



# Comment-Response Document (CRD) 2018-04

RELATED NPA: 2018-04 — RELATED OPINION: No 08/2022 — RMT.0325 (OPS.057(a)) & RMT.0326 (OPS.057(b))

23.9.2022

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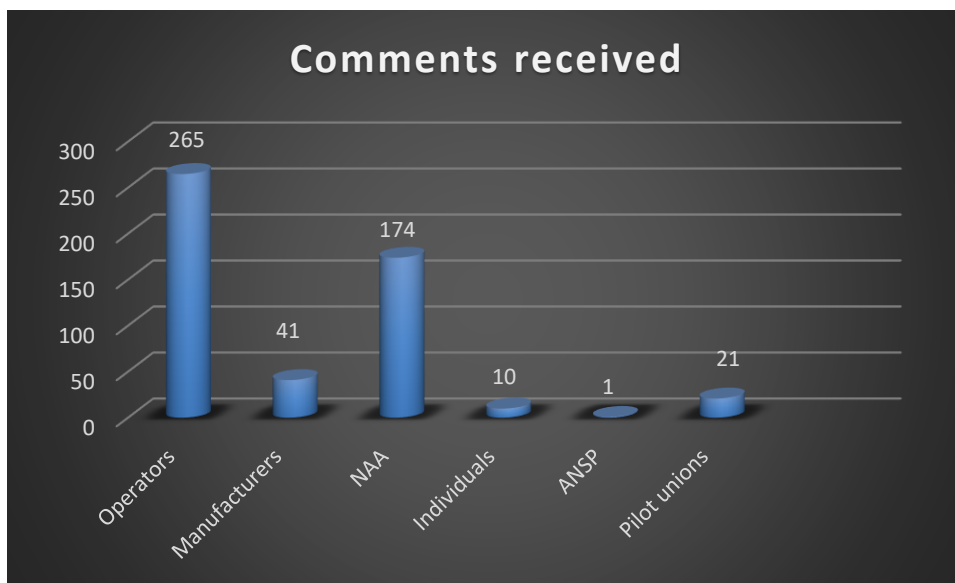
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## 1. Summary of the outcome of the consultation

NPA 2018-04<sup>1</sup> on the proposed amendments to Regulation (EU) No 965/2012 (the 'Air OPS Regulation') essentially in the context of helicopter emergency medical services and public interest sites received 512 comments from 44 commentators.

174 comments were submitted by national aviation authorities (NAAs), 265 comments by helicopter operators and their associations, 10 comments by individuals, 1 comment by an air navigation service provider (ANSP), 21 comments by pilot unions, and 41 comments by manufacturers, as shown in the bar chart below:



The comments received were aggregated into topics which were discussed in groups of experts during the period April 2021–October 2021.

The following comments were processed separately by EASA:

- general comments including supportive comments,
- editorial comments,
- duplicate comments,
- comments to the explanatory note,
- comments related to maintenance,
- comments related to destination alternates.

After considering the comments received, the main changes to the proposed amendments of the NPA are as follows:

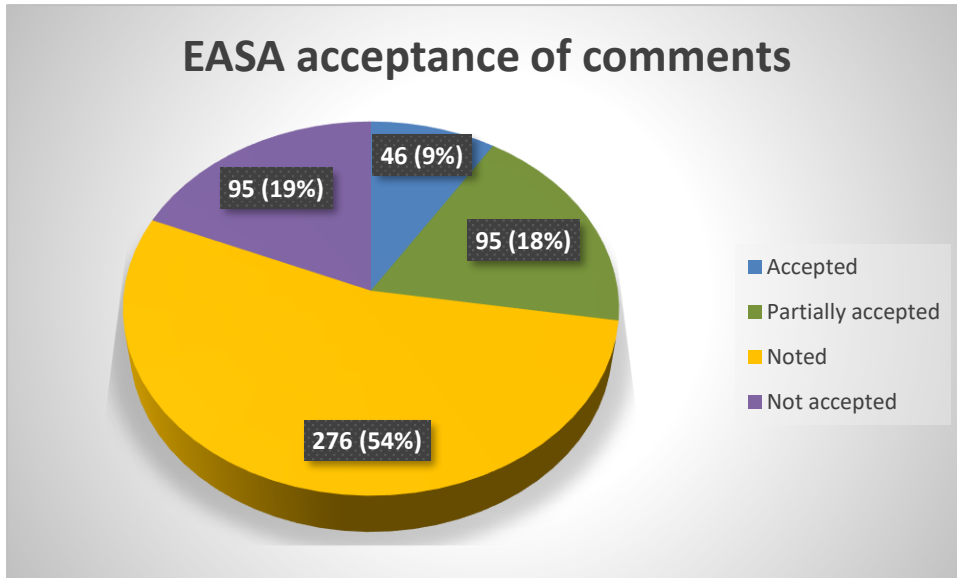
- several minor improvements to all parts of the HEMS requirements;
- performance at high altitudes;

