



Civil Aviation Authority
SAFETY NOTICE
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Private and Aerial Work Helicopter Operations – Guidance On Aerodrome Operating Minima For IFR Departures

This Safety Notice contains information that is for guidance and/or awareness.

Recipients are asked to ensure that this Notice is copied to all members of their staff who may have an interest in the information (including any 'in-house' or contracted maintenance organisations and relevant outside contractors).

Applicability:	
Aerodromes:	Not primarily affected
Air Traffic:	Not primarily affected
Airspace:	Not primarily affected
Airworthiness:	Not primarily affected
Flight Operations:	All General Aviation Pilots
Licensed/Unlicensed Personnel:	Not primarily affected

1 Introduction

- 1.1 Any helicopter pilot landing or departing at an aerodrome needs to ensure that the site is suitable and that the prevailing weather conditions at the site are adequate to carry out all normal and emergency procedures. Whether a field site or a licensed facility, the aerodrome of departure will need to provide an environment where the flight can be commenced and safely continued into the en-route phase. In relation to this, the commander of the aircraft has certain legal and airmanship obligations to fulfil in relation to ensuring that the flight can be safely made whether day or night, under the Visual Flight Rules (VFR) or the Instrument Flight Rules (IFR).
- 1.2 In contrast to helicopter Public Transport operations, private and aerial work flights are allowed more operational flexibility including a greater possible choice of take-off and landing sites. With that flexibility, however, comes the potential for increased risk and a need to exercise high standards of airmanship, decision-making and hazard assessment. This is of particular importance when planning to depart IFR, in Instrument Meteorological Conditions (IMC) or at night, from a site where instrument procedures and aids are not available or established.

2 Scope

- 2.1 The purpose of this Safety Notice is to provide guidance on aerodrome operating minima and the aircraft commander's responsibilities for private helicopter flights departing IFR from aerodromes not equipped for instrument departures.

3 Definitions

- 3.1 In the context of this Safety Notice (Interpretation: article 255 of the Air Navigation Order 2009 (ANO)):

'Aerodrome':

- a) *means any area of land or water designed, equipped, set apart or commonly used for affording facilities for the landing and departure of aircraft; and*
- b) *includes any area or space, whether on the ground, on the roof of a building or elsewhere, which is designed, equipped or set apart for affording facilities for the landing and departure of aircraft capable of descending or climbing vertically; but*
- c) *does not include any area, the use of which for affording facilities for the landing and departure of aircraft has been abandoned and has not been resumed;*

'Aerodrome operating minima' (AOM) in relation to the operation of an aircraft at an aerodrome means the cloud ceiling and runway visual range for take-off, and the decision height or minimum descent height, runway visual range and visual reference for landing, which are the minimum for the operation of that aircraft at that aerodrome.

'Runway visual range' (RVR) in relation to a runway means the distance in the direction of take-off or landing over which the runway lights or surface markings may be seen from the touchdown zone as calculated by either human observation or instruments in:

- a) *the vicinity of the touchdown zone; or*
- b) *if this is not reasonably practicable, in the vicinity of the midpoint of the runway,*

and the distance, if any, communicated to the commander of an aircraft by or on behalf of the person in charge of the aerodrome as being the runway visual range must be taken to be the runway visual range for the time being;

4 Aerial Work and Private Aircraft – Aerodrome Operating Minima (AOM)

- 4.1 Article 87 of the ANO 2009 requires that: *the commander of a flying machine must, before take-off, take all reasonable steps so as to be satisfied that it is capable of safely taking off, reaching and maintaining a safe height and making a safe landing at the place of intended destination having regard to:*

- a) *the performance of the flying machine in the conditions to be expected on the intended flight; and*
- b) *any obstructions at the places of departure and intended destination and on the intended route.*

