



CHAPTER 4

FLYING YOUR HELICOPTER

Requirements

General competency and recent experience

General competency requirement (CASR 61.385)

You are only authorised to exercise the privileges of your licence for a class or type rating for the aircraft, including any operational rating or endorsement, if you are competent in operating it to the standards mentioned in the CASR Part 61 MOS, in all of the following areas:

- › operating the aircraft's navigation and operating systems
- › conducting all normal, abnormal and emergency flight procedures for the aircraft
- › applying operating limitations
- › weight and balance requirements
- › applying aircraft performance data, including take-off and landing performance data, for the aircraft.

You may only operate an airborne collision avoidance system if you are competent in its use to the standards mentioned in the CASR Part 61 MOS.

Flight reviews (CASR 61.400)

Similar to aeroplanes, you must undertake a flight review every 2 years to continue to exercise the privileges of your licence. Please refer to Part 61 and related exemption for more details.

Carrying passengers and recency (CASR 61.395)

Similar to aeroplanes, you must undertake 3 take-offs and landings within 90 days, to carry passengers. See [Chapter 1](#) for information regarding carrying of passengers under a Private Pilot Licence (PPL).

Equipment



Equipment listed in this section is limited to the requirements of a Part 91 flight. Pilots operating under CASR Part 133 Air transport and CASR Part 138 should consult the relevant MOS associated to that Part, including the company exposition or operations manual for additional requirements that may apply.

Equipment for day visual flight rules (VFR) flights

(CASR 91 MOS 26.10)

A helicopter flying under day VFR must be fitted with equipment for measuring and displaying the flight information as shown in the following Table.

Table: Requirements for equipment – helicopter VFR flight by day

Flight information	Requirements
Indicated airspeed	No additional requirements.
Pressure altitude	<p>The equipment must:</p> <ul style="list-style-type: none"> › have an adjustable datum scale calibrated in millibars or hPa, and › be calibrated in ft except that if a flight is conducted in a foreign country which measures flight levels (FLs), or altitudes in metres – must be calibrated in metres or fitted with a conversion placard or device.
Magnetic heading	<ul style="list-style-type: none"> › a direct reading magnetic compass, or › both a remote indicating compass and a standby direct reading magnetic compass.
Time	<p>The equipment must display accurate time in hours, minutes and seconds, and be either:</p> <ul style="list-style-type: none"> › fitted to the aircraft, or › worn by, or immediately accessible to, the pilot for the duration of the flight.
Slip	Only for an aerial work operation.
Outside air temperature	Only for aerial work operations from an aerodrome at which ambient temperature is not available from ground-based instruments.



For light sport aircraft see CASR 91 MOS 26.13; for experimental aircraft see MOS 26.15; for certain registered aircraft see MOS 26.16.



The equipment required in the previous table, for light sport or experimental aircraft, can be substituted for equipment which will provide the pilot with the same flight and navigation information. For certain Australian registered aircraft equipment, standards under CASR Part 21 do not apply, where CASA has considered the views of equivalence of the type certifying authority of a recognised country, if the aircraft is fitted with equipment, that provides an equivalent level of safety (see CASR 91 MOS 26.13, MOS 26.15 and MOS 26.16).

Equipment for night VFR flights (CASR 91 MOS 26.11)

A helicopter flying under night VFR must have equipment fitted for measuring and displaying the flight information as shown in the Table below.

A helicopter for a VFR flight at night must also be fitted with:

- › an approved global navigation satellite system (GNSS), or
- › an automatic direction finder (ADF) or a VHF omni-directional radio range (VOR).

If an approved GNSS has automatic barometric aiding options as specified in the standards below, they must be connected:

- › (E)TSO-C129a
- › (E)TSO-C145a
- › (E)TSO-C146a
- › (E)TSO-C196a.

If you are a single pilot, flying a helicopter VFR by night over land or water you must be able to:

- › maintain attitude by using visual external cues from lights on the ground, celestial illumination or by lighting fitted to the helicopter, or
- › the helicopter must be fitted with an automatic pilot system or an automatic stabilisation system.