<sup>1</sup> [NPA 2018-04 - Helicopter emergency medical services performance and public interest sites | EASA \(europa.eu\)](#)

- autopilots;
- the exemption for flying at high altitudes was restricted in terms of scope and backed by available scientific evidence.

The amended text is available in EASA Opinion No 08/2022<sup>2</sup>.

The pie chart below shows the statistics on comment acceptance by EASA:



<sup>2</sup> [Opinions | EASA \(europa.eu\)](#)

## 2. List of discussion topics and number of comments received

### Topics that were addressed in expert groups

Topic	Nr of comments
Definition and scope of HEMS	27
Definition of HEMS operating site	3
HEMS operating site dimensions	6
HEMS operating site illumination	2
HEMS operating base	4
Public interest sites	56
Performance	49
VFR minima	70
NVIS	13
Crew composition	24
Flight crew training	27
TCM seating	16
TCM training (including primary tasks)	56
Autopilots	18
Moving maps	11
HEMS with human external cargo (HEC)	24
Oxygen including the following subtopics:	
<i>Oxygen 1 — rules for non-complex versus complex helicopters</i>	10
<i>Oxygen 2 — nasal cannulas</i>	6
<i>Oxygen 3 — high-altitude flight with no oxygen</i>	22
Other additional equipment (attitude indicator for day VFR, radio altimeter, etc.)	2
HEMS risk assessments	4
GM1 SPA.HEMS.100	10
Other recommendations	5

### Other topics:

Topic	Nr of comments
Destination alternates	7
Maintenance	7



### 3. Conclusions of the comment review by topic

#### 3.1. Definition and scope of HEMS

##### Comments requesting that sling load operations be excluded from the definition of 'HEMS'

The comments have not been accepted.

If an authority wants to exclude rescue operations using the cargo sling, it can define them as 'State or similar services' and remove them from the scope of the applicable EU regulations.

Sling load operations must be kept within the scope because some countries rely on the HEMS regulations and operate with the cargo sling.

##### Comments requesting that mountain rescue operations, or rescue operations other than search and rescue (SAR), be excluded from the definition of 'HEMS'

The comments have not been accepted.

If an authority wants to exclude rescue operations from HEMS, it can define them as 'State or similar services' and remove them from the scope of the applicable EU regulations.

Rescue operations other than SAR must be kept within the scope because some countries rely on the HEMS regulations for such activities.

##### Comments requesting that the definition of HEMS exclude some operations conducted with single-engined helicopters

The following cases were discussed:

- *Chairlift evacuation:* Cases where a single person is transported externally from one chairlift to another to execute the specialised task of helping passengers of the chairlift abseil down and evacuate. This activity is compatible with SPO.
- If persons need to be flown out of the chairlift because abseiling is not the preferred option, then HEMS requirements should apply.
- Avalanche supplies to a site that had previously been surveyed by the HEMS helicopter: Such flights should be regulated under CAT or HEMS requirements, unless they are considered 'State or similar services' by the State. See above. In case of urgent need of avalanche supplies, the HEMS requirements applicable to flights to pre-surveyed sites should apply. See also topic 3.7 'Performance'.
- Major disasters: See topic 3.22 'GM1 SPA.HEMS.100'.