- 4.2 ANO Part 14 Article 109(2) lays down AOM for aerial work and private aircraft:
- an [aerial work or a private aircraft] must not:*
- (b) *take off when the relevant runway visual range is less than 150 metres,*
- otherwise than under and in accordance with the terms of an approval to do so granted in accordance with the law of the country in which it is registered.*
- 4.3 ANO Part 14 Article 109(2) strongly implies that RVR distances are used at aerodrome locations that have formal meteorological reporting facilities and a prepared, marked-and-lit runway surface, usually with obstacle-protection. Since the VFR visibility minima for helicopters outside controlled airspace (CAS) is 1,500 metres by day and 3,000 metres by night, departures in any lesser visibility are by definition flights in IMC and are therefore required to be flown under the IFR. Flights operating under IFR inside CAS (Rules of the Air Regulation 2007, Rules 33, 34, 35, 36 and 37) are required to conform to the instrument departure procedures notified for the aerodrome.
- 4.4 Flights outside CAS are restricted to Rules 33 (Minimum height) and 34 (Quadrantal rule and semi-circular rule). Therefore, in the case of an aerodrome that does not have notified procedures, it is imperative for individual aircraft commanders to assess the safe AOM for each site, as they relate to their aircraft.
- 4.5 The UK Aeronautical Information Publication (AIP) www.ais.org.uk gives more detailed guidance on AOM at **AD 1.1**. In establishing the AOM that will apply, full account must be taken of:
- a) *the type and handling characteristics of the aircraft;*
- b) *the composition of the flight crew and their competence and experience;*
- c) *the dimensions and characteristics of the runway which may be selected for use;*
- d) *the adequacy and performance of the available visual and non-visual ground aids;*
- e) *the equipment available on the aircraft for the purpose of navigation and/or control of the flight path, as appropriate, during the take-off, the approach, the flare, the landing, roll-out and missed approach;*
- f) *the obstacles in the approach, and missed approach and climb-out areas required for the execution of contingency procedures and necessary clearance;*
- g) *the obstacle clearance altitude/height for the instrument approach procedures; and*
- h) *the means to determine and report meteorological conditions.*
- 4.6 It is particularly important to take account of the ability, not just to conduct normal procedures, but also to safely carry out 'maximum-performance' and emergency procedures, including rejected take-offs, and any other limitations/conditions imposed by inoperative equipment.
- 4.7 ANO 2009 article 16(7) – 'Certificate of Airworthiness to be in Force' requires that an aircraft registered in the United Kingdom with an EASA certificate of airworthiness must not fly otherwise than in accordance with any conditions or limitations contained in its flight manual unless otherwise permitted by the CAA. The pilot must ensure that, at a minimum, the AOM at the site are sufficient to meet the implied or stated requirements in the flight manual, taking into account the circumstances of the planned flight. Such flight manual limitations may be stated in various sections, e.g. V_{mini} (instrument flight minimum speed, utilised in complying with minimum limit speed requirements for instrument flight (CS-29), Cat A or B take-offs requiring acceleration to V_y (best rate of climb airspeed) in VMC, etc.

- 4.7 All of these requirements and factors must be interpreted into practical procedures, flight limitations, critical distances and heights/speeds that need to be met at the particular site. In establishing the minima, the pilot will need to make a realistic assessment of his or her own level of ability, training, flying currency and relevant experience in conducting similar flights.

5 Public Transport Criteria Versus Private and Aerial Work Criteria - Guidance

- 5.1 In relation to ANO 2009 article 109, the UK AIP (AD 1.1 'Aerodrome/Heliport availability' paragraph 2.5 'Aerial Work and Private Aircraft') points aerial work and private helicopter operators to refer to the JAR-OPS 3 declared minima (Heliport Operating Minima) requirements. These heliport operating minima are set out in Table 1 of Appendix 1 to JAR-OPS 3.430 and list RVR and visibility requirements for take-off under certain aerodrome and runway conditions. In addition, the forthcoming Acceptable Means of Compliance (AMC) for Air Ops Commercial Air Transport also sets out the RVR and visibility requirements for helicopter take-off operations (AMC2 CAT.OP.MPA.110 'Aerodrome Operating Minima, take-off operations – helicopters'). Despite the differing regulatory requirements for public transport and private/aerial work operations, it is illustrative to note that both of these rule sets specify common AOM operational requirements including (abbreviated):

- Where there is a specific need to see and avoid obstacles on departure and/or for a forced landing, additional conditions (e.g. ceiling) should be specified.
- The commander should not commence take-off unless the weather conditions at the aerodrome of departure are equal to or better than applicable minima for landing at that aerodrome unless a weather-permissible take-off alternate aerodrome is available.
- The take-off minima should be selected to ensure sufficient guidance to control the aircraft in the event of both a rejected take-off in adverse circumstances and a continued take-off after failure of the critical engine.
- For night operations, ground lights should be available to illuminate the runway/Final Approach and Take-Off area (FATO) and any obstacles.
- Helicopters conducting Performance Class (PC) 1 IFR departures at night where there are no (surface) markings require a minimum take-off RVR/visibility (VIS) of 800 metres. PC 2 operations require a minimum take-off RVR/VIS of 800 metres and for the aircraft to remain clear of cloud during the take-off manoeuvre until reaching PC 1 capabilities.