Table: Requirements for equipment – helicopter VFR flight by night

Flight information	Requirements
Indicated airspeed	No additional requirements
Pressure altitude	<p>The equipment must:</p> <ul style="list-style-type: none"> › have an adjustable datum scale calibrated in millibars or hPa, and › be calibrated in ft except that if a flight is conducted in a foreign country which measures FLs or altitudes in metres – must be calibrated in metres or fitted with a conversion placard or device.
Magnetic heading	<p>The equipment must be either a:</p> <ul style="list-style-type: none"> › a direct reading magnetic compass, or › both a remote indicating compass and a standby direct reading magnetic compass.
Time	<p>The equipment must display accurate time in hours, minutes and seconds, and be either:</p> <ul style="list-style-type: none"> › fitted to the aircraft, or › worn by, or immediately accessible to, the pilot for the duration of the flight.
Slip	No additional requirements
Attitude	The equipment must have a primary power supply and an alternate power supply.

Flight information	Requirements
Stand-by attitude or turn indicator	Not required for agricultural operations. The equipment power supply must be independent of the power source for the attitude information.
Vertical speed	If the helicopter operates onto vessels or platforms at sea by night, the equipment must: <ul style="list-style-type: none"> › be an instantaneous vertical speed indicator (IVSI), or › meet performance requirements for acceleration sensitivity equivalent to an IVSI.
Stabilised heading	Not required for agricultural operations. Note: A gyro-magnetic type of remote indicating compass meets this requirement if it has a primary power supply and an alternate power supply.
Outside air temperature	No additional requirements.

Note: For gyroscopic instruments (if any), equipment that indicates whether the power supply is adequate must be fitted.



The equipment required in the table above, for light sport, experimental, or certain Australian registered aircraft, can be substituted by equipment which will provide the pilot with the same flight and navigation information (see CASR 91 MOS 26.13, MOS 26.15 and MOS 26.16).

Hot fuelling (CASR 91.495 , 91.500, 91.505, 91.510, 91.515)

‘Hot fuelling’ means the fuelling of an aircraft with its engine or engines running.

For flights under the Part 91 rules, hot fuelling is limited to turbine engine aircraft.

Hot fuelling is generally associated with a commercial operation and requires compliance with an operation’s manual and an aircraft flight manual (AFM). Refer to **Part 91 PEG** for further information. For aerial work operations see CASR Part 138, the MOS and associated guidance material.

Special VFR (CASR 91 MOS 2.01)

By day, when visual meteorological conditions (VMC) do not exist, at your request, air traffic control (ATC) may issue you a 'special VFR clearance' in a control area (CTA) or next to the control zone (CTR) for the purpose of entering or leaving the CTR, provided that:

- › the special VFR flight will not unduly delay an instrument flight rules (IFR) flight
- › the flight can be conducted clear of cloud
- › the visibility is not less than 800 m (for helicopters)
- › a helicopter is operated at such a speed that the pilot has adequate opportunity to observe any obstructions or other traffic in sufficient time to avoid collisions.



Upon your request, special VFR is often available at ATC discretion, when you are departing or arriving at a controlled zone into or from class G airspace when you can meet the VMC criteria for helicopters that applies in class G airspace.

Alternate landing sites (CASR 91 MOS 8.08)

For general information regarding alternate requirements for VFR flights day or night, see [Chapter 2](#).

When operating a helicopter under VFR you must provide for a suitable alternate aerodrome when either of the following weather conditions is forecast at the destination:

