|  |  |  |
| --- | --- | --- |
|  | Helicopter Emergency Medical Service (HEMS) operations *Ver. 2025-01-16* |  |
|  |
| Operatör |
|   |
| Tillståndsnummer: | Ifylld EASA Form 2: |
|   |[ ]
|  | Attachment number: |
| Relevant elements defined in the mandatory part of the Operational Suitiability Data (OSD) established in accordance with Regulation (EU) No 748/2012 are taken into account |   |
| Transportstyrelsen |
| Ärendenummer: | Handläggare: |
|   |   |
| Berörda sektioner/samråd: |
|   |
| Information |
|  |
| Denna checklista är avsedd som stöd vid ansökan om genomförande av Helicopter Emergency Medical Service (HEMS). Checklistan innehåller både regler och tillhörande AMC och GM. *Observera att om det skulle finnas olikheter mellan denna checklista och aktuell regel på EUR LEX alternativt mellan checklistan och av EASA presenterat AMC och GM så gäller originaltexterna*

|  |
| --- |
| Där grönmarkerade rutor förekommer ska relevanta bilagor sändas in.Bilagans nummer ska anges i checklistan. |

Relevanta regelparagrafer i detta dokument följs av en ruta där operatören anger var i manualverket paragrafen omhändertagits och detta ska skrivas på detaljnivå för att underlätta och påskynda granskning och handläggning; att endast ange OM-A kap 8 är inte acceptabelt, var så precisa ni kan och hänvisa till flera paragrafer om detta behövs. |
| SPA.GEN.105 Application for a specific approval |
|  |
| (a) The operator applying for the initial issue of a specific approval shall provide to the competent authority the documentation required in the applicable Subpart, together with the following information: |
|  |  | TS notes: |
| (1) the name, address and mailing address of the applicant; | Ref EASA Form 2 |   |
|  | Bilaga nr. | TS notes: |
| (2) a description of the intended operation. |  |   |
|  |
| (b) The operator shall provide the following evidence to the competent authority: |
|  |  | TS notes: |
| (1) compliance with the requirements of the applicable Subpart; | This compliance checklist |   |
|  |  | TS notes: |
| (2) that the relevant elements defined in the mandatory part of the operational suitability data established in accordance with Regulation (EU) No 748/2012 are taken into account. | Ref. header of this CCL |   |
|  | Ref. in manual: | TS notes: |
| (c) The operator shall retain records relating to (a) and (b) at least for the duration of the operation requiring a specific approval, or, if applicable, in accordance with Annex III (Part-ORO). |   |   |
| SPA.HEMS.100 Helicopter emergency medical service (HEMS) operations |
|  |
| (a) Helicopters shall only be operated for the purpose of HEMS operations if the operator has been approved by the competent authority. |
|  |
| (b) To obtain such approval by the competent authority, the operator shall: |
|  | AOC number: | TS notes: |
| (1) operate in CAT and hold a CAT AOC in accordance with Annex III (Part-ORO); |   |   |
|  |  | TS notes: |
| (2) demonstrate to the competent authority compliance with the requirements contained in this Subpart. | This compliance checklist |   |
| GM1 SPA.HEMS.100(a) Helicopter emergency medical service (HEMS) operations |
| THE HEMS PHILOSOPHY |
| *For the complete text, please se original text in GM1 SPA.HEMS.100(a).* | Ref. in manual | TS notes: |
| (i) SummaryIn summary, the following points are considered to be pertinent to the HEMS philosophy and HEMS regulations:(1) absolute levels of safety are conditioned by society;(2) potential risk must only be to a level proportionate to the task;(3) protection is afforded at levels appropriate to the occupants;(4) this Subpart addresses a number of risk areas and mitigation is built in;(5) only HEMS operations are dealt with by this Subpart;(6) there are three main categories of HEMS sites and each is addressed appropriately; and(7) State alleviation from the requirement at a hospital site is available but such alleviations should be strictly controlled by a system of registration.*(Ref to rulebook for complete text)* |   |   |
|

|  |
| --- |
| SPA.HEMS.105 HEMS HEC operations |
|  | Ref. in manual: | TS notes: |
| (a) HEMS HEC operations may be conducted with either of the following:(1) a helicopter hoist, under the conditions prescribed in Subpart I (Helicopter Hoist Operations);(2) a cargo sling, under the conditions prescribed in point (b). |   |   |
|  | Ref. in manual: | TS notes: |
| (b) For HEMS HEC operations conducted with a cargo sling, the operator shall:(1) comply with the requirements of point SPO.SPEC.HEC.105 of Annex VIII;(2) use an approved double cargo hook, or a cargo hook system approved under a relevant airworthiness standard;(3) limit the operations to the technical phase of the flight for rescuing injured, ill or endangered persons, or to carry persons that are necessary for the mission;(4) ensure that sling technical crew members are adequately equipped, trained, checked and briefed;(5) develop specific HEMS HEC SOPs, following the risk assessment referred to in point SPA.HEMS.140;(6) ensure that all flight crew members involved in HEMS HEC operations are experienced, trained and checked for HEMS HEC operations, and have recent experience with such activity. |   |   |

**AMC1 SPA.HEMS.105(b) HEMS HEC operations**

|  |
| --- |
| TECHNICAL CREW MEMBERS AND GROUND OPERATIONS PERSONNEL |
|  | Ref. in manual: | TS notes: |
| (a) During HEMS HEC cargo sling operations, the operator should ensure that a trained crew member, referred to as the sling technical crew member, is in charge of: (1) ensuring that the rope is safely connected to the helicopter hook; and(2) when relevant, guiding the pilot from the cabin, from the ground, or when carried externally. |   |   |
|  | Ref. in manual: | TS notes: |
| (b) The operator should ensure that the person securing themselves or other persons to the rope is trained in accordance with ORO.GEN.110(e). This person should be nominated by the operator or should be part of an external organisation contracted by the operator. If the person is a member of an external organisation, ORO.GEN.205 applies. This person may be a sling technical crew member. |   |   |
|  | Ref. in manual: | TS notes: |
| (c) The sling technical crew member may be the HEMS technical crew member if the training and checking requirements for both roles are met. |   |   |
|  | Ref. in manual: | TS notes: |
| (d) The sling technical crew member and the person responsible to secure themselves or other persons to the rope, referred to in (b) should comply with the training, checking and briefing defined for task specialists in point (e) of AMC1 SPO.SPEC.HEC.100. |   |   |
| EQUIPMENT |  |  |
|  | Ref. in manual: | TS notes: |
| (e) The sling technical crew member and the person responsible to secure themselves or other persons to the rope referred to in (b) should be equipped with communication equipment and personal protective equipment meeting the criteria of point (c)(4) of AMC1 SPO.SPEC.HEC.100. The helicopter should be equipped in accordance with point (c)(3) of AMC1 SPO.SPEC.HEC.100. |   |   |
|  | Ref. in manual: | TS notes: |
| (f) When conducting single-pilot vertical reference operations with no assistance of a crew member, additional engine monitoring in the pilot line of vision or an audio warning system is recommended. |   |   |
| FLIGHT CREW |  |  |
|  | Ref. in manual: | TS notes: |
| (g) A pilot involved in HEMS HEC cargo sling operations should be trained and experienced as defined in points (b) and (d) of AMC1 SPO.SPEC.HEC.100. |   |   |
|  | Ref. in manual: | TS notes: |
| (h) A pilot involved in HEMS HEC cargo sling operations should complete a flight check at least annually to demonstrate competence in carrying out HEMS HEC operations. The checking may be combined with the line check or with a HEC training flight. If the operator is involved in HEMS HEC cargo sling operations by night, the flight check should take place by night. |   |   |
|  | Ref. in manual: | TS notes: |
| (i) A pilot involved in HEMS HEC cargo sling operations should have completed in the last 90 days: (1) when operating by day: any combination of three day or night cycles, each of which shall include a transition to and from the hover; (2) when operating by night: three night cycles, each of which shall include a transition to and from the hover.Cycles may include HEMS HEC cargo sling cycles, SPO.SPEC.HEC cycles, SPO.SPEC.HESLO cycles or hoist cycles |   |   |
|  | Ref. in manual: | TS notes: |
| (j) In the context of HEMS, the validity period of flight and technical crew recurrent training and checking as well as recency should be as specified in AMC1 ORO.FC.145(g). |   |   |
| SOPs |  |  |
|  | Ref. in manual: | TS notes: |
| (k) HEMS HEC standard operating procedures (SOPs) should be developed in accordance with points (g) and (h) of AMC1 SPO.SPEC.HEC.100 |   |   |
| **GM1 SPA.HEMS.105(b) HEMS HEC operations** |
| HEMS OPERATING SITES USED FOR TRAINING AND CHECKING |
|  | Ref. in manual: | TS notes: |
| In order to ensure that the training and checking is relevant to the duties of the crew members and ground personnel as required by ORO.GEN.110(e), the operator may define HEMS operating sites for the purpose of the HEMS training and checking required in SPA.HEMS.105(b), except for the initial part of the training.The training and checking may involve all personnel necessary to the HEMS mission. |   |   |
| **AMC1 SPA.HEMS.105(b)(2) HEMS HEC operations** |
| AIRWORTHINESS APPROVAL FOR THE CARGO HOOK |
|  | Ref. in manual: | TS notes: |
| A double cargo hook installation should be considered to satisfy the airworthiness criteria for HEMS HEC operations if it meets the criteria of AMC1 SPO.SPEC.HEC.105(b).A cargo hook system other than a double cargo hook should meet the provisions of point (a) of AMC1 SPO.SPEC.HEC.105(b). |   |   |

