

- (f) The width margins of (b) shall be increased to 18,5 km (10 NM) if the navigational accuracy does not meet at least RNP5.
- (g) Fuel jettisoning is permitted to an extent consistent with reaching the aerodrome with the required fuel reserves, if a safe procedure is used.

CAT.POLA.425 Landing — destination and alternate aerodromes

The landing mass of the aeroplane determined in accordance with CAT.POLA.105(a) shall not exceed the maximum landing mass specified in the AFM for the altitude and, if accounted for in the AFM, the ambient temperature expected for the estimated time of landing at the destination aerodrome and alternate aerodrome.

CAT.POLA.430 Landing — dry runways

- (a) The landing mass of the aeroplane determined in accordance with CAT.POLA.105(a) for the estimated time of landing at the destination aerodrome and any alternate aerodrome shall allow a full stop landing from 50 ft above the threshold within 70 % of the LDA taking into account:
 - (1) the altitude at the aerodrome;
 - (2) not more than 50 % of the headwind component or not less than 150 % of the tailwind component;
 - (3) the type of runway surface; and
 - (4) the slope of the runway in the direction of landing.
- (b) For dispatching the aeroplane it shall be assumed that:
 - (1) the aeroplane will land on the most favourable runway in still air; and
 - (2) the aeroplane will land on the runway most likely to be assigned considering the probable wind speed and direction, the ground handling characteristics of the aeroplane and other conditions such as landing aids and terrain.
- (c) If the operator is unable to comply with (b)(2) for the destination aerodrome, the aeroplane shall only be dispatched if an alternate aerodrome is designated that permits full compliance with (a) and (b).

CAT.POLA.435 Landing — wet and contaminated runways

- (a) When the appropriate weather reports and/or forecasts indicate that the runway at the estimated time of arrival may be wet, the LDA shall be equal to or exceed the required landing distance, determined in accordance with CAT.POLA.430, multiplied by a factor of 1,15.
- (b) When the appropriate weather reports and/or forecasts indicate that the runway at the estimated time of arrival may be contaminated, the landing distance shall not exceed the LDA. The operator shall specify in the operations manual the landing distance data to be applied.

SECTION 2**Helicopters****CHAPTER 1****General requirements****CAT.POL.H.100 Applicability**

- (a) Helicopters shall be operated in accordance with the applicable performance class requirements.
- (b) Helicopters shall be operated in performance class 1:
 - (1) when operated to/from aerodromes or operating sites located in a congested hostile environment, except when operated to/from a public interest site (PIS) in accordance with CAT.POL.H.225; or
 - (2) when having an MOPSC of more than 19, except when operated to/from a helideck in performance class 2 under an approval in accordance with CAT.POL.H.305.

- (c) Unless otherwise prescribed by (b), helicopters that have an MOPSC of 19 or less but more than nine shall be operated in performance class 1 or 2.
- (d) Unless otherwise prescribed by (b), helicopters that have an MOPSC of nine or less shall be operated in performance class 1, 2 or 3.

CAT.POL.H.105 General

- (a) The mass of the helicopter:

- (1) at the start of the take-off; or

- (2) in the event of in-flight replanning, at the point from which the revised operational flight plan applies,

shall not be greater than the mass at which the applicable requirements of this Section can be complied with for the flight to be undertaken, taking into account expected reductions in mass as the flight proceeds and such fuel jettisoning as is provided for in the relevant requirement.

- (b) The approved performance data contained in the AFM shall be used to determine compliance with the requirements of this Section, supplemented as necessary with other data as prescribed in the relevant requirement. The operator shall specify such other data in the operations manual. When applying the factors prescribed in this Section, account may be taken of any operational factors already incorporated in the AFM performance data to avoid double application of factors.

- (c) When showing compliance with the requirements of this Section, account shall be taken of the following parameters:

- (1) mass of the helicopter;

- (2) the helicopter configuration;

- (3) the environmental conditions, in particular:

- (i) pressure altitude and temperature;

- (ii) wind:

- (A) except as provided in (C), for take-off, take-off flight path and landing requirements, accountability for wind shall be no more than 50 % of any reported steady headwind component of 5 kt or more;

- (B) where take-off and landing with a tailwind component is permitted in the AFM, and in all cases for the take-off flight path, not less than 150 % of any reported tailwind component shall be taken into account; and

- (C) where precise wind measuring equipment enables accurate measurement of wind velocity over the point of take-off and landing, wind components in excess of 50 % may be established by the operator, provided that the operator demonstrates to the competent authority that the proximity to the FATO and accuracy enhancements of the wind measuring equipment provide an equivalent level of safety;

- (4) the operating techniques; and

- (5) the operation of any systems that have an adverse effect on performance.