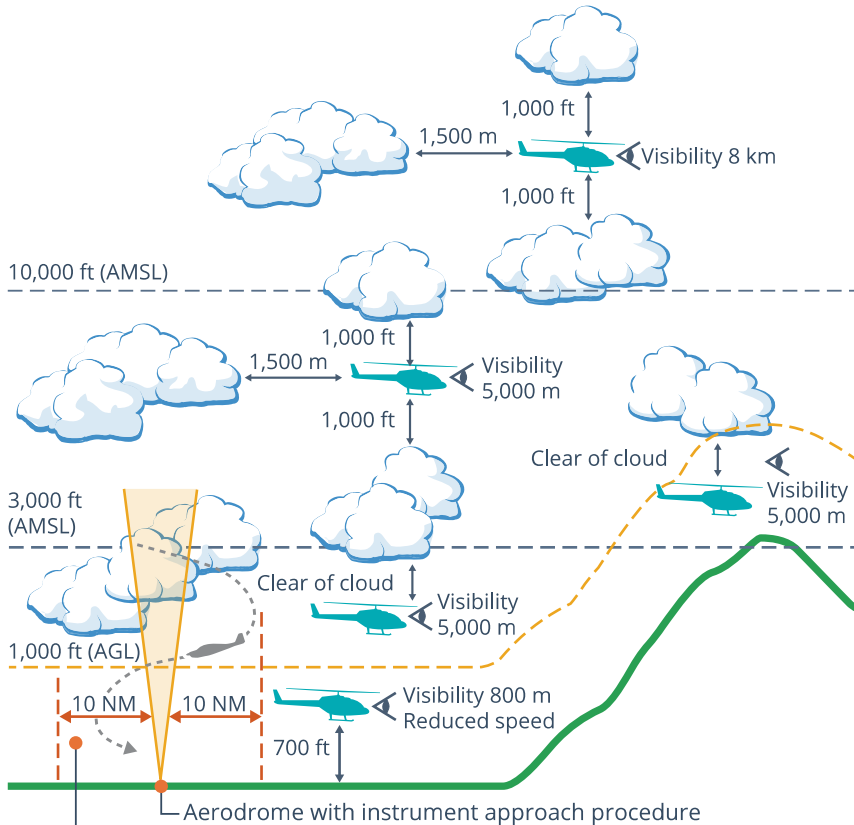
- › By night:
 - › cloud—more than scattered (SCT) below a ceiling of 1,500 ft or
 - › visibility – less than 8 km.
- › By day:
 - › the same as night (above) unless you are in Class G airspace and you are meeting the helicopter VMC requirements for Class G airspace (below), then you can use the following meteorological conditions:
 - cloud—more than SCT below a ceiling of 1,000 ft, or
 - visibility – less than 3,000 m.

Procedures

Visual meteorological conditions

Figure: VMC criteria for helicopter – Class A, C, E and G

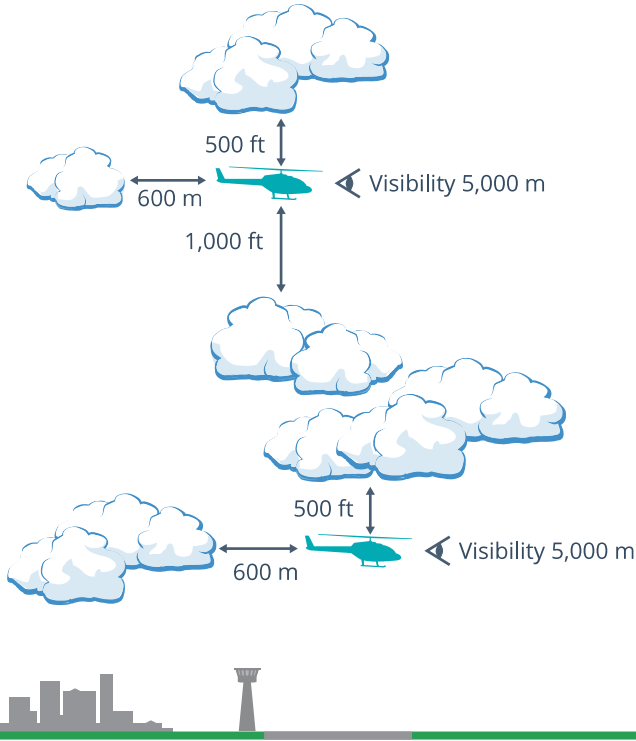
VMC criteria means, the meteorological conditions expressed in terms of flight visibility and the horizontal and vertical distance from cloud. See the following Figures for the application of VMC criteria in various airspace classifications.



Same VMC in controlled airspace but ATC may direct higher conditions, or permit VFR flight in lower conditions.

