Airworthiness Directive

AD No.: **2017-0052**

Issued: **24 March 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: 07 April 2017

TCDS Number(s): EASA.R.008

Foreign AD: Not applicable

Supersedure: This AD supersedes EASA Emergency AD 2013-0191-E dated 22 August 2013.

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 (MOD 073254) and embodying MOD 073773 (new twist grip), or if equipped with a Turbomeca ARRIEL 2D engine (MOD 074302).

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 to helicopter type.

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 are not in conformity with the approved modification design. The error identified in the ASBs does 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 has been 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, and 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.

Since that AD was issued, following feedback from some operators, Airbus Helicopters has 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.

For the reasons described above, this AD retains the requirements of EASA Emergency AD 2013-0191-E, which is superseded, requires installation of MOD 074699 and expands the Applicability.

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Required Action(s) and Compliance Time(s):
Required as indicated, unless accomplished previously:

Inspection(s):
(1) Within the compliance time as specified in Table 1 of this AD, as applicable, and, thereafter, at intervals not to exceed the values specified in Table 2 of this AD, inspect, protect 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 Airbus Helicopters AS350 ASB No. 05.00.61 Revision 3, or AS350 Emergency ASB No. 05.00.77 Revision 1, or EC130 Emergency ASB No. 05A009 Revision 3, or EC130 Emergency ASB No. 05A014 Revision 1, as applicable to helicopter model and configuration (hereafter collectively referred to as 'the applicable ASB' in this AD).

Table 1 – Initial Inspection / Test

Helicopter Configuration	**Compliance Time**
Pre-MOD 074699 helicopters	Within 10 flight hours (FH) or 7 days, whichever occurs first after 23 August 2013 [the effective date of EASA AD 2013-0191-E]
Post-MOD 074699 helicopters	Within 14 Days after the effective date of this AD

Table 2 – Repetitive Inspections / Tests

Helicopter Operating Conditions	**Interval** (not to exceed)
For helicopters which operate or have operated in salt laden atmospheric conditions (see Note 1 of this AD) since previous accomplishment of instructions as required by paragraph (1) of this AD	330 FH or 6 months, whichever occurs first
For helicopters which do not operate and have not operated in salt laden atmospheric conditions (see Note 1 of this AD) since previous accomplishment of instructions as required by paragraph (1) of this AD	660 FH or 12 months, whichever occurs first

Note 1: 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.

Corrective Action(s):
(2) If, during any inspection or test as required by paragraph (1) of this AD, 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.

For all helicopters, except those that embody MOD 074263, or those that are equipped with a Turbomeca ARRIEL 2D engine, as installed (MOD 074302) on the assembly line:
(3) 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

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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.

(4) 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 [the effective date of AD 2013-0191-E], 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.

Terminating Action:

(5) None.

Ref. Publications:

Airbus Helicopters AS350 Emergency ASB No. 05.00.61 and EC130 Emergency ASB No. 05A009 Revision 3 dated 15 June 2015 (published as single document).

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

Eurocopter ASB No. AS350-80.00.09 Revision 1 dated 13 August 2013.

Eurocopter ASB No. EC130-80A005 Revision 1 dated 13 August 2013.

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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