SPA.HEMS.110 Equipment requirements for HEMS operations |
|  | Ref. in manual | TS notes: |
| (a) The installation on a helicopter of all dedicated medical equipment and any subsequent modifications to that equipment and, where appropriate, its operation, shall be approved in accordance with Regulation (EU) No 748/2012. |   |   |
|  | Ref. in manual: | TS notes: |
| (b) For VFR flights over routes navigated by reference to visual landmarks, the helicopter shall be equipped with a device that provides a moving map display with own-ship position and obstacles. The map and obstacle database(s) shall be kept up to date. |   |   |
|  | Ref. in manual | TS notes |
| (c) By way of derogation from point CAT.IDE.H.240 of Annex IV, complex, non-pressurised helicopters operated in HEMS with a MOPSC of nine or less shall comply with the oxygen requirements applicable to other than complex, non-pressurised helicopters. |   |   |
| (d) *Point d is not applicable in Sweden, due hight of highest terrain.* |   |   |
| (e) *Point e to be inserted before 25 May 2028.* |   |   |
|  | Ref. in manual: | TS notes: |
| (f) For HEMS operations by day, the helicopter shall be equipped with the flight instruments required under points (a)(6) and (a)(7) of point CAT.IDE.H.130 of Annex IV. |   |   |
|  | Ref. in manual: | TS notes: |
| (g) The helicopter shall be equipped with a radio altimeter capable of emitting an audio warning below a pre-set height and a visual warning at a height selectable by the pilot. |   |   |
|  | Ref. in manual: | TS notes: |
| (h) Instruments and equipment required in points (e) and (g) shall be approved in accordance with the applicable airworthiness requirements. |   |   |
|  | Ref. in manual: | TS notes: |
| (i) The operator shall ensure that all relevant information is documented in the minimum equipment list. |   |   |
| AMC1 SPA.HEMS.110(b) Equipment requirements for HEMS operationsMOVING MAP DISPLAYS |
| The moving map display should show the relative altitude of the surrounding terrain and obstacles to that of the helicopter, and may be any of the following: |
|  | Ref. in manual: | TS notes: |
| (a) an HTAWS that is airworthiness approved; |   |   |
|  | Ref. in manual: | TS notes: |
| (b) a display that is integrated in the cockpit environment and is airworthiness approved; |   |   |
|  | Ref. in manual: | TS notes: |
| (c) a type B EFB software application. |   |   |
|  | Ref. in manual: | TS notes: |
| The database should cover the area where the helicopter usually performs HEMS operations. |   |   |
|  |  |  |
| GM1 SPA.HEMS.110(b) Equipment requirements for HEMS operationsMOVING MAPS - TRAINING |
|  | Ref. in manual: | TS notes: |
| ORO.FC.125 requires differences training or familiarisation when introducing new equipment and procedures. For EFB applications, AMC4 SPA.EFB.100(b)(3) defines the related training.In either case, the training focuses not only on the usage of the equipment or EFB application, but also on its limitations, including the following limitations of moving maps:(a) Not all terrain and obstacles will be included in the database.(b) In VFR, the proper selection of altitude and efficient visual scanning of the environment remain the primary means of obstacle and terrain avoidance.(c) A type B EFB software application can only be used for increased situational awareness. |   |   |
| AMC1 SPA.HEMS.110(d)(3) Equipment requirements for HEMS operationsSHORT EXCURSIONS ABOVE 13 000 ft WITHOUT OXYGEN |
|  | Ref. in manual: | TS notes: |
| *Since point d is not applicable in Sweden, this AMC is therefore not included in checklist, nor is GM1 SPA.HEMS.110(d)(3), AMC1 SPA.HEMS.110(d)(6)&(d)(7) or AMC1 SPA.HEMS.110(d)(8).**(Ref to rulebook for complete text)* |   |   |
| SPA.HEMS.115 Communication |
|  | Ref. in manual: | TS notes: |
| In addition to that required by CAT.IDE.H, helicopters conducting HEMS flights shall have communication equipment capable of conducting two-way communication with the organisation for which the HEMS is being conducted and, where possible, to communicate with ground emergency service personnel. |   |   |
| SPA.HEMS.120 HEMS operating minima |
|  | Ref. in manual: | TS notes: |
| (a) HEMS flights operated under VFR shall comply with the HEMS-specific weather minima for the dispatch and en-route phase of the HEMS flight. |   |   |
|  | Ref. in manual: | TS notes: |
| (b) If during the en-route phase the weather conditions fall below the cloud base or visibility minima, helicopters certified for flights only under VMC shall abandon the flight or return to base. Helicopters equipped and certified for instrument meteorological conditions (IMC) operations may abandon the flight, return to base or convert in all respects to a flight conducted under instrument flight rules (IFR), provided the flight crew are suitably qualified. |   |   |
|  | Ref. in manual | TS notes: |
| (c) The VFR operating minima shall be as defined by the applicable airspace requirements, except in the following cases where reduced ceiling, visibility and vertical distances from obstacles may be used:(1) multi-pilot operations;(2) single-pilot operations with a technical crew member seated in a forward-facing front seat, who is suitably qualified and tasked to mitigate the additional risk.  |   |   |
| GM1 SPA.HEMS.120 HEMS operating minima |
| REDUCED VISIBILITY |
|  | Ref. in manual | TS notes: |
| (a) The ability to reduce the visibility for short periods will allow the commander to assess the riskof flying temporarily into reduced visibility against the need to provide emergency medicalservice, taking into account the advisory speeds included in Table 1. Since every situation isdifferent it was not felt appropriate to define the short period in terms of absolute figures. It isfor the commander to assess the aviation risk to third parties, the crew and the aircraft suchthat it is proportionate to the task, using the principles of GM1 SPA.HEMS.100(a). |   |   |
|  | Ref. in manual | TS notes: |
| (b) When flight with a visibility of less than 5 km is permitted, the forward visibility should not be less than the distance travelled by the helicopter in 30 seconds so as to allow adequate opportunity to see and avoid obstacles (see table below). |   |   |
|  |  |  |

|  |  |  |
| --- | --- | --- |
| **GM2 SPA.HEMS.120 HEMS operating minima** |  |  |
| HEMS TRAINING MINIMA |  |  |
|  | Ref. in manual: | TS notes: |
| When conducting a HEMS training flight, the HEMS operating minima are applicable. |   |   |
| **AMC1 SPA.HEMS.120(a) HEMS operating minima** |
| HEMS VFR MINIMA: CEILING, CLOUD BASE AND VISIBILITY |
|  | Ref. in manual: | TS notes: |
| (a) The operator should define minimum ceiling, cloud base and visibility no lower than those defined in Table 1.  |   |   |
| REDUCED VFR MINIMA TO BE USED WHEN INSTRUCTED TO ‘PROCEED VFR’ |
|  | Ref. in manual: | TS notes: |
| (b) The operator may define lower HEMS operating minima than those defined in Table 1 above, when an IFR departure or approach chart instructs the pilot to ‘proceed VFR’ prior to an IFR departure or following an IFR approach procedure, both for day and night. If the corresponding HEMS operating minima for the VFR segment of this flight are lower than those defined in Table 1, they should not be lower than those defined in Tables 2 and 3 below. The applicable minima should be published in the operations manual. |   |   |
| HEMS VFR OPERATING MINIMA: VERTICAL DISTANCE TO OBSTACLES |
|  | Ref. in manual: | TS notes: |
| (c) When operating VFR in HEMS below minimum flight altitudes prescribed by the rules of the air or with visibility lower than prescribed in the rules of the air, the operator should define in the operations manual: (1) the minimum safe cruising height(s) for the area(s) overflown, the minimum distance to obstacles and, when necessary, the appropriate maximum helicopter speed(s); (2) the minimum safe height (safety height) over relevant obstacles in the flight path during the cruise phase for VFR operations, which should not be less than 200 ft during the day and 500 ft during the night. |   |   |
|

|  |
| --- |
| **GM1 SPA.HEMS.120(a) HEMS operating minima** |
| HEMS VFR OPERATING MINIMA: MISCELLANEOUS |
|  | Ref. in manual: | TS notes: |
| Requirements in the rules of the air to remain out of clouds or in sight of the surface are unaffected by the HEMS VFR operating minima. Minimum horizontal distances to obstacles are also unchanged. |   |   |