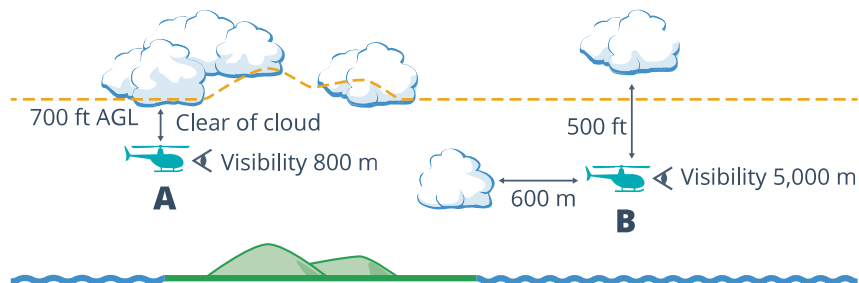
Aircraft may take off or land if flight at the minimum altitude permissible on the proposed flight path can be made in VMC.

Figure: VMC criteria all helicopters for Class D controlled airspace



Class of airspace	Height	Flight visibility	Distance from cloud	Operational requirements
D	All heights	5,000 m (5 km)	600 m horizontal 1,000 ft vertical above cloud 500 ft vertical below cloud	

Figure: VMC criteria for helicopter in Class G non-controlled airspace (MOS Table 2.07)



A. Overland with/without track guidance or overwater with track guidance from navigation system.

B. Overwater without track guidance from navigation system.

Class of airspace	Height	Flight visibility	Distance from cloud	Operational requirements
G	Helicopter A Below 700 ft over land	800 m	Clear of cloud	Applicable only if the helicopter is operated: <ul style="list-style-type: none"> › by day › at a speed that allows the pilot to see obstructions or other traffic in sufficient time to avoid collision, and › if within 10 NM of an aerodrome with an instrument approach, in a way that ensures the flight maintains separation of at least 500 ft vertically from any IFR aircraft that is also within 10 NM of the aerodrome.
	Below 700 ft over water with track guidance from navigation system			
	Helicopter B Below 700 ft over water without track guidance from navigation system	5,000 (5 km)	600 m horizontal and 500 ft vertical	

Aerodromes

The procedures in this section apply to all helicopters operating in the vicinity of aerodromes and in helicopter access corridors and lanes.

Use of aerodromes (CASR 91.410)

You may only take off or land if you can do so safely considering all the circumstances, including the prevailing weather conditions, at one of the following places:

- › a certified aerodrome
- › a military aerodrome
- › a place suitable to take off or land from.



Before operating to, from or at a military aerodrome the operator must obtain permission from the relevant military authority.

The operator and pilot must comply with any conditions of the permission that are not contrary to the civil aviation legislation.

When operating at a joint military/civilian aerodrome, the operator and pilot, must each comply with the AAI, unless those requirements are contrary to the civil aviation legislation.

Safety when operating helicopter on ground (CASR 91.430)

For other than maintenance or maintenance training, only a qualified pilot may operate a helicopter on the ground.

The MOS may prescribe another person who may also operate a helicopter on the ground for other than maintenance or maintenance training provided they secure the helicopter from moving.

Exception: For foreign registered aircraft refer CASA EX 81/21.

Taxiing (AIP ENR1.1)

You should make the maximum use of 'air transit' procedures to expedite traffic movement and flow at an aerodrome. You can use air taxiing procedures as required. However, for wheeled helicopters, where practicable, you are encouraged to ground taxi on prepared surfaces to minimise rotor wash and its effects.

At night you should taxi via routes which meet the physical dimensions and lighting requirements specified in Advisory Circular (AC) 139.R-01.

Take-off/departure (AIP ENR 1.1)

Take-off/departure – controlled aerodrome

At locations within controlled airspace, a helicopter may be granted a take-off clearance or instructed to report airborne, from any area nominated by ATC or yourself, if you have assessed the area as being suitable as a helicopter landing site (HLS).

When taking off or departing you must proceed in accordance with ATC instructions.

Subject to clearance, a turn after take-off may be commenced when you consider that the helicopter is at a safe height to do so.

Unless you have made a request, a take-off clearance will not be issued for a helicopter if the tailwind component exceeds 5 kt.