CAT.POL.H.110 Obstacle accountability

- (a) For the purpose of obstacle clearance requirements, an obstacle located beyond the FATO, in the take-off flight path, or the missed approach flight path shall be considered if its lateral distance from the nearest point on the surface below the intended flight path is not further than the following:

- (1) For operations under VFR:

- (i) half of the minimum width defined in the AFM — or, when no width is defined, '0,75 × D', where D is the largest dimension of the helicopter when the rotors are turning;

- (ii) plus, the greater of ' $0,25 \times D$ ' or ' 3 m ';
- (iii) plus:
 - (A) $0,10 \times \text{distance DR}$ for operations under VFR by day; or
 - (B) $0,15 \times \text{distance DR}$ for operations under VFR at night.
- (2) For operations under IFR:
 - (i) ' $1,5 D$ ' or 30 m , whichever is greater, plus:
 - (A) $0,10 \times \text{distance DR}$, for operations under IFR with accurate course guidance;
 - (B) $0,15 \times \text{distance DR}$, for operations under IFR with standard course guidance; or
 - (C) $0,30 \times \text{distance DR}$ for operations under IFR without course guidance.
 - (ii) When considering the missed approach flight path, the divergence of the obstacle accountability area only applies after the end of the take-off distance available.
- (3) For operations with initial take-off conducted visually and converted to IFR/IMC at a transition point, the criteria required in (1) apply up to the transition point, and the criteria required in (2) apply after the transition point. The transition point cannot be located before the end of the take-off distance required for helicopters (TODRH) operating in performance class 1 or before the defined point after take-off (DPATO) for helicopters operating in performance class 2.
- (b) For take-off using a back-up or a lateral transition procedure, for the purpose of obstacle clearance requirements, an obstacle located in the back-up or lateral transition area shall be considered if its lateral distance from the nearest point on the surface below the intended flight path is not further than:
 - (1) half of the minimum width defined in the AFM or, when no width is defined, ' $0,75 \times D$ ';
 - (2) plus the greater of ' $0,25 \times D$ ' or ' 3 m ';
 - (3) plus:
 - (i) for operations under VFR by day $0,10 \times \text{the distance travelled from the back of the FATO}$, or
 - (ii) for operations under VFR at night $0,15 \times \text{the distance travelled from the back of the FATO}$.
- (c) Obstacles may be disregarded if they are situated beyond:
 - (1) $7 \times \text{rotor radius (R)}$ for day operations, if it is assured that navigational accuracy can be achieved by reference to suitable visual cues during the climb;
 - (2) $10 \times R$ for night operations, if it is assured that navigational accuracy can be achieved by reference to suitable visual cues during the climb;
 - (3) 300 m if navigational accuracy can be achieved by appropriate navigation aids; or
 - (4) 900 m in all other cases.

CHAPTER 2

Performance class 1

CAT.POL.H.200 General

Helicopters operated in performance class 1 shall be certified in category A or equivalent as determined by the Agency.

CAT.POL.H.205 Take-off

- (a) The take-off mass shall not exceed the maximum take-off mass specified in the AFM for the procedure to be used.

- (b) The take-off mass shall be such that:
- (1) it is possible to reject the take-off and land on the FATO in case of the critical engine failure being recognised at or before the take-off decision point (TDP);
 - (2) the rejected take-off distance required (RTODRH) does not exceed the rejected take-off distance available (RTODAH); and
 - (3) the TODRH does not exceed the take-off distance available (TODAH).
- (4) Notwithstanding (b)(3), the TODRH may exceed the TODAH if the helicopter, with the critical engine failure recognised at TDP can, when continuing the take-off, clear all obstacles to the end of the TODRH by a vertical margin of not less than 10,7 m (35 ft).
- (c) When showing compliance with (a) and (b), account shall be taken of the appropriate parameters of CAT.POL.H.105(c) at the aerodrome or operating site of departure.
- (d) That part of the take-off up to and including TDP shall be conducted in sight of the surface such that a rejected take-off can be carried out.
- (e) For take-off using a backup or lateral transition procedure, with the critical engine failure recognition at or before the TDP, all obstacles in the back-up or lateral transition area shall be cleared by an adequate margin.