**AMC1 SPA.HEMS.120(c)(2) HEMS operating minima** |
| TASKS AND QUALIFICATION OF THE HEMS TECHNICAL CREW MEMBER |
|  |  |  |
| The HEMS technical crew member should be considered to be suitably qualified for the purpose of using the HEMS minima if he or she has completed the training for all the following tasks and is effectively tasked with them, as defined in AMC1 SPA.HEMS.130(e):  |
|  | Ref. in manual: | TS notes: |
| (a) training for the primary tasks of the technical crew member; |   |   |
|  | Ref. in manual: | TS notes: |
| (b) navigation training; |   |   |
|  | Ref. in manual: | TS notes: |
| (c) communications training; |   |   |
|  | Ref. in manual: | TS notes: |
| (d) monitoring training. |   |   |
| SPA.HEMS.125 Performance requirements for HEMS operations |
|  | Ref. in manual | TS notes: |
| (a) Performance class 3 operations over a hostile environment shall only be conducted provided one of the following conditions are met: (1) The HEMS operating site used for take-off, landing or HEMS HEC operations is located above 7000-ft altitude and the helicopter is certified as Category A or equivalent, as determined by the Agency; |   |   |
|  | Ref. in manual: | TS notes: |
| (2) The planned HEMS operation does not require the transportation of medical personnel, medical supplies or ill or injured persons, and either the helicopter is certified as Category A or equivalent, as determined by the Agency, or all the following conditions are met: (i) the helicopter is equipped with crash-resistant fuel systems; (ii) the helicopter is equipped with a safety belt with upper torso restraint system for use on each passenger seat for each passenger aged 24 months or more; (iii) the altitude of at least one of the HEMS operating sites used during the HEMS operation is not lower than 3 000 ft; (iv) the operator has been granted an approval by the competent authority in accordance with point CAT.POL.H.420 of Annex IV; |   |   |
|  | Ref. in manual: | TS notes: |
| (3) At least one HEMS operating site used for take-off, landing or HEMS HEC operations during the HEMS operation is located at or above 8 000-ft altitude and all the following conditions are met: (i) the helicopter is equipped with crash-resistant fuel systems; Easy Access Rules for Air Operations ANNEX V (Part-SPA) SUBPART J: HELICOPTER EMERGENCY MEDICAL SERVICE OPERATIONS Powered by EASA eRules Page 1555 of 2364| Sep 2023 (ii) the helicopter is equipped with a safety belt with upper torso restraint system for use on each passenger seat for each passenger aged 24 months or more; (iii) a helicopter certified as Category A or equivalent, as determined by the Agency, is not available or not suitable for the operation due to either of the following reasons: (A) insufficient performance margins to operate at the HEMS operating site, or no capability to conduct HEMS HEC operations, if applicable; (B) helicopters certified as Category A or equivalent, as determined by the Agency, and that might otherwise be dispatched, are on a HEMS mission or not yet ready for the next mission, leading to a delay in the intervention incompatible with the emergency; (iv) the operator has established a procedure to achieve compliance with point (iii); (v) the operator has been granted an approval by the competent authority in accordance with point CAT.POL.H.420 of Annex IV; (vi) the operator shall record all missions flown with a helicopter that is not certified as Category A or equivalent, as determined by the Agency. |   |   |
|  | Ref. in manual: | TS notes: |
| (b) By way of derogation from point CAT.POL.H.400(d)(2) of Annex IV, if the criteria of point (a)(1) are met, then helicopter night operations may be conducted in performance class 3. |   |   |
|  | Ref. in manual | TS notes: |
| (c) Take-off and landing (1) Helicopters that conduct operations to or from a final approach and take-off area (FATO) at a hospital that is located in a congested hostile environment and that is used as a HEMS operating base shall be operated in accordance with performance class 1. |   |   |
|  | Ref. in manual | TS notes: |
| (2) Helicopters that conduct operations to or from a FATO at a hospital that is located in a congested hostile environment and that is not a HEMS operating base shall be operated in accordance with performance class 1 except when the operator holds an approval in accordance with point CAT.POL.H.225. |   |   |
|  | Ref. in manual | TS notes: |
| (3) Helicopters that conduct operations to or from a HEMS operating site located in a hostile environment shall be: (i) operated in accordance with performance class 2, or if the conditions defined in point (a) are met, in performance class 3; (ii) exempt from the approval required by point CAT.POL.H.305(a) of Annex IV, provided compliance is shown with point CAT.POL.H.305(b)(2) and (b)(3) of Annex IV. |   |   |
|  | Ref. in manual | TS notes: |
| (4) The HEMS operating site features shall provide adequate clearance from all obstructions, and shall provide for safe operations. For night operations, the helicopter lighting system shall adequately illuminate the landing site and surrounding obstacles. |   |   |
| **AMC1 SPA.HEMS.125(a) Performance requirements for HEMS operations** |
| CRASH-RESISTANT FUEL SYSTEMS |  |  |
|  | Ref. in manual: | TS notes: |
| A crash-resistant fuel system is a system that has been demonstrated to comply with CS 27.952(a)(1)(2)(3)(5)&(6), CS 27.952(f), and CS 27.963(g) Initial Issue of 14 November 2003 (or any subsequent amendment) or CS 29.952(a)(1)(2)(3)(5)&(6), CS 29.952(f), and CS 29.963(b) Initial Issue of 14 November 2003 (or any subsequent amendment) or one of the following or equivalent:*(Ref to rulebook for complete text)* |   |   |
|

|  |
| --- |
| **GM1 SPA.HEMS.125(a) Performance requirements for HEMS operations** |
| CRASH-RESISTANT FUEL SYSTEM |