Prescribed exit 'gates' and associated standard routes and/or altitudes may be provided to facilitate the flow of helicopter traffic. Procedures for their use will be promulgated in En Route Supplement Australia (ERSA). Use of these gates is not mandatory. Helicopters may, subject to an ATC clearance, revert to the standard traffic procedures applicable to aeroplanes. This option may be more appropriate when operating larger helicopters.

At night a helicopter should not take-off from other than a site which conforms with the requirements specified in AC 139.R-01.

Take-off/departure – non-controlled aerodromes

At a non-controlled aerodrome, you may take off from any area which is assessed as being suitable as a HLS.

When you elect to conduct the take-off from outside the flight strip of the runway in use by aeroplanes, the helicopter take-off path must be outside that flight strip.

Before take-off, you are to position the helicopter to the left or right side of the runway in use as appropriate so that the turn after take-off does not cross the extended centre line of that runway. The pre-take-off positioning of the helicopter can be by air transit or taxiing as appropriate.

The turn after take-off onto the desired departure track may be commenced when you consider that the helicopter is at a safe height to do so. If the resultant departure track conflicts with the aeroplane traffic pattern, you should remain at 500 ft above the surface until clear of that circuit pattern. Where this procedure is not practicable on environmental grounds, you are to adopt the standard departure procedure applicable to aeroplanes.

If your helicopter is radio-equipped, you must broadcast your intentions on the appropriate frequency before take-off.

Helicopter access corridors and lanes (AIP ENR 1.1)

When you are flying within promulgated helicopter access corridors and lanes the following procedures apply:

- › The maximum indicated air speed (IAS) is 120 kt.
- › You must operate under VFR, usually not below 500 ft above the surface by day, subject to flight over populous area restrictions and the limitations published in ERSA for authorised corridors by night.
- › ‘See-and-avoid’ procedures must be used.
- › Formation flights are restricted to line astern with the lead aircraft responsible for maintaining separation from other traffic as per the see-and-avoid procedures.
- › A traffic advisory service is available in access corridors.
- › An air traffic service (ATS) Surveillance System advisory service may be given at designated aerodromes.
- › A continuous listening watch on the appropriate ATS frequency in access corridors or broadcast frequency in lanes is mandatory.
- › Two-way operations are conducted with all traffic keeping to the right of the central geographical/topographical feature(s) as detailed in ERSA.
- › The pilot in command has the responsibility to ensure that operations are confined within the boundaries of the corridor or lane.
- › The limits of corridors and lanes must be adhered to, with any transitional altitude requirements maintained within an accuracy of ± 100 ft.
- › A helicopter not confining its operations to an access corridor will require ATC clearance and, while outside the corridor, will be subject to separation standards as applied by ATC.

Note: Subject to environmental noise considerations, the imposition of limitations on helicopters which exceed the noise limits specified in International Civil Aviation Organization (ICAO) Annex 16 Vol 1 may be necessary.

Arrivals (AIP ENR 1.1)

Arrivals – controlled aerodromes

At a controlled aerodrome, prescribed entry gates and associated standard routes and/or altitudes may be provided to facilitate the flow of helicopter traffic. Procedures for their use will be publicised in ERSA. Use of these gates is not mandatory. Subject to the receipt of an ATC clearance, helicopters may, if required, conform to the standard traffic procedures applicable to aeroplanes. This option may be more appropriate when operating larger helicopters.

At locations within controlled airspace, helicopters may be granted a landing clearance or be instructed to report on the ground, as appropriate, at any area nominated by ATC or yourself, if you have assessed the area as being suitable as a HLS.

Unless you have requested one, a landing clearance will not be issued for a helicopter if the tailwind component exceeds 5 kt.

At night you should not land at a site other than one which conforms with the requirements specified in the latest issue of AC 139.R-01.

Arrivals – non-controlled aerodromes

At a non-controlled aerodrome in VMC by day, at your discretion, you do not need to join the circuit via standard aeroplane entry procedures.

