



## Notification of a Proposal to issue an Airworthiness Directive

**PAD No.:** 21-135

**Issued:** 14 September 2021

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 155 helicopters

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

**TCDS Number(s):** EASA.R.105

**Foreign AD:** Not applicable

**Supersedure:** None

### ATA – Rotorcraft Flight Manual – Supplements / One-Engine Inoperative Performance Limitations – Amendment

#### Manufacturer(s):

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

#### Applicability:

EC 155 B and EC 155 B1 helicopters, all serial numbers.

#### Definitions:

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

**The RFM NR:** EC 155 B Rotorcraft Flight Manual (RFM) Normal Revision (NR) 22, EC 155 B RFM Supplement 19 NR 2, EC 155 B1 RFM NR 21 and EC 155 B1 RFM Supplement 19 NR 1, as applicable, all with date code 20-50.

#### Reason:

A discrepancy was identified in the RFM of the EC 155 B and EC 155 B1 helicopters which has existed for many years, where rotorcraft stay-up flying capabilities for Category B operation were provided through performance data only, but not as airworthiness limitations depending on the number of passengers on board. Although it was argued that a stay-up flying capability restriction



should be enforced only when locally required, as a possible operational limitation under operational rules, EASA determined that the missing information in the RFM Limitations section was not compliant with the Joint Aviation Requirements (JAR) 29.1, which are the applicable airworthiness standards of the type-certification basis of the affected helicopters.

This condition, if not corrected, could lead to incorrect determination of the stay-up flying capabilities, possibly resulting in reduced control of the helicopter.

Consequently, AH issued the RFM NR, as defined in this AD, to introduce airworthiness limitations to ensure rotorcraft stay-up flying capabilities required by JAR 29.1.

For the reason described above, this AD requires amendment of the RFM.

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

Required as indicated, unless accomplished previously:

#### RFM / Supplement Amendment:

- (1) Within 30 days after the effective date of this AD, amend the Limitation Section of the RFM of the helicopter, as defined in this AD, by inserting a copy of the applicable Appendix of this AD (or its text), as specified in Table 1 of this AD, inform all flight crew and, thereafter, operate the helicopter accordingly.

Table 1 – Applicable RFM Appendices

Helicopter Model / RFM	Appendix
EC 155 B Basic RFM	1
EC 155 B RFM SUP.19 (sand filters installation)	2
EC 155 B1 Basic RFM	3
EC 155 B1 RFM SUP.19 (sand filters installation)	4

- (2) Amending the RFM of a helicopter to incorporate the RFM NR as defined in this AD, or a later approved RFM NR, which includes information of equal effect to that presented in the applicable Appendix of this AD, is an acceptable method to comply with the requirements of paragraph (1) of this AD for that helicopter.

#### Ref. Publications:

None.

#### Remarks:

1. This Proposed AD will be closed for consultation on 28 September 2021.
2. Enquiries regarding this PAD should be referred to the EASA Safety Information Section, Certification Directorate. E-mail: [ADs@easa.europa.eu](mailto: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) at:  
Web portal: <https://keycopter.airbushelicopters.com> Technical Requests Management, or  
E-mail: [support.technical-airframe.ah@airbus.com](mailto:support.technical-airframe.ah@airbus.com), and  
[TechnicalSupport.Helicopters@airbus.com](mailto:TechnicalSupport.Helicopters@airbus.com).



Appendix 1 – EC 155 B Basic RFM – Section 2.2

# 1 WEIGHT LIMITS

- Maximum approved gross weight ..... 4800 kg (10582 lb).
- Maximum Take-Off and landing Weight:  
Depending on outside conditions (altitude and temperature) and on the number of installed passenger seats, the maximum takeoff and landing weight shall be limited as follows:

Aircraft with 9 installed passenger seats or less	Aircraft with 10 installed passenger seats or more
<p>Weight limited by:</p> <p><b>TWIN ENGINE HOVER PERFORMANCE IGE MAXIMUM WEIGHTS</b> (refer to Section 5.1, figure 4) without exceeding 4800 kg (10582 lb)</p>	<p>Weight limited by:</p> <p><b>TWIN ENGINE HOVER PERFORMANCE IGE MAXIMUM WEIGHTS</b> (refer to Section 5.1, figure 4) without exceeding 4800 kg (10582 lb)</p> <p style="text-align: center;"><b>and</b></p> <p><b>TAKEOFF WEIGHTS PERMITTING CLIMB AT 150 ft/min, 1000 ft ABOVE GROUND WITH ONE ENGINE INOPERATIVE</b> (refer to Section 5.1, figure 10) without exceeding 4800 kg (10582 lb)</p>

- Minimum approved gross weight .....OAT ≥ -5°C: 3000 kg (6614 lb),  
-5°C > OAT ≥ -25°C: 3200 kg (7055 lb),  
-25°C > OAT ≥ -40°C: 3400 kg (7496 lb).

**CAUTION**

**THIS PAGE MUST NOT BE REMOVED FROM THE FLIGHT MANUAL (RFM) UNTIL AN ALTERNATIVE RFM REVISION IS APPROVED AND INCORPORATED IN THE FLIGHT MANUAL**



## Appendix 2 – EC 155 B RFM SUP.19 – Section 2

**2 LIMITATIONS**

The limitations specified in the Basic Flight Manual and in the Supplements used remain applicable and are supplemented or modified by the following limitations.

**2.1 PROHIBITED FLIGHT CONDITIONS**

The following are prohibited:

- flight in falling snow,
- switching sand filters on again during takeoff or landing phases following an automatic shutoff,
- simultaneous operation of the cabin heating system and active sand filters in flight.