 |
|  | Ref. in manual: | TS notes: |
| The operator may ensure compliance of the fuel system based on a statement by the type-certificate or supplemental type-certificate holder |   |   |
| **AMC1 SPA.HEMS.125(a)(3) Performance requirements for HEMS operations** |
| PERFORMANCE CLASS 3 WITH A HELICOPTER NOT CERTIFIED AS CATEGORY A OR EQUIVALENT |
|  | Ref. in manual: | TS notes: |
| (a) If a stretcher is likely to be necessary for the mission, the helicopter should be able to carry a deployed stretcher without preventing compliance with the crew composition requirements of SPA.HEMS.130, i.e. without preventing the two pilots, or a pilot and a HEMS crew member, from occupying the two forward-facing seats in the cockpit. |   |   |
|  | Ref. in manual: | TS notes: |
| (b) Considering the limitations for Performance class 3 operations included in CAT.POL.H.400, the planned mission needs to remain outside congested hostile areas and is expected to be completed by sunset. |   |   |
|  | Ref. in manual: | TS notes: |
| (c) If the HEMS mission unexpectedly needs to be continued by night, or it unexpectedly requires a HEMS flight into a congested hostile area, the operator should ensure that a category A helicopter is dispatched. |   |   |
|  | Ref. in manual: | TS notes: |
| (d) The records required by point (vi) of SPA.HEMS.125(a)(3) should contain the following information for each mission, and be kept for 3 years: |   |   |
|  | Ref. in manual: | TS notes: |
| (1) the criteria that the operator used for the dispatch in accordance with SPA.HEMS.125 (a)(3); |   |   |
|  | Ref. in manual: | TS notes: |
| (2) the criteria that the operator used for the dispatch as described in (a) and (b) above; |   |   |
|  | Ref. in manual: | TS notes: |
| (3) the contingency options that were available to meet (c), and whether they were triggered or not; |   |   |
|  | Ref. in manual: | TS notes: |
| (4) all elements relevant to the mission including destinations, altitude, weather conditions, mass and balance. |   |   |
| GM1 SPA.HEMS.125(c)(3) Performance requirements for HEMS operations |
| PERFORMANCE CLASS 2 OPERATIONS AT A HEMS OPERATING SITE |
|  | Ref. in manual | TS notes: |
| As the risk profile at a HEMS operating site is already well known, operations without an assured safe forced landing capability do not need a separate approval and the requirements does not call for the additional risk assessment that is specified in CAT.POL.H.305(b)(1). |   |   |
| AMC1 SPA.HEMS.125(c)(4) Performance requirements for HEMS operations |
| CRITERIA FOR THE HEMS OPERATING SITE |
|  | Ref. in manual | TS notes: |
| (a) In order to select a HEMS operating site from the air, the operator should define either: (1) minimum HEMS operating site dimensions of at least 2 × D by day (the largest dimensions of the helicopter when the rotors are turning) and at least 4 × D in length and 2 × D in width by night, to be estimated by the crew from the air; or (2) alternative criteria for the HEMS operating site together with operating procedures and training, which mitigate the risks identified in the operator’s risk assessment. In this case the operator may choose not to define minimum site dimensions. By night, for operations other than HEC, the HEMS operating site should include an area that the crew estimates to be least at least 4 × D in length and 2 × D in width, which should be free of relevant obstacles. |   |   |
|  | Ref. in manual | TS notes: |
| (b) The pre-surveyed HEMS operating site dimensions should be at least 2 × D. |   |   |
|  | Ref. in manual: | TS notes: |
| (c) The operator may provide guidelines to its commanders on whether to land, proceed with e.g. a one-skid landing, hover landing or proceed with HEMS HEC operations. The commander should decide which technique to employ. |   |   |
|  | Ref. in manual: | TS notes: |
| (d) Before operating at a HEMS operating site, the commander should estimate whether it is suitable for safe operations based on the above and on the environmental conditions. |   |   |
| **GM2 SPA.HEMS.125(c)(3) Performance requirements for HEMS operations** |
| TAKE-OFF AND LANDING PERFORMANCE — HEMS OPERATING SITES USED FOR TRAINING AND CHECKING |
|  | Ref. in manual: | TS notes: |
| The operator’s risk assessment required under CAT.POL.H.305(b)(1) may take into consideration the following elements pertaining to take-off and landing performance when defining such HEMS operating sites, for the purpose of compliance with SPA.HEMS.125(c)(3)(ii):*(Ref to rulebook for complete text)* |   |   |
| **AMC2 SPA.HEMS.125(c)(4) Performance requirements for HEMS operations ED Decision 2023/00** |
| ILLUMINATION OF HEMS OPERATING SITES AT NIGHT |
|  | Ref. in manual: | TS notes: |
| For night operations, the illumination should be sufficient to allow the pilot to: (a) identify the landing area in flight and determine the landing direction; and |   |   |
|  | Ref. in manual: | TS notes: |
| (b) make a safe approach, landing and take-off. |   |   |
| **GM1 SPA.HEMS.125(c)(4) Performance requirements for HEMS operations** |
| ILLUMINATION OF HEMS OPERATING SITES AT NIGHT |
|  | Ref. in manual: | TS notes: |
| A landing site may provide additional illumination from the ground, which complements the illumination from the helicopter but does not replace it. Some ground lights might contribute to blinding or masking obstacles. |   |   |
| SPA.HEMS.130 Crew requirements |
|  | Ref. in manual | TS notes: |
| (a) *Selection*. The operator shall establish criteria for the selection of flight crew members for the HEMS task, taking previous experience into account. |   |   |
|  | Ref. in manual | TS notes: |
| (c) Operational training. Crew members shall successfully complete operational training in accordance with the HEMS procedures contained in the operations manual. |   |   |
|  | Ref. in manual | TS notes: |
| (d) Flight training by sole reference to instruments. Flight crew members that conduct HEMS operations without a valid instrument rating shall complete flight training to proficiency by sole reference to instruments in a helicopter or in an FSTD to have the skills to escape unintended IMC conditions. The validity period of the flight training shall be 6 calendar months. |   |   |
|  | Ref. in manual | TS notes: |
| e) Crew composition (1) Day flight. The minimum crew composition shall at least satisfy the following requirements: (i) comprise either two pilots or one pilot and one HEMS technical crew member; (ii) the crew composition may be reduced to only one pilot only if one of the situations below occur; once the crew composition is reduced to one pilot, the commander shall only operate to or from HEMS operating sites if they have previously conducted an in-flight reconnaissance with two crew members during the same HEMS mission: (A) the commander is required to fetch additional medical supplies, refuel, or reposition while the HEMS technical crew member provides medical assistance on the ground; (B) the medical passenger requires the assistance of the HEMS technical crew member in flight; (C) the HEMS technical crew member disembarks to supervise a HEMS HEC cargo sling operation from outside the helicopter; |   |   |
|  | Ref. in manual | TS notes: |
| (2) Night flight. The minimum crew composition shall be: (i) either two pilots or one pilot and one HEMS technical crew member; (ii) one pilot where the following conditions are met: (A) the medical passenger requires the assistance of the HEMS technical crew member during the flight; (B) neither the departure nor the destination is a HEMS operating site. |   |   |
|  | Ref. in manual: | TS notes: |
| (3) The operator shall ensure that the continuity of the crew concept is maintained throughout the HEMS mission. |   |   |
|  | Ref. in manual | TS notes: |
| (f) Flight and technical crew training and checking (1) Training and checking shall be conducted by suitably qualified personnel in accordance with a detailed syllabus that is included in the operations manual and approved by the competent authority. |   |   |
|  | Ref. in manual | TS notes: |
| (2) Crew members(i) All relevant elements of the crew training programmes defined in Subpart FC and TC of Annex III (Part-ORO), including helicopter/FSTD training, shall improve the crew’s knowledge of the HEMS working environment and equipment, improve crew coordination, and include measures to minimise the risks associated with en-route transit in low-visibility conditions, the selection of HEMS operating sites, and approach and departure profiles.(ii) The measures referred to in point (i)shall be assessed during both of the following:(A) VMC day proficiency checks, or VMC night proficiency checks when night HEMS operations are undertaken by the operator;(B) line checks.(iii) the HEMS components of the proficiency checks and line checks referred to in point (ii) shall both have a validity period of 12 calendar months. |   |   |
| AMC1 SPA.HEMS.130 Crew requirements |
| FLIGHT CREW AND TECHNICAL CREW — VALIDITY OF RECURRENT TRAINING AND CHECKING |
|  | Ref. in manual | TS notes: |
| In the context of HEMS, the validity period of recurrent training and checking of all crew members should be as specified in AMC1 ORO.FC.145(g). |   |   |