CAT.POL.H.210 Take-off flight path

- (a) From the end of the TODRH with the critical engine failure recognised at the TDP:
- (1) The take-off mass shall be such that the take-off flight path provides a vertical clearance, above all obstacles located in the climb path, of not less than 10,7 m (35 ft) for operations under VFR and 10,7 m (35 ft) + $0,01 \times \text{distance DR}$ for operations under IFR. Only obstacles as specified in CAT.POL.H.110 have to be considered.
 - (2) Where a change of direction of more than 15° is made, adequate allowance shall be made for the effect of bank angle on the ability to comply with the obstacle clearance requirements. This turn is not to be initiated before reaching a height of 61 m (200 ft) above the take-off surface unless it is part of an approved procedure in the AFM.
- (b) When showing compliance with (a), account shall be taken of the appropriate parameters of CAT.POL.H.105(c) at the aerodrome or operating site of departure.

CAT.POL.H.215 En-route — critical engine inoperative

- (a) The mass of the helicopter and flight path at all points along the route, with the critical engine inoperative and the meteorological conditions expected for the flight, shall permit compliance with (1), (2) or (3):
- (1) When it is intended that the flight will be conducted at any time out of sight of the surface, the mass of the helicopter permits a rate of climb of at least 50 ft/minute with the critical engine inoperative at an altitude of at least 300 m (1 000 ft), or 600 m (2 000 ft) in areas of mountainous terrain, above all terrain and obstacles along the route within 9,3 km (5 NM) on either side of the intended track.
 - (2) When it is intended that the flight will be conducted without the surface in sight, the flight path permits the helicopter to continue flight from the cruising altitude to a height of 300 m (1 000 ft) above a landing site where a landing can be made in accordance with CAT.POL.H.220. The flight path clears vertically, by at least 300 m (1 000 ft) or 600 m (2 000 ft) in areas of mountainous terrain, all terrain and obstacles along the route within 9,3 km (5 NM) on either side of the intended track. Drift-down techniques may be used.
 - (3) When it is intended that the flight will be conducted in VMC with the surface in sight, the flight path permits the helicopter to continue flight from the cruising altitude to a height of 300 m (1 000 ft) above a landing site where a landing can be made in accordance with CAT.POL.H.220, without flying at any time below the appropriate minimum flight altitude. Obstacles within 900 m on either side of the route need to be considered.

- (b) When showing compliance with (a)(2) or (a)(3):
 - (1) the critical engine is assumed to fail at the most critical point along the route;
 - (2) account is taken of the effects of winds on the flight path;
 - (3) fuel jettisoning is planned to take place only to an extent consistent with reaching the aerodrome or operating site with the required fuel reserves and using a safe procedure; and
 - (4) fuel jettisoning is not planned below 1 000 ft above terrain.
- (c) The width margins of (a)(1) and (a)(2) shall be increased to 18,5 km (10 NM) if the navigational accuracy cannot be met for 95 % of the total flight time.

CAT.POL.H.220 Landing

- (a) The landing mass of the helicopter at the estimated time of landing shall not exceed the maximum mass specified in the AFM for the procedure to be used.
- (b) In the event of the critical engine failure being recognised at any point at or before the landing decision point (LDP), it is possible either to land and stop within the FATO, or to perform a balked landing and clear all obstacles in the flight path by a vertical margin of 10,7 m (35 ft). Only obstacles as specified in CAT.POL.H.110 have to be considered.
- (c) In the event of the critical engine failure being recognised at any point at or after the LDP, it is possible to:
 - (1) clear all obstacles in the approach path; and
 - (2) land and stop within the FATO.
- (d) When showing compliance with (a) to (c), account shall be taken of the appropriate parameters of CAT.POL.H.105(c) for the estimated time of landing at the destination aerodrome or operating site, or any alternate if required.
- (e) That part of the landing from the LDP to touchdown shall be conducted in sight of the surface.

