Notification of a Proposal to issue an Airworthiness Directive

PAD No.: 25-039

Issued: 28 February 2025

Note: This Proposed Airworthiness Directive (PAD) 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.

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):
EC 175 B helicopters

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

TCDS Number(s): EASA.R.150

Foreign AD: Not applicable

Supersedure: This AD supersedes EASA AD 2022-0121 dated 23 June 2022.

ATA – Rotorcraft Flight Manual – Emergency Procedures Section – Amendment

ATA 42 – Integrated Modular Avionics – Ethernet Network – Inspection / Modification

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Manufacturer(s):
Airbus Helicopters (AH)

Applicability:
AH EC 175 B helicopters, all serial numbers, except those on which AH modification (mod) 99A06639, 99A06640 or 99A06641 has been embodied.

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

The ASB: AH Alert Service Bulletin (ASB) EC175-05-00-0003.

The corrective ASB: AH ASB EC175-46-40-0006.

The modification ASB: AH ASB EC175-88-00-0001.

Maintenance mode test procedure: In accordance with the instructions of section 'Accomplishment Procedure - 4.2' of the ASB.

Operational mode test procedure: In accordance with the instructions of section 'Accomplishment Procedure - 4.4' of the ASB.

Troubleshooting instructions: In accordance with the instructions of the sections 'Accomplishment Procedure - 4.3' and 'Accomplishment Procedure - 4.5' of the ASB.

Operational limitation: Prohibition to operate the helicopter in instrument meteorological conditions (IMC) and night visual meteorological conditions (Night VMC); and installation of a placard in the cockpit in accordance with the instructions of the ASB.

The RFM Emergency Procedure: Rotorcraft Flight Manual (RFM) Emergency Procedure as identified in Appendix 1 of this AD.

Reason:

Occurrences were reported of multiple multi-function display (MFD) failures. Investigations identified design deficiencies in the Helionix Ethernet network management of the integrated modular avionics suite (IMA), which could lead to multiple MFD failures due to certain damage to Ethernet wiring or connections to various avionics equipment.

This condition, if not detected and corrected, could lead to reduced situational awareness of the pilot, possibly resulting in reduced control of the helicopter.

To address this potential unsafe condition, AH issued the ASB, as defined in this AD, providing instructions for periodical checks of certain wiring and the connections of equipment to the Ethernet network on the Helionix avionics. Consequently, EASA issued AD 2022-0143 to require repetitive checks of the functional status of the IMA Ethernet network and, depending on findings, accomplishment of applicable corrective action(s), which may include an operational limitation.

After that AD was issued, AH developed an Emergency Procedure to be applied in case of multiple MDF failures or loss of all MFDs, and issued a Temporary Revision of the RFM, incorporating this Emergency Procedure. Consequently, EASA issued AD 2022-0168, taking over the requirements of EASA AD 2022-0143, which was superseded, to additionally require incorporation of the RFM Emergency Procedure (as defined in this AD) into the applicable RFM.

AH had also issued the modification ASB, as defined in this AD, in order to introduce a protective measure related to an unsafe condition on the management of the engine fire extinguishing capability by the versions of the Helionix avionics suite installed at the time, and consequently, EASA issued AD 2022-0121.

Since those ADs were issued, AH developed modifications for EC 175 B helicopters to address the previously identified deficiencies in the design of the Helionix avionics suite, and issued the corrective ASB, as defined in this AD. This ASB provides instructions for modification of the software of the Helionix aircraft management computers (AMCs) and MFDs.

Accomplishment of the above-mentioned corrective ASB also restores the full capability of the EC 175 B avionics with regard to the management of engine fire extinguishing capability and concurrently requires re-wiring to the engine fire extinguishing bottles.

For the reasons described above, this AD takes over the requirements for EC 175 B helicopters from EASA AD 2022-0168, requiring in addition modification of all EC 175 B helicopters, and it restates the requirements of EASA AD 2022-0121, which is superseded.

Concurrently with the issuance of this AD, EASA AD 2022-0168 is revised to remove EC 175 B helicopters from its applicability.