| AMC1 SPA.HEMS.130(a) Crew requirements |
| HEMS COMMANDER MINIMUM EXPERIENCE |
|  | Ref. in manual | TS notes: |
| The minimum experience level for the commander who conducts HEMS flights should not be less than: (a) either: (1) 1 000 hours as a pilot-in-command/commander of aircraft, of which 500 hours are as a pilot-in-command/commander on helicopters; or (2) 1 000 hours as a co-pilot in HEMS operations of which at least 500 hours are as a pilot-in-command under supervision, and 100 hours as a pilot-in-command/commander on helicopters; |   |   |
|  | Ref. in manual: | TS notes: |
| (b) 500 hours’ operating experience in helicopters, gained in an operational environment similar to that of the intended operation; |   |   |
|  | Ref. in manual: | TS notes: |
| (c) for pilots engaged in restricted night operations that do not include landing at night at HEMS operating sites, 20 hours of VMC at night as a pilot-in-command/commander; and |   |   |
|  | Ref. in manual: | TS notes: |
| (d) for pilots engaged in unrestricted night operations: (1) 30 hours of VMC at night, to which 3 hours may be credited for every hour flown as part of a structured night HEMS training programme on a suitable FSTD. The structured training programme may be part of the operator conversion course or command course of the HEMS operator. This experience comes in addition to point (c); (2) 10 approaches, landings and take-offs by night at operating sites in an operational environment similar to that of the intended operation in the helicopter or in a FFS level D. |   |   |
| **AMC1 SPA.HEMS.130(d) Crew requirements** |
| FLIGHT TRAINING WITH SOLE REFERENCE TO INSTRUMENTS |
|  | Ref. in manual: | TS notes: |
| (a) The flight training should include training as pilot flying with sole reference to instruments. |   |   |
|  | Ref. in manual: | TS notes: |
| (b) The training duration should be at least 45 minutes. |   |   |
|  | Ref. in manual: | TS notes: |
| (c) The training should be conducted by a(n) FI/TRI/SFI and should be sufficient for the pilot to demonstrate competence in recovery from inadvertent entry into IMC conditions including the following manoeuvres: (1) transition to instrument flight during climb-out; (2) climbing and descending turns on to specified headings; (3) level flight, control of heading, altitude and speed; (4) level turns with 30 degrees bank, 180 to 360 degrees left and right; (5) recovering from unusual attitudes; (6) emergency let-down procedures; (7) with a validity period of 12 calendar months, use of the autopilot including upper modes, if fitted |   |   |
|  | Ref. in manual: | TS notes: |
| (e) The instrument flight training should take place in a helicopter FSTD that is suitable for the training, or if no suitable FSTD is available, in a helicopter using vision-limiting devices such as goggles or screens. The helicopter used for the training should be a helicopter type used in the HEMS operation. The helicopter is not required to be certified for IFR operations. |   |   |
| AMC1 SPA.HEMS.130(e) Crew requirements |
| HEMS TECHNICAL CREW MEMBER |
|  | Ref. in manual | TS notes: |
| (a) When the crew is composed of one pilot and one HEMS technical crew member, the latter should be seated in the forward-facing front seat (co-pilot seat) during the flight. However, by day the HEMS technical crew member may be seated in the cabin at the discretion of the commander if all of the following conditions are met: (1) the HEMS technical crew member is likely to be tasked with HEMS HEC duties from the cabin during the HEMS mission; (2) the flight is conducted to or from a HEMS operating site; (3) the operator’s risk assessment determines that the technical crew member can carry out their primary tasks from the cabin; this risk assessment may determine that the rear door(s) needs (need) to remain open for better visibility. In addition, both by day and by night, the HEMS technical crew member may also re-position from the front seat to the cabin and back in the hover phase at the HEMS operating site used for HEMS HEC, if conditions (a)(1) to (a)(3) and all the following additional conditions are met: (4) the risk assessment determines that the technical crew member can safely move from one position to the other; (5) the helicopter is so equipped that the repositioning does not result in inadvertent interference with flight controls or aircraft systems; (6) the operator defines SOPs for the transitioning to unaided visual references prior to entering the hover phase and for the re-positioning of the crew member; (7) the operator defines initial and recurrent training towards these SOPs as well as recency requirements for technical crew members involved; and for night operations the training takes place by night; (8) for night operations, the operator defines criteria to determine whether the HEC operation takes place with sufficient visual references at pre-flight stage and on-site. Sufficient visual references should be considered not to be met in the context of offshore operations; (9) by night, the commander determines whether the pre-flight criteria defined in (8) are likely to be met without the use of NVG, and on-site, whether the criteria are met without the use of NVG. The commander should only use the procedure if the criteria are met. |   |   |
|  | Ref. in manual | TS notes: |
| (b) The primary tasks of the HEMS technical crew members are to assist the commander in: (1) collision avoidance; (2) the selection of the landing site; (3) the detection of obstacles during approach and take-off phases; and (4) the reading of checklists when seated in the front seat. |   |   |
|  | Ref. in manual | TS notes: |
| (c) The commander may delegate other aviation tasks to the HEMS technical crew member, as necessary: (1) assistance in navigation; (2) assistance in radio communication/radio navigation means selection; (3) if properly qualified and licensed, radio communications; (4) reading of checklists from the cabin; and (5) monitoring of parameters. |   |   |
|  | Ref. in manual | TS notes: |
| (d) The commander may also delegate to the HEMS technical crew member tasks on the ground, as necessary: (1) assistance in preparing the helicopter and dedicated medical specialist equipment for subsequent HEMS departure; (2) assistance in the application of safety measures during ground operations with rotors turning (including: crowd control, embarking and disembarking of passengers, refuelling etc.). |   |   |
|  | Ref. in manual | TS notes: |
| (e) There may be exceptional circumstances when it is not possible for the HEMS technical crew member to carry out their primary task as defined under (b). This is to be regarded as exceptional and is only to be conducted at the discretion of the commander, taking into account the dimensions and environment of the HEMS operating site. |   |   |
|  | Ref. in manual: | TS notes: |
| (f) When two pilots are carried, there is no requirement for a HEMS technical crew member, provided that the pilot monitoring performs the aviation tasks of a technical crew member. |   |   |
|  | Ref. in manual: | TS notes: |
| (g) When selecting flight crew in accordance with SPA.HEMS.130(a), for single-pilot operations the operator should consider the experience of both the pilot and the technical crew member. (1) The operator should consider that a HEMS technical crew member is inexperienced until he or she has completed 50 HEMS missions. The operator may include HEMS missions flown during line flying under supervision.(2) When an inexperienced HEMS technical crew member is part of the crew, the following should apply: (i) the pilot has achieved 50 flight hours on the type within a period of 60 days since the completion of the operator’s conversion course on the type; or (ii) the pilot has achieved 100 flight hours on the type since the completion of the operator’s conversion course on the type. (3) A smaller number of flight hours or missions than those defined in (1) or (2) above, and subject to any other conditions which the competent authority may impose, may be acceptable to the competent authority when one of the following applies: (i) a new operator commences operations; (ii) an operator introduces a new helicopter type; (iii) the pilot has previously completed a type conversion course with the same operator (reconversion); (iv) credits are defined in the operational suitability data established in accordance with Commission Regulation (EU) No 748/20121 . |   |   |
| AMC1 SPA.HEMS.130(e)(1)(ii) Crew requirements |
| REDUCTION OF THE CREW COMPOSITION — SINGLE-PILOT OPERATIONS WITH NO TECHNICAL CREW MEMBER |
|  | Ref. in manual | TS notes: |
| (a) The commander should decide whether he or she needs the assistance of a technical crew member, or if the technical crew member can be relieved from flight duties to provide medical assistance from the cabin or on site. |   |   |
|  | Ref. in manual: | TS notes: |
| (b) When relieved from flight duties at a HEMS operating site, the technical crew member should take part in the departure briefing that summarises the relevant obstacles and threats. |   |   |