**2.2 WEIGHT LIMIT**

Depending on outside conditions (altitude and temperature) and on the number of installed passenger seats, the maximum takeoff and landing weight shall be limited as follows:

<b>Aircraft with 9 installed passenger seats or less</b>	<b>Aircraft with 10 installed passenger seats or more</b>
<p>Weight limited by:</p> <p><b>TWIN-ENGINE HOVER PERFORMANCE IGE MAXIMUM WEIGHTS</b></p> <p>With sand filters inactive: Refer to Figures 6A and 6B</p> <p>With sand filters active: Refer to Figures 7A and 7B</p>	<p>Weight limited by:</p> <p><b>TWIN-ENGINE HOVER PERFORMANCE IGE MAXIMUM WEIGHTS</b></p> <p>With sand filters inactive: Refer to Figures 6A and 6B</p> <p>With sand filters active: Refer to Figures 7A and 7B</p> <p style="text-align: center;"><b>and</b></p> <p><b>TAKEOFF WEIGHTS PERMITTING CLIMB AT 150 ft/min, 1000 ft ABOVE GROUND WITH ONE ENGINE INOPERATIVE</b></p> <p>With sand filters inactive: Refer to Figure 16</p> <p>With sand filters active: Refer to Figure 17</p>



## 2.3 LIMITATIONS OF ENGINES (SAND FILTERS ACTIVE)

The FADEC units AUTOMATICALLY reduce Maximum Takeoff Power N1, Maximum Continuous Power N1 and continuous OEI N1 by 0.31% to comply with T4 limits.

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Appendix 3 – EC 155 B1 Basic RFM – Section 2.2

# 1 WEIGHT LIMITS

- Maximum approved gross weight ..... 4920 kg (10846 lb).

**CAUTION**

**USE OF WEIGHT ABOVE 4850 KG (10692 LB) IS SUBJECT TO EMBODIMENT OF ALL EXTREME COLD WEATHER KITS, MOD DESCRIBED IN SECTION 2-3 PAGE 3, AND IS LIMITED TO  $-30^{\circ}\text{C} < \text{OAT} \leq +50^{\circ}\text{C}$ .**

- Maximum Take-Off and landing Weight:  
Depending on outside conditions (altitude and temperature) and on the number of installed passenger seats, the maximum takeoff and landing weight shall be limited as follows:

Aircraft with 9 installed passenger seats or less	Aircraft with 10 installed passenger seats or more
Weight limited by: <b>TWIN ENGINE HOVER PERFORMANCE IGE MAXIMUM WEIGHTS</b> (refer to Section 5.1, figure 4) without exceeding 4920 kg (10846 lb)	Weight limited by: <b>TWIN ENGINE HOVER PERFORMANCE IGE MAXIMUM WEIGHTS</b> (refer to Section 5.1, figure 4) without exceeding 4920 kg (10846 lb) and <b>TAKEOFF WEIGHTS PERMITTING CLIMB AT 150 ft/min, 1000 ft ABOVE GROUND WITH ONE ENGINE INOPERATIVE</b> (refer to Section 5.1, figure 10) without exceeding 4920 kg (10846 lb)

- Minimum approved gross weight .....  
 $\text{OAT} \geq -5^{\circ}\text{C}$ : 3000 kg (6614 lb),  
 $-5^{\circ}\text{C} > \text{OAT} \geq -25^{\circ}\text{C}$ : 3200 kg (7055 lb),  
 $-25^{\circ}\text{C} > \text{OAT} \geq -40^{\circ}\text{C}$ : 3400 kg (7496 lb).
- Maximum gross weight for taxiing .....4950 kg (10913 lb).

## 2 CENTER OF GRAVITY LIMITS

### 2.1 LONGITUDINAL CG POSITION

Figure 1 plots the approved extreme CG positions versus aircraft weight. The CG datum is located 4 m (157.5 in) forward of the main rotor centerline.

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## Appendix 4 – EC 155 B1 RFM SUP.19 – Section 2

**2 LIMITATIONS**

The limitations specified in the Basic Flight Manual and in the Supplements used remain applicable and are supplemented or modified by the following limitations.

**2.1 PROHIBITED FLIGHT CONDITIONS**

The following are prohibited:

- switching sand filters on again during takeoff or landing phases following an automatic shutoff,
- simultaneous operation of the cabin heating system and active sand filters in flight.

**2.2 WEIGHT LIMIT**

Depending on outside conditions (altitude and temperature) and on the number of installed passenger seats, the maximum takeoff and landing weight shall be limited as follows:

<b>Aircraft with 9 installed passenger seats or less</b>	<b>Aircraft with 10 installed passenger seats or more</b>
<p>Weight limited by:</p> <p><b>TWIN-ENGINE HOVER PERFORMANCE IGE MAXIMUM WEIGHTS</b></p> <p>With sand filters inactive: Refer to Figures 7 and 8</p> <p>With sand filters active: Refer to Figures 9 and 10</p>	<p>Weight limited by:</p> <p><b>TWIN-ENGINE HOVER PERFORMANCE IGE MAXIMUM WEIGHTS</b></p> <p>With sand filters inactive: Refer to Figures 7 and 8</p> <p>With sand filters active: Refer to Figures 9 and 10</p> <p style="text-align: center;"><b>and</b></p> <p><b>TAKEOFF WEIGHTS PERMITTING CLIMB AT 150 ft/min, 1000 ft ABOVE GROUND WITH ONE ENGINE INOPERATIVE</b></p> <p>With sand filters inactive: Refer to Figure 19</p> <p>With sand filters active: Refer to Figure 20</p>



## 2.3 LIMITATIONS OF ENGINES (SAND FILTERS ACTIVE)

The FADEC units AUTOMATICALLY reduce Maximum Takeoff Power N1, Maximum Continuous Power N1 and continuous OEI N1 by 0.31% to comply with T4 limits.

**CAUTION**

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