##### Requests to make the new definition of HEMS more inclusive

The definition of HEMS with regard to the following cases:

- Uncertainty as regards the situation of the patient.
- The case where there is no emergency yet, and the person cannot be rescued by surface transport, and the flight cannot take place under CAT because a HEMS alleviation is required.

The definition ensures that the medical dispatcher defines the urgency, and the operator operates under HEMS or not based on the dispatcher's assessment. In the case where the rescue mission is dispatched as HEMS, it can always be completed under HEMS.



This does not require a change in the definition.

This approach is confirmed by the (unamended) GM5 Annex I Definitions, and the amended GM1 SPA.HEMS.100 on air ambulance.

The expert group finally reviewed the case of rescue of slightly injured persons at some ski resorts where the use of a helicopter is preferred over snow mobile. This case is further developed in topic 3.7 'Performance' and does not require a change in the definition of HEMS.

### 3.2. Definition of 'HEMS operating site'

The proposed definition clearly includes all sites used for HEMS HEC, including the helicopter hoist and the cargo sling. Conclusion: No change to the definition of 'HEMS operating site'.

### 3.3. HEMS operating site dimensions

The current text (which includes minimum site dimensions) and the NPA proposal (which does not) were reassessed based on the comments received.

The cases for deleting the minimum site dimensions are as follows:

- The current minimum dimensions do not work in a three-dimensional environment such as mountains, or obstacles (natural terrain and slope) will exist within the operating site.
- Such distances cannot be measured precisely from the air.
- They do not make sense when hoisting or when using the cargo hook.
- There is a risk that the pilot will be liable in case of an accident.

The cases for maintaining the minimum site dimensions are as follows:

- Minimum dimensions make sense in the context of non-mountain HEMS.
- Even with minimum dimensions, pilots do land in very tight places despite the existence of comfortable sites nearby. They sometimes exceed their own abilities.

The following way forward was defined:

- The current high-level objective proposed in the NPA remains as it is with a minor change in the wording to better introduce the AMC.
- The current minimum dimensions are moved from GM to AMC level.
- In addition, an alternative to the current minimum dimensions is proposed in the same AMC. The alternative enables operators to define their own minimum site dimensions, including no minimum dimensions, e.g. in the context of HEMS HEC based on a risk assessment, mitigation measures, operating procedures implementing such mitigation measures, and training towards these procedures.

### 3.4. Illumination of HEMS operating sites

The rationale behind the comments received has not been accepted. However, the objective of the HEMS operating site illumination was introduced at implementing act level as follows:

- The lighting system should adequately illuminate the landing site and surrounding obstacles from the helicopter.

Illumination from the ground can be useful but may sometimes be counterproductive. The only way to see cables is to illuminate them from the helicopter. In addition, if the cables are lit from the ground, the helicopter light has to be stronger than the ground lights.



### 3.5. HEMS operating base

It was decided that the facilities that are necessary are the ones needed to make the plan work. The plan is often a return to the operating base, although pilots should never assume that they will be able to return.

Supplemental weather information such as camera-based solutions to derive ceiling and visibility information are a valid option. Some operators already have them in place. The proposal to use supplemental weather information for helicopter operations has already been developed in the context of fuel planning under IFR. A reference is made to the relevant points of AMC1 CAT.OP.MPA.192.

As in AMC1 CAT.OP.MPA.192, the operator may also make use of the certified weather information available at a local aerodrome, if relevant to the HEMS operating base. In the context of night VFR flights, the objective that the weather is relevant is maintained but there is no maximum distance.

### 3.6. Public interest sites (PISSs)

#### Description of the issue

Unless otherwise specified, the public interest sites that are discussed in this section are those located in congested hostile areas, which cannot be operated in performance class 1 (PC1) and attract alleviation from the performance requirements. These are often referred to as 'approved public interest sites' in the NPA.

There are approximately 600-700 such sites in Germany. From the data obtained during the comment review, there should be less than half this number in all other EU Member States.