| GM1 SPA.HEMS.130(e)(3) Crew requirements |
| CONTINUITY OF THE CREW CONCEPT |
|  | Ref. in manual | TS notes: |
| The crew concept includes the operator’s normal crew composition and variations to it that the operator accepts that will occur during the HEMS mission. The operator ensures the continuity of the crew concept by managing these variations. |   |   |
| AMC1 SPA.HEMS.130(f)(1) Crew requirements |
| TRAINING AND CHECKING SYLLABUS |
|  |
| (a) The flight crew initial and recurrent training syllabus should include the following items: |
|  | Ref. in manual | TS notes: |
| (1) meteorological training concentrating on the understanding and interpretation of available weather information; |   |   |
|  | Ref. in manual | TS notes: |
| (2) preparing the helicopter and specialist medical equipment for subsequent HEMS departure; |   |   |
|  | Ref. in manual | TS notes: |
| (3) practice of HEMS departures; |   |   |
|  | Ref. in manual | TS notes: |
| (4) the assessment from the air of the suitability of HEMS operating sites; and |   |   |
|  | Ref. in manual | TS notes: |
| (5) the medical effects air transport may have on the patient. |   |   |
| (b) Single-pilot operations |  |  |
|  | Ref. in manual: | TS notes: |
| (1) The flight crew training syllabus should include initial and annual recurrent helicopter/FSTD training focusing on crew cooperation with the technical crew member. |   |   |
|  | Ref. in manual: | TS notes: |
| (2) The initial training should include at least 4 hours flight instruction dedicated to crew cooperation unless: (i) the pilot holds a certificate of satisfactory completion of a multi-crew cooperation course in accordance with Commission Regulation (EU) No 1178/20111 ; or (ii) the pilot has at least 500 hours in either multi-pilot operations or single-pilot operations with a HEMS or equivalent technical crew member, or a combination of these. |   |   |
|  | Ref. in manual: | TS notes: |
| (3) The training described in (1) and (2) above should be organised with a crew composition of one pilot and one technical crew member. |   |   |
|  | Ref. in manual: | TS notes: |
| (4) The training described in (1) and (2) should be conducted by a suitably qualified commander with a minimum experience of 350 hours in either multi-pilot operations or single-pilot operations with a HEMS technical crew member, or a combination of these. |   |   |
|  |
| (c) The flight crew checking syllabus should include: |
|  | Ref. in manual | TS notes: |
| (1) proficiency checks, which should include landing and take-off profiles likely to be used at HEMS operating sites; and |   |   |
|  | Ref. in manual | TS notes: |
| (2) line checks, with special emphasis on all of the following: (i) local area meteorology; (ii) HEMS flight planning; (iii) HEMS departures;(iv) the selection from the air of HEMS operating sites; (v) low-level flight in poor weather; (vi) familiarity with established HEMS operating sites in the operator’s local area register; (vii) crew cooperation. |   |   |
|  |
| **AMC2 SPA.HEMS.130(f)(1) Crew requirements**HEMS TECHNICAL CREW MEMBER TRAINING AND CHECKING SYLLABUS INITIAL AND RECURRENT TRAINING COVERING PRIMARY TASKS |
|  | Ref. in manual: | TS notes: |
| (a) The HEMS technical crew member initial and recurrent training and checking syllabus required by SPA.HEMS.130(f)(1) and covering primary tasks as defined in point (b) of AMC1 SPA.HEMS.130(e), and tasks required by the operator’s refuelling procedure in compliance with SPA.HEMS.155, and meeting the objectives of points (e)(3) and (f)(2) of SPA.HEMS.130 should include the following items: |   |   |
|  | Ref. in manual: | TS notes: |
| (1) Applicable laws and regulations; |   |   |
|  | Ref. in manual: | TS notes: |
| (2) Helicopter general knowledge: (i) stowage, cabin safety and use of on-board medical equipment;(ii) general knowledge of helicopter operations; |   |   |
|  | Ref. in manual: | TS notes: |
| (3) Meteorology; |   |   |
|  | Ref. in manual: | TS notes: |
| (4) Operational procedures: (i) company procedures; (ii) duties in the HEMS role; (ii) response to HEMS dispatch; (iii) HEMS operating site selection and use; (iv) patients; (v) portable electronic devices and electronic flight bags, as applicable; |   |   |
|  | Ref. in manual: | TS notes: |
| (5) Crew coordination including checklists; |   |   |
|  | Ref. in manual: | TS notes: |
| (6) Human performance and limitations, CRM; |   |   |
|  | Ref. in manual: | TS notes: |
| (7) Flight safety: (i) general flight safety in helicopter operations; (ii) obstacle and traffic clearance; (iii) handling of abnormal and emergency situations including checklists; (iv) dangerous goods (DGs), as relevant for HEMS operation; |   |   |
|  | Ref. in manual: | TS notes: |
| (8) Security. |   |   |
| NAVIGATION TRAINING |  |  |
|  | Ref. in manual: | TS notes: |
| (b) If the HEMS technical crew member is tasked to provide assistance in navigation, as defined in AMC1 SPA.HEMS.130(e), points (c)(1) and (c)(2), the initial and recurrent training and checking syllabus should also include the following items: (1) applicable parts of SERA, as relevant to the navigation tasks of the HEMS crew member; (2) basic navigation training; (3) navigation aid principles and use; (4) airspace, restricted areas, and noise-abatement procedures;(5) crew coordination. |   |   |
| COMMUNICATION TRAINING |  |  |
|  | Ref. in manual: | TS notes: |
| (c) If the HEMS technical crew member is tasked to provide assistance in radio communications as defined in AMC1 SPA.HEMS.130(e), points (c)(2) and (c)(3), the initial and recurrent training and checking syllabus should also include the following items: (1) operation of relevant radio equipment; (2) crew coordination. |   |   |
| MONITORING TRAINING |  |  |
|  | Ref. in manual: | TS notes: |
| (d) If the HEMS technical crew member is tasked to provide assistance in monitoring the flight path and instruments as defined in AMC1 SPA.HEMS.130(e), point (c)(5), the initial and recurrent training and checking syllabus should also include the following items: (1) general knowledge of helicopter operations; (2) monitoring function; (3) crew coordination; (4) handling of abnormal and emergency situations, as applicable. |   |   |
| GROUND CREW TRAINING |  |  |
|  | Ref. in manual: | TS notes: |
| (e) If the HEMS technical crew member is tasked to provide assistance to the helicopter on the ground as defined in AMC1 SPA.HEMS.130(e), point (d), the initial and recurrent training and checking syllabus should also include the following items as applicable to their tasks: (1) safety and security at the HEMS operating site; (2) the dangers to self and others of rotor running helicopters, including loading of patients; (3) preparing the helicopter and specialist medical equipment for subsequent HEMS departure; (4) conducting refuelling, and conducting refuelling with rotors turning; (5) marshalling signals; (6) safety on the aerodrome/operating site, including fire prevention and ramp safety areas; (7) towing of helicopter/trolley. |   |   |
| ADDITIONAL TRAINING (as appropriate) |  |  |
|  | Ref. in manual: | TS notes: |
| (f) The initial and recurrent training and checking syllabus should also include the following items as relevant to the operations: (1) HEMS HEC cargo sling operations, as defined in AMC1 SPA.HEMS.105(b); (2) hoist operations, as defined in SPA.HHO; (3) NVIS, as defined in SPA.NVIS; (4) IFR/PBN. |   |   |
| CONVERSION COURSE GROUND TRAINING AND CHECKING WHEN CHANGING HELICOPTER TYPES OR CHANGING OPERATORS |
|  | Ref. in manual: | TS notes: |
| (g) The conversion course ground training and checking when changing helicopter types should include the elements of (a) to (f) above that are relevant to the new helicopter type. |   |   |
|  | Ref. in manual: | TS notes: |
| (h) The conversion course ground training and checking when changing operators should include the elements of (a) to (f) above that are relevant in the context of changing operators. |   |   |
| INITIAL AIRCRAFT/FSTD TRAINING |  |  |
|  | Ref. in manual: | TS notes: |
| (i) The technical crew member training syllabus should include helicopter/FSTD training focusing on crew cooperation with the pilot. (1) The initial training should include at least 4 hours instruction dedicated to crew cooperation unless: (i) the HEMS crew member has undergone this training under another operator; or (ii) the HEMS crew member has performed at least 50 missions in HEMS or equivalent role as a technical crew member.(2) The training described in (1) above should be organised with a crew composition of one pilot and one technical crew member.(3) The training may be combined with the line flying under supervision. |   |   |
| LINE FLYING UNDER SUPERVISION |  |  |
|  | Ref. in manual: | TS notes: |