As an alternative, you may join the circuit area at 500 ft above the surface from any direction, subject to the normal restrictions of flight over populous areas. You must avoid other circuit traffic and descend to land at any location, once you have assessed the area as being suitable for use as a HLS, provided:

- › the intended landing point is located outside the flight strip of the runway in use
- › the final approach is clear of the extended centreline of the runway in use
- › post-landing positioning of the helicopter is by air transit or by taxiing as appropriate.

If your helicopter is radio-equipped, you must broadcast your intentions on the appropriate frequency as specified in AIP ENR 1.1.

Circuit procedures (AIP ENR 1.1)

At controlled aerodromes any specific operating procedures applicable to the helicopter traffic pattern will be detailed in ERSA.

Either of the following generally applies:

- › Where possible, helicopter circuit traffic will be separated from the aeroplane traffic pattern using contra-direction circuits, outside and parallel to the flight strip of the runway in use, and at a lower altitude than other traffic, but not below 500 ft above the aerodrome elevation, or
- › When separate circuit patterns are not practicable, helicopters may use the same traffic pattern direction as other traffic and will normally operate inside and at a lower altitude than that traffic, but not below 500 ft above the aerodrome elevation.

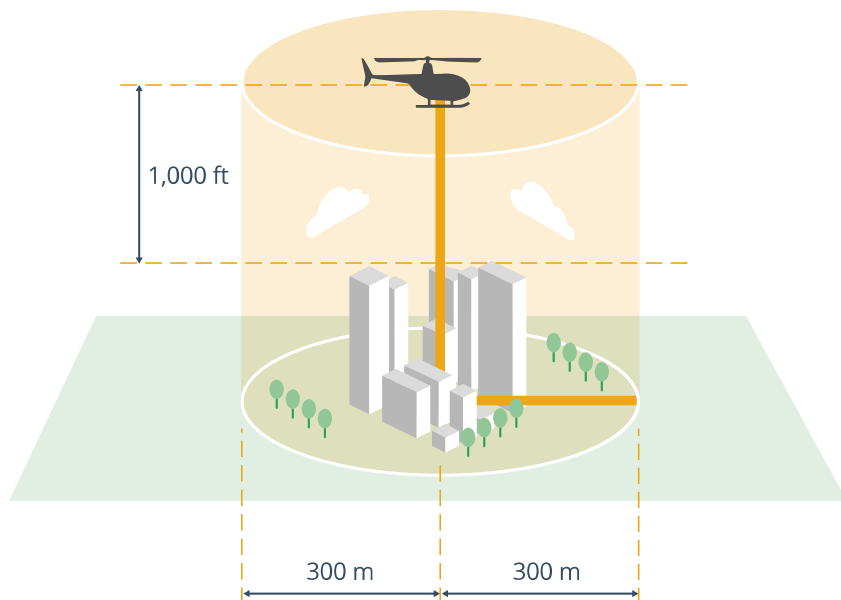
At non-controlled aerodromes the following circuit operating procedures apply:

- › Helicopters may be operated in contra-direction circuits and parallel to the aeroplane traffic pattern at a lower altitude than that traffic, but not below 500 ft above the aerodrome elevation. The landing site associated with the helicopter circuit is to be positioned outside the flight strip of the runway in use so that helicopter circuit traffic does not cross the extended centre line of that runway.
- › If the procedure outlined in the paragraph above is not practicable:
 - › the helicopter circuit pattern should be flown inside and parallel to the aeroplane traffic, and at a lower altitude, but not below 500 ft above the aerodrome elevation. The landing site associated with the helicopter circuit must be positioned outside the flight strip of the runway in use so that helicopter circuit traffic does not cross the extended centre line of that runway, or
 - › the helicopter must follow the standard aeroplane traffic pattern and, in this case, may use the flight strip area of the runway in use, and
- › The pilots of radio-equipped helicopters must broadcast their intentions and listen out for other traffic on the appropriate frequency.

Minimum height (CASR 91.265) (MOS 12.12)

You must not fly a helicopter over a populous area or public gathering below 1,000 ft above the highest feature or obstacle within a horizontal radius of 300 m of the point on the ground or water immediately below the helicopter.