#### Comments to the impact assessment and other general comments

##### *Comment on whether the measures are proportionate to the risk*

The risk of an accident at an approved public interest site due to a sudden engine power loss during take-off is extremely low but the consequences can be catastrophic. The consequences of several deaths, or a single third-party death, may not be acceptable to some EU Member States. These consequences include the negative media attraction and the reputational damage to the industry.

The comment seems to be an assessment of the current regulations applicable to commercial air transport rather than a comment to the NPA proposal on public interest sites.

##### *Comments on the risk that a hospital is no longer served by helicopter services due to the proposed amendments*

The issue seems essentially related to the cases where the obstacle environment deteriorates. The issue could also be related to newly built hospitals which were constructed after October 2014.

In both cases, the root cause is likely to be that the hospital and/or the local community failed to prevent the deterioration of the obstacle environment, or failed to properly design a new hospital landing site.

The problem is likelier to occur at small hospitals where patients are picked up and taken to bigger hospitals.

The likeliest outcome in such cases is that the hospital will no longer be served by helicopters.



In some cases it is not worth risking the pilot's and the medical crew's lives to save a person. In other cases, the HEMS commander will decide whether it is necessary to violate the rules to save a single person.

Article 71 flexibility provisions may provide for a temporary solution to formally allow operations in such cases where a public interest site alleviation no longer does.

#### *Comment requesting to phase out all public interest sites*

Not accepted as non-realistic.

#### *Comments requesting no amendments*

The 'no change' option has not been accepted as it is considered a missed opportunity to improve safety.

#### *Comments on the MOPSC threshold*

The introduction of the MOPSC of 6 might have been made for consistency with JAR.OP.3.005(g) at the time. It is a valid criterion for public interest sites that can be used not only in the context of HEMS, but also potentially in the context of air ambulance. No change.

#### Comments regarding the phasing out of the performance alleviation at public interest sites established after October 2014

At the time of the drafting of the NPA, the proposed time frame was 5 years. This time frame is confirmed. The starting point of the 5-year period is defined as the date of the publication of the amending regulation.

#### Scope of the CAT.POL.H.225 alleviation

Commentators suggested the scope of the alleviation should not be limited to the cases where 'site dimensions' or 'obstacle environment' is an issue. Commentators suggested elements such as temperature, altitude, turbulence, swirling winds, and other performance issues could trigger an alleviation.

#### Altitude, temperature, and other performance issues:

If the operating mass and performance of the helicopter allows take-off and landing from/at a clear area with no obstacles, then the performance issue is related to the obstacle environment and no change is needed. If the operating mass is any higher, then the climb gradient of 8 % at  $V_{\text{toss}}$  in still air will not be met. No change is needed.

#### Turbulence:

Not factored in for performance calculations. Performance class 1 (PC1) criteria are not affected by turbulence, although the handling characteristics and the real flight path might. No change.

#### Swirling winds:

Unless the wind swirls more than 180 degrees, there are take-off and landing options with no tailwind component. These options may not be available due to the obstacle environment, in which case hospitals fall within the scope of the alleviation with no change.

Swirling winds of more than 180 degrees: In accordance with point CAT.POL.H.105, any reported tailwind component shall be taken into account for take-off. With more than 180 degrees of variations, there will be a tailwind component regardless of the heading used





for take-off. Limitations associated with Category A certification may not be met. PC1 may not be possible regardless of operating site dimensions or obstacle environment. This is seen as a corner case that might happen only during very short periods of time at very peculiar hospital sites in congested hostile areas. No change.

#### Mitigation of the 8 % climb gradient capability at Vtoss in still air

No direct comments were received to the proposal to maintain the 8 % mitigation. However, the comments received on altitude, temperature and other performance issues were understood as requests to reduce or delete the 8 % criterion:

- For public interest sites at or below 3 000 ft, modern helicopters can meet the 8 % climb gradient capability on a hot day.
- For the identified public interest sites above 3 000 ft, either PC1 could be met at the site or the site could be considered non-congested hostile environment. None needed a derogation from the performance requirements under point CAT.POL.H.225.

Conclusion: No change.

#### Directory of public interest sites

Commentators requested that NAAs make their directories of public interest sites accessible to the public.