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

Required as indicated by this AD, unless the action(s) required by this AD have been already accomplished:

Inspection(s):

(1) Within 55 flight hours (FH) after 15 July 2022 [the effective date of EASA AD 2022-0143], and, thereafter, at intervals not to exceed 110 FH, accomplish a check in accordance with the maintenance mode test procedure, and in accordance with the operational mode test procedure, as defined in this AD.

Corrective Action(s):

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

Restatements of the Requirements of EASA AD 2022-0121:

(3) For helicopters on which AH modification (mod) 99A06423 has not been embodied: Within 440 FH or 6 months, whichever occurs first after 07 July 2022 [the effective date of EASA AD 2022-0121], modify the harnesses and connectors as identified in Section 4 (Procedure) of the modification ASB in accordance with the instructions of the modification ASB.

Modification:

(4) Within 30 months after the effective date of this AD, modify the helicopter by replacing or upgrading, as applicable, the (2) Helionix AMCs and (4) MFDs in accordance with the instructions of the ‘Accomplishment Procedure’ of the corrective ASB.

(5) For helicopters that have not yet embodied AH mod 99A05825: Prior to or concurrently with the modification of a helicopter as required by paragraph (4) of this AD, modify that helicopter in accordance with the instructions of AH SB EC175-46-00-0002.

(6) For helicopters that have embodied AH mod 99A05825: Concurrently with the modification of the helicopter as required by paragraph (4) of this AD, reload the software and the primary configuration file(s) (PCF) as specified in AH SB EC175-46-00-0002, in accordance with the instructions of AH SB EC175-46-00-0002.

Additional Maintenance Requirements:

(7) From 15 July 2022 [the effective date of EASA AD 2022-0143], following accomplishment on a helicopter of any maintenance task that includes disconnection and subsequent re-connection of any connector of the Helionix Ethernet network IMA, or following any MFD failure, before next flight, accomplish a check in accordance with the maintenance mode test procedure, and in accordance with the operational mode test procedure, and, depending on findings, accomplish the applicable corrective action(s) in accordance with the troubleshooting instructions.

Operational Limitation:

(8) If, after accomplishment of troubleshooting instructions as required by paragraph (2) or (7) of this AD, as applicable, any discrepancy cannot be removed or corrected, before next flight, implement the operational limitation, as defined in this AD, inform all flight crews and, thereafter, operate the helicopter accordingly.

Alternative Method:

(9) Implementing on a helicopter the operational limitation as specified in paragraph (8) of this AD is an acceptable alternative method to defer compliance with the requirements of the paragraphs (1) and (2) of this AD for that helicopter. Following accomplishment of the checks and corrective action(s), as applicable, as required by the paragraphs (1) and (2) of this AD, the operational limitation can be removed, provided any discrepancy has been removed or corrected, as applicable.

Terminating Action(s):

(10) Modification of a helicopter as required by paragraph (4) of this AD constitutes terminating action for the repetitive inspections as required by paragraph (1) of this AD and cancels the requirements of paragraph (7) of this AD, as applicable, for that helicopter.

(11) Accomplishment on a helicopter of corrective action(s) as required by paragraph (2) of this AD does not constitute terminating action for the repetitive inspections as required by paragraph (1) of this AD for that helicopter.

RFM Amendment:

(12) Within 7 days after 26 August 2022 [the effective date of EASA AD 2022-0168], amend the RFM by incorporating the RFM Emergency Procedure as defined in this AD, inform all flight crews and, thereafter, operate the helicopter accordingly.

(13) Amending the applicable RFM of a helicopter by incorporating a RFM Revision as listed in Table 1 of this AD, as applicable, or a later RFM revision, which includes the same content as the RFM Emergency Procedure, as applicable, is an acceptable method to comply with the requirements of paragraph (12) of this AD for that helicopter.