| (j) Line flying under supervision (1) Line flying under supervision should take place during the operator’s conversion course. (2) Line flights under supervision provide the opportunity for a HEMS technical crew member to practise the procedures and techniques he or she should be familiar with, regarding ground and flight operations, including any elements that are specific to a particular helicopter type. Upon completion of the line flying under supervision, the HEMS technical crew member should be able to safely conduct the flight operational duties assigned to him or her according to the procedures laid down in the operator’s operations manual. (4) For the conversion course that takes place when joining the operator, line flying under supervision should include a minimum of five sectors. These sectors should include a minimum of one low-height en-route transit and a minimum of three HEMS operating sites that the technical crew member is not familiar with. |   |   |
| RECURRENT AIRCRAFT/FSTD TRAINING |  |  |
|  | Ref. in manual: | TS notes: |
| (k) Recurrent helicopter/FSTD training (1) The recurrent training should focus on crew cooperation and include a minimum of 2 hours of flight. (2) The training described in (1) above should take place in the same conditions as the initial training in (i) above. (3) The validity period of the aircraft/FSTD training should be 12 calendar months. |   |   |
| LINE CHECKS |
|  | Ref. in manual | TS notes: |
| (l) Line checks (1) The line check should be performed during a HEMS mission. If practically necessary, because of the difficulty to anticipate an actual HEMS activity or a cabin layout or helicopter performance making it difficult to carry an extra person, a helicopter flight representative of a HEMS mission may be carried out for the purpose of the line check. (2) The operator’s conversion course should include a line check. The line check should take place after the completion of the line flying under supervision.(3) Any task-specific items may be checked by a suitably qualified HEMS technical crew member nominated by the operator and trained in CRM concepts and the assessment of non-technical skills.  |   |   |
| OPERATOR PROFICIENCY CHECKS |  |  |
|  | Ref. in manual: | TS notes: |
| (m) Operator proficiency checks (1) The HEMS technical crew member should complete an operator proficiency check to demonstrate his or her competence in carrying out normal, abnormal and emergency procedures, covering the relevant aspects associated with the flight operational tasks described in the operations manual and not already covered in the line check. (2) The conversion course should include an operator proficiency check. (3) The operator proficiency check should be valid for a given helicopter type. In order to consider an operator proficiency check to be valid for several helicopter types, the operator should demonstrate that the types are sufficiently similar from the technical crew member’s perspective. |   |   |
| PROVISION OF TRAINING AND CHECKING |  |  |
|  | Ref. in manual: | TS notes: |
| (n) Use of FSTDs (1) The line check and line flying under supervision should be performed in the helicopter. (2) Notwithstanding (1), the operator may perform the line check in two parts, in a suitable FSTD and on ground, if all of the following conditions are met: (i) The FSTD part of the line check takes place in a line-oriented evaluation; (ii) The ground part of the line check takes place at the HEMS operating base and includes all normal operating procedures not checked in the FSTD; (iii) Both parts of the line check are conducted within 3 months of each other; (iv) For the purpose of AMC1 SPA.HEMS.130, the line check is considered to be performed on the day when the last part of the line check is completed; (v) For the purpose of (ii), the operator should arrange to replicate realistic conditions as much as practicable, so that normal operating procedures that take place on ground at the HEMS operating site are also checked. (3) Operator proficiency checks and aircraft/FSTD training should be performed in an suitable FSTD or, if it is not reasonably practicable to gain access to such devices, in an aircraft of the same type. |   |   |
|  | Ref. in manual: | TS notes: |
| (o) Emergency and safety equipment training should be performed in a representative training device or in an aircraft of the same type. |   |   |
|  | Ref. in manual: | TS notes: |
| (p) The type of equipment used for training and checking should be representative of the instrumentation, equipment and layout of the aircraft type operated by the crew member. |   |   |
|  | Ref. in manual: | TS notes: |
| (q) Training and checking in the aircraft/FSTD should take place as part of the normal crew complement. |   |   |
|  | Ref. in manual: | TS notes: |
| (r) The person conducting the training and checking should be a suitably qualified commander nominated by the operator. In the case of the training described in (i)(1) and (k)(1) above, the person conducting the training should have a minimum experience of 350 hours in either multi-pilot operations or single-pilot operations with a HEMS technical crew member or a combination of these. The person conducting a CRM assessment should be trained in CRM concepts and the assessment of CRM skills. |   |   |
|  | Ref. in manual: | TS notes: |
| (s) Notwithstanding (r), the person conducting the training and checking of tasks conducted in the cabin where crew cooperation is not essential may be a suitably qualified technical crew member nominated by the operator. |   |   |
| CRM ASSESSMENT OF THE HEMS TECHNICAL CREW MEMBER |
|  | Ref. in manual: | TS notes: |
| (t) A CRM assessment should take place during the line check or should take place annually in a line-oriented flight scenario (LOFT or line-oriented section of the OPC) of an FSTD session in a suitable FSTD. The CRM assessment in the helicopter should take place as described for pilots in AMC1 ORO.FC.230 point (b)(3)(vi) or (b)(3)(vii). |   |   |
| **GM1 SPA.HEMS.130(f)(1) Crew requirements**HEMS TECHNICAL CREW MEMBER THEORETICAL TRAINING |
|  | Ref. in manual: | TS notes: |
| (a) The HEMS technical crew member training and checking syllabus required by SPA.HEMS.130(f)(1) may be adapted to the knowledge of the technical crew member and structured as shown in Table 1.*(Ref to rulebook for complete text)* |   |   |
|  | Ref. in manual: | TS notes: |
| (b) The operator may consider that trainees that have passed the theoretical knowledge examination for at least PPL(A) or PPL(H) or that hold at least a PPL(A) or PPL(H) do not require additional navigation training. In all other cases, if the HEMS technical crew member is tasked to provide assistance in navigation, the navigation training may be structured as follows: (1) Applicable parts of SERA, as relevant to the navigation tasks of the HEMS crew member; (2) Basic navigation training: (i) charts (convergence, scale, projections, symbology, plotting); (ii) measuring distances and courses; (iii) ability to keep track with helicopter position on map; (iv) moving map if applicable; (v) identification of obstacles and conflicting terrain; (vi) time (local/UTC, sunrise/sunset) and speed;(vii) units and unit conversion; (3) Principles and use of navigation aids: (i) navigation equipment and AFCS operations as applicable; (ii) transponder;(iii) ACAS, HTAWS, weather radar, moving map as applicable; (iv) inadvertent IMC; (4) Airspace, restricted areas, and noise-abatement procedures: (i) air traffic services; (ii) aerodrome procedures; (iii) AIP; (iv) NOTAMS; (5) Crew coordination: assignment of navigation tasks. |   |   |
|  | Ref. in manual: | TS notes: |
| (c) The operator may consider that trainees that have passed the theoretical knowledge examination for at least PPL(A) or PPL(H) or that hold at least a PPL(A) or PPL(H) licence do not require additional navigation training. In all other cases, if the HEMS technical crew member is tasked to provide assistance in radio communications, the radio communications training may be structured as follows: (1) Operation of relevant radio equipment: radio licence as applicable to the frequencies used by the technical crew member (2) Crew coordination: effective use of radio communication system |   |   |
|  | Ref. in manual: | TS notes: |
| (d) If the HEMS technical crew member is tasked to provide assistance in monitoring, the training towards monitoring may be adapted to the knowledge of the technical crew member and structured as shown in Table 2*(Ref to rulebook for complete text)* |   |   |
|  | Ref. in manual: | TS notes: |
| (e) If the HEMS technical crew member is involved in flights under IFR, the additional training towards flights under IFR may be structured as follows: (1) introduction to IFR operations covering IFR parts of the operations manual, including MEL (2) applicable parts of SERA (3) human performance and limitations (4) navigation sources, charts, and procedures (5) navigation equipment and AFCS operations as applicable (6) flight instrument systems (7) ACAS, HTAWS, weather radar, moving map as applicable (8) air traffic control (9) meteorology as relevant to the operating area (10) flight planning |   |   |
|  | Ref. in manual: | TS notes: |
| (f) If the HEMS technical crew member is tasked to provide assistance on the ground or is involved in operations under a specific approval, the training towards these tasks may be structured as in AMC2 SPA.HEMS.130(f)(1). |   |   |
|