It was agreed that the NAAs should make the following information publicly available:

- the list of approved public interest sites on their territory;
- point of contact of a person in charge at the public interest site.

It was concluded that the NAAs may make more information public if they wish to do so and if they own the data. In cases where more than one operator uses a hospital site, and the data was provided by one operator, this may not be the case. Therefore, the sharing of information may not be possible.

The description of all hospital sites and their obstacle environment in the national AIPs is seen as best practice.

#### Worsening of the environment at approved public interest sites

The proposal was reworded following the comments received.

The intent remains that a public site approval should not come with excessive freedom for the entity in charge of the public interest site to deteriorate the obstacle environment. If the obstacle environment deteriorates to an unacceptable level, the operations shall be discontinued.

It was acknowledged that there will inevitably be cases where this will happen (e.g. landing site located at the limits of the hospital grounds and neighbours deciding to build a tall obstacle). In such cases, the risk is that the helicopter will fly to another hospital. Article 71 exemptions provide a temporary solution.

The NPA proposes that operators notify new obstacles and the authority assess them. Following the comments received, it was decided that operators not only notify new obstacles, but they also:

- assess the safety impact of such new obstacles on their operations;
- review the site-specific procedures and modify them as necessary;
- discontinue operations at the site if necessary;
- inform the authority of all the above.



The NPA proposal is maintained as a second layer of control. Authorities shall decide to revoke an approval, if necessary, regardless of the operators' decision.

Guidance is introduced for authorities as regards of temporary obstacles.

There should be some flexibility as regards the interpretation and decision-making by the authorities. The amount of guidance provided is considered sufficient.

#### Cross-border HEMS/air ambulance with approval and endorsement process at public interest sites

The following was assessed following the comments received:

The local authority in charge of endorsements will have to review at least some of the elements in point CAT.POL.H.225. That the local authority reviews all criteria of (a)(1) to (a)(5) and (b), and consequently (c) of point CAT.POL.H.225 ensures that the process remains simple and not split between authorities. The operator direct liaises with the local authority during the process, which may also help.

Separately, EASA has received requests for the high-risk cross-border SPO endorsement and approval process to converge towards point ARO.OPS.220.

The conclusion is no change.

The new process for changes to the obstacle environment was also reviewed in the case of cross-border operations.

It was decided that the competent authority of the operator remains in charge of the changes in the obstacle environment, because of the following:

- an endorsement has no expiry date;
- only the competent authority of the operator may revoke an approval or restrict its scope.

### **3.7. Performance**

#### Meaning of 'equivalent' in 'Category A certification or equivalent'

'Equivalent' is always 'as determined by the Agency'. See GM1 CAT.POL.H.200;300;400. No change.

#### Performance class 1 or 2 with the current fleet of HEMS helicopters that meet Category A certification criteria and that are available in mountain areas

The 10 000 ft density altitude threshold was reviewed.

It was assessed that with several helicopter types in the current fleet, the requirement to meet the 150 ft/minute climb rate at best climb speed ( $V_y$ ) and maximum continuous one-engine-inoperative power could be met up to 7 000 ft on a hot day. Above this altitude, these helicopters only meet performance class 3 (PC3) criteria.

It was decided to amend the altitude threshold accordingly.

Considerations regarding helicopter performance at high altitudes: The following were considered.

#### *Safety data*

The available safety data, including that provided by the commentators, was considered and analysed.

#### *Safety issues for high-altitude HEMS operations*

Safety performance is difficult to be assessed in the context of mountain operations but the following could be said:



Performance class 3 (PC3) with a single-engine helicopter is more vulnerable to an engine failure than PC3 with a Category A certified helicopter that is restricted to PC3 due to the high altitude.

Rotor downwash is an issue with larger Category A helicopters, but negative consequences can be avoided with procedures and training.

All-engine-operative performance margins (including tail rotor effectiveness margins) are the greater safety asset at high altitudes. The highest-performance twin engines can be compared to the single-engines operated in mountain areas only if both are loaded with heavy medical equipment. In all other cases, single-engined helicopters will offer better safety margins at the highest altitudes.