Table 1 – RFM Revisions

RFM Revisions which incorporate the Emergency Procedure
EC175 B RFM, Basic RFM Edition 2, Temporary Revision 14A EC175 B RFM Edition NGEN, initial issue

Ref. Publications:

AH ASB EC175-05-00-0003 original issue (Issue 001) dated 07 July 2022, or Issue 002 dated 18 February 2025.

AH ASB EC175-46-40-0006 original issue (Issue 001) dated 18 February 2025.

AH ASB EC175-88-00-0001 original issue (Issue 001) dated 23 May 2023.

AH SB EC175-46-00-0002 original issue (Issue 001) dated 14 November 2024.

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

Remarks:

1. This Proposed AD will be closed for consultation on 28 March 2025.

2. Enquiries regarding this PAD should be referred to the EASA Safety Information Section, Certification Directorate. E-mail: ADs@easa.europa.eu.

3. Information about any failures, malfunctions, defects or other occurrences, which may be similar to the unsafe condition addressed by this PAD, and which may occur, or have occurred on a product, part or appliance not affected by this PAD, 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 PAD 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.

4. For any question concerning the technical content of the requirements in this PAD, please contact: Airbus Helicopters (Technical Support), Aéroport de Marseille Provence, 13725 Marignane Cedex, France, Telephone (+33 (0)4 42 859 797, Fax +33 (0)4 42 85 99 66; Web portal: https://airbusworld.helicopters.airbus.com / Technical Requests Management, Telephone +33 (0)4 42 85 97 89, or E-mail: support.technical-airframe.ah@airbus.com.

Appendix 1 – RFM Emergency Procedure

EC 175 B
Loss of all MFD
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Symptoms	CORRECTIVE ACTIONS
MFD FAILURE displayed on all MFD	• ON GROUND: - Engine shutdown. • IN FLIGHT: 1. Aircraft trajectory a. Maintain using IESI and stand-by compass. b. Use AFCS "recovery" (or "go-around"), if necessary. c. Operate aircraft within the approved performance. 2. MFD2 .....Reset (OFF/ON). **CAUTION** **IF THE MFD IS RESTARTED AT NIGHT, THE MFD WILL REBOOT WITH FULL BRIGHTNESS AND MAY DISTURB THE PILOT BRIEFLY. RESTARTING AN MFD DURING CRITICAL FLIGHT PHASES SHALL BE AVOIDED.** - If MFD2 restarts: All functions linked to MFD are recovered. 3. MFD2 .....Maintain in FND format. **LIMIT DURATION OF FLIGHT** **NOTE** **1. If autopilot upper modes were coupled, they may decouple after 10 seconds (indicated by an "autopilot decouple" voice message).** **2. For HTAWS to be available, SVS must be switched off (select FDS). After restarting MFD, it takes 2 minutes before HTAWS is available.** **3. TCAS alerts are lost.**

EC 175 B
Loss of all MFD
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	- If MFD2 does not restarts (all MFD remain off): 3. VMC conditions.....Establish. **LIMIT DURATION OF FLIGHT** **NOTE** **1. If autopilot upper modes were coupled, they may decouple after 10 seconds (indicated by an "autopilot decouple" voice message).** **2. GPS navigation information can be obtained from the FMS.** **3. The following AFCS functions are available:** • **Basic stabilization (attitude hold).** • **AFCS "recovery" (double press on the AP RECOV push-button on the cyclic grip) will engage ALT, IAS, HDG/TRK modes on the current values. After engagement, individual upper modes can be disengaged through the APCP or AP UM OFF push-button on cyclic grip.** • **Go-around mode will be available through the GO AROUND push-button on the collective grip.** • **The AFCS status (engaged upper modes, V/S or FPA, ALT, HDG or TRK, IAS) is visible on the APCP.** • **It is <u>not</u> possible to engage upper modes through the APCP.** • **It is <u>not</u> possible to change the upper mode references through the cyclic/collective beep or rotary buttons.** **4. All vehicle related aural alerts (tones and voice message) remain available.** **5. HTAWS and TCAS aural alerts are lost.** **6. Transponder Mode C (altitude reporting) is lost.** **7. Central Warning Panel (CWP) is still operating.**