CAT.POL.H.225 Helicopter operations to/from a public interest site

- (a) Operations to/from a public interest site (PIS) may be conducted in performance class 2, without complying with CAT.POL.H.310(b) or CAT.POL.H.325(b), provided that all of the following are complied with:
 - (1) the PIS was in use before 1 July 2002;
 - (2) the size of the PIS or obstacle environment does not permit compliance with the requirements for operation in performance class 1;
 - (3) the operation is conducted with a helicopter with an MOPSC of six or less;
 - (4) the operator complies with CAT.POL.H.305(b)(2) and (b)(3);
 - (5) the helicopter mass does not exceed the maximum mass specified in the AFM for a climb gradient of 8 % in still air at the appropriate take-off safety speed (V_{TOSS}) with the critical engine inoperative and the remaining engines operating at an appropriate power rating; and
 - (6) the operator has obtained prior approval for the operation from the competent authority. Before such operations take place in another Member State, the operator shall obtain an endorsement from the competent authority of that State.
- (b) Site-specific procedures shall be established in the operations manual to minimise the period during which there would be danger to helicopter occupants and persons on the surface in the event of an engine failure during take-off and landing.
- (c) The operations manual shall contain for each PIS: a diagram or annotated photograph, showing the main aspects, the dimensions, the non-conformance with the requirements performance class 1, the main hazards and the contingency plan should an incident occur.

CHAPTER 3

Performance class 2**CAT.POL.H.300 General**

Helicopters operated in performance class 2 shall be certified in category A or equivalent as determined by the Agency.

CAT.POL.H.305 Operations without an assured safe forced landing capability

- (a) Operations without an assured safe forced landing capability during the take-off and landing phases shall only be conducted if the operator has been granted an approval by the competent authority.
- (b) To obtain and maintain such approval the operator shall:
 - (1) conduct a risk assessment, specifying:
 - (i) the type of helicopter; and
 - (ii) the type of operations;
 - (2) implement the following set of conditions:
 - (i) attain and maintain the helicopter/engine modification standard defined by the manufacturer;
 - (ii) conduct the preventive maintenance actions recommended by the helicopter or engine manufacturer;
 - (iii) include take-off and landing procedures in the operations manual, where they do not already exist in the AFM;
 - (iv) specify training for flight crew; and
 - (v) provide a system for reporting to the manufacturer loss of power, engine shutdown or engine failure events;and
 - (3) implement a usage monitoring system (UMS).

CAT.POL.H.310 Take-off

- (a) The take-off mass shall not exceed the maximum mass specified for a rate of climb of 150 ft/min at 300 m (1 000 ft) above the level of the aerodrome or operating site with the critical engine inoperative and the remaining engine(s) operating at an appropriate power rating.
- (b) For operations other than those specified in CAT.POL.H.305, the take-off shall be conducted such that a safe forced landing can be executed until the point where safe continuation of the flight is possible.
- (c) For operations in accordance with CAT.POL.H.305, in addition to the requirements of (a):
 - (1) the take-off mass shall not exceed the maximum mass specified in the AFM for an all engines operative out of ground effect (AEO OGE) hover in still air with all engines operating at an appropriate power rating; or
 - (2) for operations from a helideck:
 - (i) with a helicopter that has an MOPSC of more than 19; or
 - (ii) any helicopter operated from a helideck located in a hostile environment,the take-off mass shall take into account: the procedure; deck-edge miss and drop down appropriate to the height of the helideck with the critical engine(s) inoperative and the remaining engines operating at an appropriate power rating.
- (d) When showing compliance with (a) to (c), account shall be taken of the appropriate parameters of CAT.POL.H.105(c) at the point of departure.
- (e) That part of the take-off before the requirement of CAT.POL.H.315 is met shall be conducted in sight of the surface.

CAT.POL.H.315 Take-off flight path

From the defined point after take-off (DPATO) or, as an alternative, no later than 200 ft above the take-off surface, with the critical engine inoperative, the requirements of CAT.POL.H.210(a)(1), (a)(2) and (b) shall be complied with.

CAT.POL.H.320 En-route — critical engine inoperative

The requirement of CAT.POL.H.215 shall be complied with.