Figure: Minimum height populous areas and public gatherings for helicopter



Exception: This rule does not apply in the following circumstances:

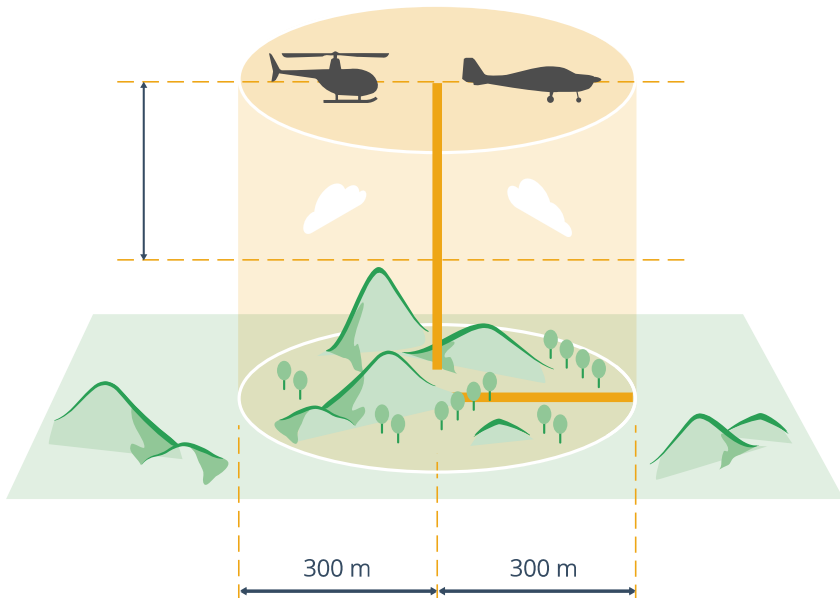
- › taking off or landing:
 - › for take-off – when the point of lift off and climb to the planned cruising level is in accordance with the normal procedures for the aircraft type
 - › for landing – when the landing is conducted in a continuous descent from the cruising level or circuit height to the landing threshold using rates of descent and flight manoeuvres which are normal for the aircraft type
- › engaging in a missed approach
- › practising emergency procedures at an aerodrome-without passengers onboard
- › circuit training at an aerodrome
- › carrying out air display activities for which you hold an approval

- › for a helicopter – hovering, air transiting, air taxiing or ground taxiing at an aerodrome
- › for a helicopter, seaplane or amphibian – flying within an access lane used by aircraft taking off from, or landing at, a particular place, and details of which are published in the Aeronautical Information Publication (AIP) book
- › for a single-engine seaplane or a single-engine amphibian operating over water and within safe gliding distance of open water suitable for a forced landing, and not flown below 1,000 ft above the highest feature or obstacle within a horizontal radius of 300 m of the point on the water immediately below the aeroplane
- › engaging in a procedure to determine the suitability of an aerodrome for a landing.
- › engaging in the validation of a terminal instrument flight procedure that is conducted in accordance with a terminal instrument flight procedure under regulation 173.095 of CASR and the Part 173 MOS. EX81/21

Minimum height rules – other areas (CASR 91.267 MOS 12.02)

When flying over an area that is not a populous area or public gathering (CASR 91.265), you must not fly an aircraft below 500 ft above the highest feature or obstacle within a horizontal radius of 300 m of the point on the ground or water immediately below the aircraft.

