No. 05A009 Revision 3 dated 15 June 2015.

Airbus Helicopters AS350 Emergency ASB No. 05.00.77 and EC130 Emergency ASB No. 05A014 (published as single document) original issue dated 03 February 2015, or Revision 1 dated 15 June 2015.

Eurocopter ASB No. AS350-80.00.09 original issue dated 22 November 2012, and Revision 1 dated 13 August 2013.

Eurocopter ASB No. EC130-80A005 original issue dated 22 November 2012, and Revision 1 dated 13 August 2013.

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The use of later approved revisions of these 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. For any question concerning the technical content of the requirements in this AD, please contact: Airbus Helicopters - Aéroport de Marseille Provence 13725 Marignane Cedex, France. Telephone +33 (0) 4 42 85 97 97, Fax +33 (0) 4 42 85 99 66.
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