- 5.2 It is important to note that both tables of take-off minima are for onshore heliports with IFR departure procedures. IFR departure procedures are typically pre-surveyed and include flight path obstacle-avoidance protection.

6 The Human Factor

- 6.1 Aircraft commanders are ultimately responsible for the safe conduct of the flight and should develop and exercise their own expertise over all matters concerning the safety of the proposed flight. In addition to their own judgement concerning aviation matters, pilots must quickly learn to resist any undue pressure from persons who may not have adequate aviation knowledge or whose decisions are based on criteria that are not compatible with flight safety. In turn, aircraft owners and passengers should be clear that it will always be necessary to respect the judgement and flight safety decisions made by the aircraft commander. At a private field site, the pilot or crew will often be the only ones in a position to realistically evaluate the situation and decide whether the flight can go ahead. For an aircraft to be utilised to the fullest extent of its capabilities, particularly in the case of IFR or night flight, it must be recognised that initial and ongoing crew competency training is as much a part of that capability as any physical attributes of the aircraft.

- 6.2 The many and varied situations and circumstances of helicopter flight operations will always bring challenges at some point. Many of the factors that steer the decision-making process are not within the control of the aircraft commander, however, he or she must learn to deal with them in a practical manner. These factors come from a variety of sources and arise in a variety of different situations; the aircraft commander must always be mindful that, in the final analysis, the commencement and safe conduct of the flight is his or her responsibility alone.

7 Type Rating Instructors and Examiners

- 7.1 Instructors and examiners are reminded that the content of rotorcraft flight manual IFR supplement and associated limitations must be taught and assessed accordingly as part of type-rating training, skills test, annual proficiency check and, where appropriate, in recurrent or remedial training. Likewise, examiners are reminded that the ANO and UK AIP are essential documents in the provision of critical flight information, reference to which must be made when assessing knowledge during a proficiency check.

8 Summary

- 8.1 The following key points summarise the CAA's accepted guidance for heliport/aerodrome operating minima and the aircraft commander's responsibilities for private helicopter flights departing IFR from aerodromes not equipped for instrument departures:

- The VFR visibility minima for helicopters are 1,500 metres by day and 3,000 metres by night; a departure in any lesser visibility is by definition a flight in IMC and therefore it is required to be flown under IFR.
- Helicopters conducting Performance Class (PC) 1 IFR departures at night where there are no (surface) markings require a minimum take-off RVR/VIS of 800 metres. PC 2 operations require a minimum take-off RVR/VIS of 800 metres and for the aircraft to remain clear of cloud during the take-off manoeuvre until reaching PC 1 capabilities. These minimum night limitations apply at sites that have IFR departure procedures. Where no IFR departure procedures have been established, it is recommended that private and aerial work flights apply the VFR night visibility minima of 3,000 metres for take-off.
- It is particularly important to take account of the ability not just to conduct normal procedures, but also to safely carry out 'maximum-performance' and emergency procedures, including rejected take-offs and any other limitations/conditions imposed by inoperative equipment.
- The pilot must ensure that, at a minimum, the AOM at the site are sufficient to meet the implied or stated requirements in the flight manual, taking into account the circumstances of the planned flight. In establishing the minima, the pilot will need to make a realistic assessment of his or her own level of ability, training and currency and relevant experience in conducting similar flights.
- In addition to the technical and environmental factors affecting the aircraft commander's flight decisions, human factors will also invariably exercise an influence – from within and outside the cockpit. The pilot should learn to recognise these human factors and to develop effective practical methods to overcome their effects.

9 Queries*

- 9.1 Any queries or requests for further guidance as a result of this communication should be sent to FOD.Admin@caa.co.uk.

10 Cancellation

- 10.1 This Safety Notice will remain in force until further notice.