



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 Business and General Aviation Operations
Licensed/Unlicensed Personnel:	All Business and General Aviation Helicopter Pilots, Instructors and Examiners

1 Introduction

1.1 Before flight, the pilot of a helicopter on a private or aerial work flight must be satisfied that the necessary planning has been completed and that:

- the flight can safely be made;
- the helicopter is in every way equipped and serviceable for the intended flight; and
- the helicopter is capable of safely taking off and reaching and maintaining a safe height, having regard to its performance in the conditions to be expected on the intended flight; and any obstructions in the vicinity of the place of departure.

In making this assessment, the pilot must take account of any conditions or restrictions in the helicopter's flight manual and that the prevailing weather conditions at the site are adequate to carry out all normal and emergency procedures.

1.2 In contrast to Commercial Air Transport (CAT) 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 commensurate standards of airmanship, decision-making and hazard assessment. This is of particular importance when planning to depart under the Instrument Flight Rules (IFR) in Instrument Meteorological Conditions (IMC), or at night, from a site where instrument procedures and aids are not available or established. Prior to use, Aerodrome Operating Minima (AOM) should be determined for each location from where a private or aerial work

aircraft is intended to be operated under IFR, using the recognised method of compliance (see paragraph 1.5).

- 1.3 Currently, the regulations governing private and aerial work flights are contained in the Air Navigation Order 2009 (ANO) but most of these operations will soon transition to the European Air Operations Regulation (**EASA Ops**) – Commission Regulation (EU) No. 965/2012. The regulation will apply in the UK from:
 - 25 August 2016 for non-commercial complex motor-powered aircraft – Annex VI, Part-NCC
 - 25 August 2016 for other-than complex non-commercial aircraft – Annex VII, Part-NCO
 - 21 April 2017 for specialised operations (including aerial work) – Annex VIII, Part-SPO
- 1.4 The scope of the European rules is laid down in Regulation (EC) No. 218/2008 (the Basic Regulation (BR)) which includes, in Annex II, the descriptions of those aircraft types that will remain regulated by national legislation; the ANO for the UK. These include historic, research, amateur build and microlight type aircraft.
- 1.5 In the context of this Safety Notice, ANO Article 109 lays down the requirements for AOM, operating minima and the selection of alternate aerodromes. The article refers to the ‘notified method’ for calculating AOM which for these types of operations is contained in the **Aeronautical Information Publication (AIP) AD 1.1** which is the ‘recognised method of compliance’. The AIP directs operators to EASA Ops to establish their AOM using the information in that regulation and this might not be fully appreciated by all operators but will be the established method in the future under the European rules.
- 1.6 This Safety Notice supersedes SN-2014/006.

2 Scope

- 2.1 The purpose of this Safety Notice is to provide best practice and guidance on establishing AOM and highlighting the pilot in command’s responsibilities for private helicopter flights departing under IFR from aerodromes not notified for instrument departures. It is mainly aimed at operations with helicopters capable of IFR flight, currently operating under the ANO, but which will come under EASA Ops in the near future.

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

- 3.1 ANO Article 255 (Interpretation) states:

‘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.

Therefore, in the case of an aerodrome that does not have notified procedures, it is necessary for individual pilots in command to assess the safe AOM for each site, as they relate to their aircraft.

- 3.2 The Standardised European Rules of the Air (**SERA**) (Commission Implementing Regulation (EU) No. 923/2012) lays down at SERA.5001 and SERA.5005 the Visual Flight Rules (VFR) visibility minima for helicopters outside controlled airspace (CAS). This has been prescribed by the UK as 1,500 metres by day and 3,000 metres by night¹; departures in any lesser visibility are therefore by definition flights in IMC and are required to be flown under the IFR. Flights operating under IFR inside CAS are required by SERA.5020 to comply with Section 8 of SERA which details Air Traffic Control Service.

¹ The implementation of SERA Part C is expected to increase this from 3,000 m to 5 km from 18 August 2016.