CAT.POL.H.325 Landing

- (a) The landing mass at the estimated time of landing shall not exceed the maximum mass specified for a rate of climb of 150 ft/min at 300 m (1 000 ft) above the level of the aerodrome or operating site with the critical engine inoperative and the remaining engine(s) operating at an appropriate power rating.
- (b) If the critical engine fails at any point in the approach path:
 - (1) a balked landing can be carried out meeting the requirement of CAT.POL.H.315; or
 - (2) for operations other than those specified in CAT.POL.H.305, the helicopter can perform a safe forced landing.
- (c) For operations in accordance with CAT.POL.H.305, in addition to the requirements of (a):
 - (1) the landing mass shall not exceed the maximum mass specified in the AFM for an AEO OGE hover in still air with all engines operating at an appropriate power rating; or
 - (2) for operations to a helideck:
 - (i) with a helicopter that has an MOPSC of more than 19; or
 - (ii) any helicopter operated to a helideck located in a hostile environment,

the landing mass shall take into account the procedure and drop down appropriate to the height of the helideck with the critical engine inoperative and the remaining engine(s) operating at an appropriate power rating.
- (d) When showing compliance with (a) to (c), account shall be taken of the appropriate parameters of CAT.POL.H.105(c) at the destination aerodrome or any alternate, if required.
- (e) That part of the landing after which the requirement of (b)(1) cannot be met shall be conducted in sight of the surface.

CHAPTER 4**Performance class 3****CAT.POL.H.400 General**

- (a) Helicopters operated in performance class 3 shall be certified in category A or equivalent as determined by the Agency, or category B.
- (b) Operations shall only be conducted in a non-hostile environment, except:
 - (1) when operating in accordance with CAT.POL.H.420; or
 - (2) for the take-off and landing phase, when operating in accordance with (c).
- (c) Provided the operator is approved in accordance with CAT.POL.H.305, operations may be conducted to/from an aerodrome or operating site located outside a congested hostile environment without an assured safe forced landing capability:
 - (1) during take-off, before reaching V_y (speed for best rate of climb) or 200 ft above the take-off surface; or
 - (2) during landing, below 200 ft above the landing surface.
- (d) Operations shall not be conducted:
 - (1) out of sight of the surface;

- (2) at night;
- (3) when the ceiling is less than 600 ft; or
- (4) when the visibility is less than 800 m.

CAT.POL.H.405 Take-off

- (a) The take-off mass shall be the lower of:
 - (1) the MCTOM; or
 - (2) the maximum take-off mass specified for a hover in ground effect with all engines operating at take-off power, or if conditions are such that a hover in ground effect is not likely to be established, the take-off mass specified for a hover out of ground effect with all engines operating at take-off power.
- (b) Except as provided in CAT.POL.H.400(b), in the event of an engine failure the helicopter shall be able to perform a safe forced landing.

CAT.POL.H.410 En-route

- (a) The helicopter shall be able, with all engines operating within the maximum continuous power conditions, to continue along its intended route or to a planned diversion without flying at any point below the appropriate minimum flight altitude.
- (b) Except as provided in CAT.POL.H.420, in the event of an engine failure the helicopter shall be able to perform a safe forced landing.

CAT.POL.H.415 Landing

- (a) The landing mass of the helicopter at the estimated time of landing shall be the lower of:
 - (1) the maximum certified landing mass; or
 - (2) the maximum landing mass specified for a hover in ground effect, with all engines operating at take-off power, or if conditions are such that a hover in ground effect is not likely to be established, the landing mass for a hover out of ground effect with all engines operating at take-off power.
- (b) Except as provided in CAT.POL.H.400(b), in the event of an engine failure, the helicopter shall be able to perform a safe forced landing.

CAT.POL.H.420 Helicopter operations over a hostile environment located outside a congested area

- (a) Operations over a non-congested hostile environment without a safe forced landing capability with turbine-powered helicopters with an MOPSC of six or less shall only be conducted if the operator has been granted an approval by the competent authority, following a safety risk assessment performed by the operator. Before such operations take place in another Member State, the operator shall obtain an endorsement from the competent authority of that State.
- (b) To obtain and maintain such approval the operator shall:
 - (1) only conduct these operations in the areas and under the conditions specified in the approval;
 - (2) not conduct these operations under a HEMS approval;
 - (3) substantiate that helicopter limitations, or other justifiable considerations, preclude the use of the appropriate performance criteria; and
 - (4) be approved in accordance with CAT.POL.H.305(b).
- (c) Notwithstanding CAT.IDE.H.240, such operations may be conducted without supplemental oxygen equipment, provided the cabin altitude does not exceed 10 000 ft for a period in excess of 30 minutes and never exceeds 13 000 ft pressure altitude.