Figure: Minimum heights for other areas



Exception: *This rule does not apply in the following circumstances:*

- › *taking off or landing:*
 - › *for take-off – when the point of lift-off and climb to the planned cruising level is in accordance with the normal procedures for the aircraft type*
 - › *for landing – when you are conducting a circling manoeuvre as part of an instrument approach procedure (IAP) using rates of descent and flight manoeuvres which are normal for the aircraft type*
 - › *for landing – when the landing is conducted in a continuous descent from the cruising level or circuit height to the landing threshold using rates of descent and flight manoeuvres which are normal for the aircraft type*
- › *engaging in a missed approach*
- › *not carrying passengers and practicing emergency procedures at an aerodrome*
- › *not carrying passengers and practicing a forced landing procedure with the consent of the person or authority having control over the land or water above which the procedure is carried out*
- › *low-flying training by a CASR Part 141 operator, or a low-flying activity by a CASR Part 142 operator, and the aircraft:*
 - › *is not carrying passengers, and*
 - › *is being flown over an area that, with the consent of the person or authority with control of the area, has been determined by the operator to be suitable as a flight training area and the pilot has surveyed it for obstacles before the flight*
- › *performing training circuits at an aerodrome*
- › *to determine the suitability of an aerodrome for a landing*
- › *carrying out air display activities for which you hold an approval*
- › *all of the following apply:*
 - › *you hold a low-flying authorisation under CASR Part 61, or*
 - › *you hold an approval, provided the point on the ground or water vertically below the aircraft is not within a 150 m of a person, vessel, vehicle, structure or livestock, and you conduct a risk assessment of the area to be flown over.*
- › *for a helicopter – when the helicopter is hovering, air transiting, air taxiing or ground taxiing at an aerodrome*
- › *for a helicopter, seaplane or amphibian – when flying within an access lane used by aircraft taking off from, or landing at, a place, and the details are published in the AIP.*
- › *engaging in the validation of a terminal instrument flight procedure that is conducted in accordance with a terminal instrument flight procedure under regulation 173.095 of CASR and the Part 173 MOS. EX81/21*

Helicopter operations – radio phraseology

Circumstance	Phraseology
Air taxi or air transit for departure and arrival	<p>Pilot:</p> <p>REQUEST AIR TAXI (or AIR TRANSIT or GROUND TAXI) FROM (or VIA) TO (location or routing as appropriate)</p>
	<p>Air traffic control:</p> <p>Air taxi (or air transit or ground taxi) to (or via) (Location, parking position, stand, or routing as appropriate) [caution (dust, loose debris, taxiing light aircraft, personnel, wake turbulence, etc)]</p>

For the complete radio phraseology refer to [Chapter 5 – Radio communication procedures](#).

Over-water flights

Wearing life jackets – helicopter – special provision

(CASR 91 MOS 26.59)

When a helicopter is taking off or landing at an aerodrome in a populous area, and an area of water is the only reasonably available forced landing area, each person (other than an infant) must wear a life jacket, while the helicopter, after take-off or on descent, is below the minimum height at which the helicopter is required to be flown under CASR 91.265.



Determination of the minimum height is set out in CASR 91.265 and in most circumstances, outside access lanes, will be 1,000 ft above the highest obstacle.

A single-engine aircraft flown over water beyond the distance it could reach an area of land suitable for a forced landing following an engine failure, must carry a survival emergency locator transmitter (ELT).

Chapter 4 – Flying your helicopter

For a VFR flight under CASR Part 91, if you intend to fly at a distance from land greater than that which would allow the aircraft to reach land with an engine inoperative, you must submit flight notification as per the AIP procedures. Your flight notification must include a nominated time that search action is required (SARTIME) (CASR 91.240, CASR 91 MOS 09.02).

You are reminded of the requirement to not operate an aircraft in a manner which creates a hazard to a person or property (CASR 91.055).

Further requirements such as the carriage and wearing of lifejackets or carriage of rafts and survival equipment related to flight over water can be found in the **Part 91 PEG**.

Certain CASR Parts relevant to the flights being conducted contain additional requirements. For example, for flights under CASR Part 133, helicopters must be fitted with an approved emergency flotation system (see Chapter 11 of the CASR Part 133 MOS).

The transponder Mode A code of 4000 is to be used in Class G airspace when flying over water and more than 15 NM from the shore (CASR 91 MOS 26.69).

Search and rescue (SAR) alerting (CASR 91.240) (MOS 9.02)

Pilots of VFR flights are required to submit a SARTIME flight notification to ATS, or leave a flight note with a responsible person.

VFR flights may choose to operate on reporting schedules (SKEDs) for the over-water stages of a flight. Schedules may be arranged before commencing the over-water stage and terminate on completion of the crossing. Contact the Airservices Australia Help Desk (details below).

AIRSERVICES AUSTRALIA HELP DESK

t: 1800 801 960

Note: Events that will initiate SAR action are described in AIP-GEN 3.6.