



Notification of a Proposal to issue an Airworthiness Directive

PAD No.: 20-169

Issued: 23 October 2020

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):

AS 355 helicopters

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

TCDS Number(s): EASA.R.146

Foreign AD: Not applicable

Supersedure: None

ATA – Rotorcraft Flight Manual – N2 Speed Avoidance Range Limitation – Amendment / Placard – Installation

Manufacturer(s):

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

Applicability:

AS 355 E, AS 355 F, AS 355 F1 and AS 355 F2 helicopters, all serial numbers, if equipped with Rolls-Royce Corporation (formerly Allison) engine model 250-C20F.

Definitions:

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

Affected part: Power Turbine (PT) 3rd stage wheels, having Part Number (P/N) 23065818, indicated as "enhanced wheel"; and PT 3rd stage wheels, having P/N 23065833, indicated as "non-enhanced wheel" in the ASB and the CEB.

The ASB: AH Alert Service Bulletin (ASB) AS355-71.00.21.

The CEB: Rolls-Royce Corporation (RRC) Commercial Engine Bulletin (CEB) A-1400 for 250-C20F and CEB A-72-4095 for 250-C20R engines (published as a single document) Revision 7.



Reason:

A number of fatigue failures have occurred on the affected parts. Investigation results have shown that crack initiation at the hub trailing edge can occur in low-cycle fatigue and progress in high-cycle fatigue up to separation of the blade. RRC determined that detrimental vibrations can occur within a particular range of turbine speeds, below the normal operating range of this helicopter, which are a potential contributing factor to these failures.

This condition, if not corrected, can lead to fatigue failure of affected parts, possibly resulting in loss of engine power, release of debris and damage to the helicopter, with possible loss of control of the helicopter.

To address this potential unsafe condition, RRC issued the CEB, providing the applicable instructions to minimize the risk of power turbine failure and some corrective actions. Consequently, AH issued the ASB, complementing the CEB and providing instructions to update the Normal Procedures Section of the applicable Rotorcraft Flight Manual (RFM) or RFM Supplement (RFMS), and to install a placard (label) on the instrument panel depicting the PT speed range to be avoided.

For the reasons described above, this AD requires to implement an N2 speed range limitation into the applicable RFM or RFMS, and installation of a new placard.

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

Required as indicated, unless accomplished previously:

RFM Update:

- (1) Within 50 flight hours or 30 days, whichever occurs first after effective date of this AD, update the applicable RFM or RFMS in accordance with the appendixes of the ASB, inform all flight crews and, thereafter, operate the helicopter accordingly.

Placard Installation:

- (2) Concurrently with the RFM(S) amendment as required by paragraph (1) of this AD, install a placard on the instrument panel in full view of both pilots, in accordance with the instructions of paragraph 3.B of the ASB.

Ref. Publications:

AH ASB AS355-71.00.21 original issue dated 08 October 2020.

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

RRC Alert CEB A-1400 for 250-C20 series and CEB A-72-4095 for 250-C20R series (published as a single document) Revision 07 dated 10 January 2019.



Remarks:

1. This Proposed AD will be closed for consultation on 20 November 2020.
2. Enquiries regarding this PAD should be referred to the EASA Programming and Continued Airworthiness 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 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.