- 3.3 All IFR flights are required to comply with SERA.5015 (equipment and minimum levels) and those outside CAS, SERA.5025 (cruising levels, communications and position reports).
- 3.4 The UK **Aeronautical Information Publication** (AIP) gives more detailed guidance on AOM at **AD 1.1** and is the notified method that pilots in command of private and aerial work flights should follow. As previously mentioned this points operators to the relevant parts (Part-NCC, NCO or SPO) of EASA Ops the basis of which is summarised below.
- 3.5 When establishing the AOM that will apply, full account must be taken of:
- the type, handling characteristics and Flight Manual limitations of the aircraft;*
 - the composition, competence and experience of the flight crew;*
 - the dimensions and characteristics of the runways and final approach and take-off areas (FATOs) that may be selected for use;*
 - the adequacy and performance of the available visual and non-visual ground aids;*
 - 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;*
 - the obstacles in the approach, the missed approach and climb-out areas necessary for the execution of contingency procedures;*
 - the obstacle clearance altitude/height for the instrument approach procedures;*
 - the means to determine and report meteorological conditions; and*
 - the flight technique to be used during the final approach.*
- 3.6 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.
- 3.7 ANO 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.
- 3.8 To ensure sufficient control of the helicopter and before entering into IMC, the air speed should be above the minimum authorised speed in IMC V_{mini} which is a limitation in the flight manual. Therefore, the lowest speed before entering IMC is the highest of V_{toss} (take-off safety speed) and V_{mini} . As an example, if V_{toss} is 45 kt and V_{mini} 60 kt, the take-off minima will have to include the distance to accelerate to 60 kt and the take-off distance should be increased accordingly.
- 3.9 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.

4 AOM - Guidance

4.1 General:

- (1) Take-off minima should be expressed as visibility (VIS) or RVR limits, taking into account all relevant factors for each aerodrome planned to be used and aircraft characteristics. 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.

- (2) The pilot in command 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.
- (3) When the reported meteorological visibility is below that required for take-off and RVR is not reported, a take-off should only be commenced if the pilot in command can determine that the visibility along the take-off runway/area is equal to or better than the required minimum.
- (4) When no reported meteorological visibility or RVR is available, a take-off should only be commenced if the pilot-in-command can determine that the visual reference along the take-off runway/area is equal to or better than the required minimum.

4.2 Visual reference:

- (1) The take-off minima should be selected to ensure sufficient guidance to control the aircraft in the event of either a rejected take-off or a continued take-off after failure of the critical engine.
- (2) For night operations, ground lights should be available to illuminate the runway/final approach and take-off area (FATO) and any obstacles.

4.3 Required RVR/visibility:

- (1) In all cases where there are no published IFR departure procedures, the pilot in command should operate to take-off minima of 800 m RVR/VIS and remain clear of cloud during the take-off manoeuvre until established in the climb clear of obstacles and at V_y (best rate of climb speed). For night operations, it is recommended that private and aerial work flights apply the VFR night visibility minima of 3,000 m for take-off.
- (2) Any reported meteorological visibility should not be converted to RVR for calculating take-off minima.

5 Use of the Auto-Pilot

- 5.1 Full use should be made of the aircraft auto-pilot (AP) system, if so equipped, but only if crews have been trained and checked in its use in this particular operational context. Crews must be current and familiar with the helicopter's AP functionality and failure modes.
- 5.2 Of particular benefit is the airspeed hold function during the climb and should be used in conjunction with heading or navigation roll modes. Go-around modes are useful in establishing a climb but are designed for go-around rather than take off therefore may have type specific usage issues. Careful attention must be paid to collective power settings if flown in 2 cue/3 axis modes. If available, Altitude Preset/Altitude Acquire function should be used together with an appropriate Radio Altimeter bug policy.

6 The Human Factor

- 6.1 Pilots in command 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 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, 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 will 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 may not always appear to be within the influence of the pilot in command. These factors come from a variety of sources and arise in a variety of different situations; the passengers must always be mindful that, in the final analysis, the commencement and safe conduct of the flight is the responsibility of the pilot in command.

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.
- 7.2 Account must also be taken of the Operational Suitability Document (OSD) and any Training Areas of Special Emphasis relevant to the helicopter type. Pilots must be proficient in the use of the autopilot and emphasis on its operational use should be made during recurrent training and checking. Any inherent feature or protection within the system must be emphasised to ensure its safety benefits are exploited to the full.

8 Summary

- 8.1 The following key points summarise the CAA's accepted guidance for heliport/aerodrome operating minima and the pilot in command's responsibilities for private helicopter flights departing IFR from aerodromes not equipped for instrument departures or arrivals:
- The VFR visibility minima for helicopters are 1,500 m by day and 3,000 m (5 km in future) 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 IFR departures at aerodromes without published IFR procedures should use a minimum take-off RVR/VIS of 800 m and remain clear of cloud during the take-off manoeuvre until established in the climb clear of obstacles and at V_y (best rate of climb speed). For night departures, it is recommended that private and aerial work flights apply the VFR night visibility minima of 3,000 m 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 in command 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 pilot in command'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.
 - Full use should be made of the aircraft auto-pilot system, if so equipped, but only if crews have been trained and checked in its use in this particular operational context.

9 Queries

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

10 Cancellation

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