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|

|  |
| --- |
| **GM2 SPA.HEMS.130(f)(1) Crew requirements**HEMS TECHNICAL CREW MEMBER OBSERVATION FLIGHTS |
|  | Ref. in manual: | TS notes: |
| If the candidate HEMS crew member has no flight experience as technical crew member, flight crewmember or student pilot in day VMC, night VMC or IMC, the operator may provide observation flightson HEMS missions in day/night VMC and IMC as relevant, prior to the helicopter/FSTD training, oncethe ground training and checking of the conversion course has been completed, as part of the detailedtraining syllabus defined in SPA.HEMS.130(f)(1). |   |   |

**GM3 SPA.HEMS.130(f)(1) Crew requirements**USE OF HEMS OPERATING SITES FOR TRAINING AND CHECKING |
|  | Ref. in manual: | TS notes: |
| In order to ensure that the training and checking is relevant to the duties of the crew members and ground personnel as required by ORO.GEN.110(e), the operator may define HEMS operating sites for the purpose of the HEMS training and checking required in SPA.HEMS.130, including training for HEMS HEC operations, except for the initial part of the training.The training and checking may involve all personnel necessary to the HEMS mission. |   |   |

**AMC1 SPA.HEMS.130(f)(2)(ii)(B) Crew requirements**LINE CHECKS |
|  | Ref. in manual: | TS notes: |
| Where due to the size, the configuration, or the performance of the helicopter, the line check cannot be conducted on an operational flight, it may be conducted on a specially arranged representative flight. This flight may be immediately adjacent to, but not simultaneous with, one of the biannual proficiency checks. |   |   |
| SPA.HEMS.135 HEMS medical passenger and other personnel briefing |
|  | Ref. in manual | TS notes: |
| (a) *Medical passenger*. Prior to any HEMS flight, or series of flights, medical passengers shall have been briefed to ensure that they are familiar with the HEMS working environment and equipment, can operate on-board medical and emergency equipment and can take part in normal and emergency entry and exit procedures. |   |   |
|  | Ref. in manual | TS notes: |
| (b) *Ground emergency service personnel*. The operator shall take all reasonable measures to ensure that ground emergency service personnel are familiar with the HEMS working environment and equipment and the risks associated with ground operations at a HEMS operating site. |   |   |
|  | Ref. in manual | TS notes: |
| (c) *Medical patient*. Notwithstanding CAT.OP.MPA.170, a briefing shall only be conducted if the medical condition makes this practicable. |   |   |
| AMC1 SPA.HEMS.135(a) HEMS medical passenger and other personnel briefing |
| HEMS MEDICAL PASSENGER BRIEFING |
|  | Ref. in manaul | TS notes: |
| The briefing should ensure that the medical passenger understands his/her role in the operation, which includes:(a) familiarisation with the helicopter type(s) operated;conditions both for self and patients; |   |   |
|  | Ref. in manual: | TS notes: |
| (b) entry and exit under normal and emergency |   |   |
|  | Ref. in manual: | TS notes: |
| (c) use of the relevant on-board specialist medical equipment; |   |   |
|  | Ref. in manual: | TS notes: |
| (d) the need for the commander’s approval prior to use of specialised equipment; |   |   |
|  | Ref. in manual: | TS notes: |
| (e) method of supervision of other medical staff; |   |   |
|  | Ref. in manual: | TS notes: |
| (f) the use of helicopter inter-communication systems; |   |   |
|  | Ref. in manual: | TS notes: |
| (g) location and use of on board fire extinguishers; and |   |   |
|  | Ref. in manual: | TS notes: |
| (h) the operator’s crew coordination concept including relevant elements of crew resource management |   |   |
| AMC1.1 SPA.HEMS 135(a) HEMS medical passenger and other personnel briefing |
| HEMS MEDICAL PASSENGER BRIEFING |
|  | Ref. in manual | TS notes: |
| Another means of complying with the rule as compared to that contained in AMC1 SPA.HEMS.135(a) is to make use of a training programme as mentioned in AMC1.1 CAT.OP.MPA.170. |   |   |
| AMC1 SPA.HEMS.135(b) HEMS medical passenger and other personnel briefing |
| GROUND EMERGENCY SERVICE PERSONNEL |
|  | Ref. in manual | TS notes: |
| (a) The task of training large numbers of emergency service personnel is formidable. Wherever possible, helicopter operators should afford every assistance to those persons responsible for training emergency service personnel in HEMS support. This can be achieved by various means, such as, but not limited to, the production of flyers, publication of relevant information on the operator’s web site, development of applications and provision of extracts from the operations manual.  |   |   |
|  | Ref. in manual: | TS notes: |
| (b) The elements that should be covered include: (1) two-way radio communication procedures with helicopters; (2) the selection of suitable HEMS operating sites for HEMS flights; (3) the physical danger areas of helicopters;(4) crowd control in respect of helicopter operations; and (5) the evacuation of helicopter occupants following an on-site helicopter accident. |   |   |
|

|  |
| --- |
| GM1 SPA.HEMS.135(b) HEMS medical passenger and other personnel briefing |
| GROUND EMERGENCY SERVICE PERSONNEL |
|  | Ref. in manual | TS notes: |
| *(Ref to rulebook for complete text)* |   |   |

SPA.HEMS.140 Information and documentation |
|  | Ref. in manual | TS notes: |
| (a) The operator shall assess, mitigate, and minimise the risks associated with the HEMSenvironment as part of its risk analysis and management process. The operator shall describethe mitigating measures, including operating procedures, in the operations manual. |   |   |
|  | Ref. in manual | TS notes: |
| (b) The operator shall ensure that the HEMS commander assesses specific risks associated with theparticular HEMS mission. |   |   |
|  | Ref. in manual | TS notes: |
| (c) Notwithstanding point CAT.OP.MPA.175 of Annex IV, the operator does not need to complete an operational flight plan if the HEMS mission includes a flight to or from a non-pre-surveyed HEMS operating site |   |   |
|  | Ref. in manual | TS notes: |
| (d) Relevant extracts from the operations manual shall be made available to the organisation for which the operator performs HEMS operations |   |   |
| AMC1 SPA.HEMS.140 Information and documentation |
| OPERATIONS MANUAL |
|  | Ref. in manual | TS notes: |
| The operations manual should include all of the following: (a) the use of portable equipment on board; (b) guidance on take-off and landing procedures at previously unsurveyed HEMS operating sites; (c) the final reserve fuel, in accordance with SPA.HEMS.150;(d) operating minima; (e) recommended routes for regular flights to surveyed sites, including the minimum flight altitude; (f) guidance for the selection of the HEMS operating site in case of a flight to an unsurveyed site; (g) the safety altitude for the area overflown; (h) abnormal procedures including procedures to be followed in case of inadvertent entry into cloud; (i) operational dispatch criteria; (j) a description of the crew composition for all phases of flight and conditions, standard operating procedures for the described crew composition including any procedures to ensure the continuity of the crew concept; (k) flight crew and technical crew training and checking syllabi, as required by SPA.HEMS.130. |   |   |
| **AMC2 SPA.HEMS.140 Information, procedures and documentation**HEMS RISK ASSESSMENT |
|  | Ref. in manual: | TS notes: |
| The operator’s HEMS risk assessment should take into account, but not be limited to, all of the following for both day and night operations: (a) adequate ground reference; (b) reliability of weather reporting facilities; (c) crew composition, minimum crew qualification, initial and recurrent training;(d) flight time limitations and crew fatigue; (e) operating procedures, including crew coordination;(f) weather minima; (g) equipment of the helicopter; (h) additional considerations due to specific local conditions. |   |   |
| **GM1 SPA.HEMS.140(b) Information, procedures and documentation** |
| HEMS TACTICAL RISK ASSESSMENT — SPECIFIC RISKS ASSOCIATED WITH THE HEMS MISSION |
|  | Ref. in manual: | TS notes: |
| The commander’s HEMS tactical risk assessment may be included in the daily briefing and amended as necessary.*(Ref to rulebook for complete text)* |   |   |
| SPA.HEMS.145 HEMS operating base facilities |
|  | Ref. in manual | TS notes: |
| (a) If crew members are required to be on standby with a reaction time of less than 45 minutes, dedicated suitable accommodation shall be provided close to each operating base. |   |   |
|  | Ref. in manual | TS notes: |
| (b) At each operating base the pilots shall be provided with facilities for obtaining current and forecast weather information and shall be provided with satisfactory communications with the appropriate air traffic services (ATS) unit. Adequate facilities shall be available for the planning of all tasks. |   |   |
| SPA.HEMS.150 Fuel/energy supply - alleviation |
|  | Ref. in manual | TS notes: |
| As an alternative to points CAT.OP.MPA.191(b), (c), and (d), when the helicopter emergency medical services (HEMS) mission is conducted under visual flight rules (VFR) within a local and defined geographical area, the fuel/energy policy shall ensure that on completion of the mission, the final reserve fuel/energy is sufficient for:(a) 30-minute flying time at best-range speed; or (b) 20-minute flying time at best-range speed by day, when operating within an area providing continuous and suitable operating sites. |   |   |
| **SPA.HEMS.151 Aircraft tracking system** |  |  |
|  | Ref. in manual: | TS notes: |
| The operator shall establish and maintain a monitored aircraft tracking system for HEMS operations for the entire duration of the HEMS mission. |   |   |
| **AMC1 SPA.HEMS.151 Aircraft tracking system** |  |  |
|  | Ref. in manual: | TS notes: |
| (a) The operator should track and monitor HEMS flights from take-off to landing. |   |   |
|  | Ref. in manual: | TS notes: |
| (b) The operator should establish a detailed procedure describing how the aircraft tracking system is to be monitored, what actions are to be taken if a deviation or anomaly has been detected, and when those actions are to be taken. |   |   |
|  | Ref. in manual: | TS notes: |
| (c) The procedure should take into account the following aspects: (1) the outcome of the risk assessment made when the frequency of position reports was defined; (2) the local environment of the intended operations; and (3) the interface with the operator’s emergency response plan. |   |   |
|  | Ref. in manual: | TS notes: |
| (d) Aircraft tracking data should be recorded on the ground and retained for at least 48 h. Following an accident or a serious incident subject to investigation, the data should be retained for at least 30 days, and the operator should be capable of providing a copy of this data without delay. |   |   |
| SPA.HEMS.155 Refuelling with passengers on board |
|  | Ref. in manual | TS notes: |
| A refuelling procedure with either rotors stopped or rotors turning shall be provided in accordance with point CAT.OP.MPA.200 ‘Special refuelling or defuelling of the aircraft. |   |   |