The effect on safety of a small cabin space was considered. It was decided that the HEMS TCM should have a forward-facing front seat available, irrespective of cabin space and of the number of engines. See also topic 3.12 'TCM) seating'.

#### *Safety issue — Modern avionics*

Avionics were not considered in the discussion on performance. They can also be installed on single-engined helicopters.

#### *Safety issue — Operations under IFR and night VFR*

Such operations were not considered in the discussion on performance. The applicable commercial air transport (CAT) regulations apply to HEMS. They require Category A certified helicopters for night VFR and IFR flights. Performance regulations applicable to CAT and not specific to HEMS are not within the scope of this rulemaking activity.

#### *The medical aspect*

Commission Implementing Decision (EU) 2020/437<sup>3</sup> on vehicles used for air ambulance, including helicopters used in HEMS, refers to Standard EN 13718-2:2015. The medical world clearly requires on-board medical equipment and cabin volume that would usually not be provided by single-engined helicopters.

However, in specific cases such as mountain operations, helicopters not fitted out with medical equipment or fitted out only with light medical equipment are likely to be the preferred option, if more practical for any reason.

#### *The economic aspect — from the perspective of operators*

From the perspective of the business models of the operators, it is best to maintain the threshold between Category A certified helicopters and helicopters that are not — where it currently is.

Based on the business models of the operators, some find it more efficient to provide a helicopter with heavy medical equipment that can meet all mission requests and avoid the inefficiencies of the rendez-vous system as described in JAA TGL 43. Other operators believe that different helicopters could meet different needs.

#### *Economic issues — from the perspective of the organisation of medical services*

It was considered that the regions with the highest altitudes are the likelier to be structurally and economically weaker, and are also the likelier to have to face high peak medical demand during the touristic (e.g. snow) season, as described in JAA TGL 43. In such regions, it makes sense to offer a

<sup>3</sup> Commission Implementing Decision (EU) 2020/437 of 24 March 2020 on the harmonised standards for medical devices drafted in support of Council Directive 93/42/EEC (OJ L 90I, 25.3.2020, p. 1) (<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32020D0437&qid=1662989444363>).

lower-cost HEMS service with single-engined helicopters, also considering the fact that the safety benefit of Category A certified helicopters is not so obvious at the highest altitudes.

*Additional considerations: medical dispatch and market forces*

Medical decisions can be biased towards dispatching the cheapest helicopter, or towards dispatching any helicopter available for the mission and willing to accept it.

HEMS operations with helicopters not certified as Category A or equivalent

Based on the above, it was decided that HEMS operations could be conducted with helicopters not certified as Category A or equivalent in the following cases:

- rescue operations that are not included in the current scope of HEMS;
- HEMS operations above 8 000 ft.

Safety mitigation measures for HEMS operations with helicopters not certified as Category A or equivalent

*Mitigation measures already available under CAT*

HEMS operations with helicopters not certified as Category A or equivalent are restricted to day VFR only.

*Mitigation measures already available in other points of Subpart SPA.HEMS*

The HEMS TCM should have a forward-facing front seat available. The criteria are reminded for operations with smaller non-Category A certified helicopters.

*Additional safety mitigation measures*

An additional criterion was introduced to ensure that a helicopter not certified under Category A should be expected to complete the mission before sunset at the time of dispatch. This creates a time margin of 30 minutes for the completion of the mission before the night.

Considering the urgency of HEMS flights and the nature of rescue operations and of mountains, the flight over hostile terrain is unavoidable. A CAT.POL.H.420 approval is explicitly required.

A minimum altitude is set at 3 000 ft for non-medical rescue operations, for compatibility with point CAT.POL.H.420 and also because a Category A certified helicopter should be available below this altitude.

Upper torso restraints and crash resistant fuel systems: Category A certified helicopters lack such features just as much as non-Category A helicopters. However, the combination of high exposure to an engine failure and the lack of such features should be avoided.

The required features are those recommended for retrospective application by the FAA Rotorcraft Occupant Protection Working Group (ROPWG) Task 6 Recommendation Report<sup>4</sup>.

A procedure should be available in the case that where a non-Category A certified helicopter unexpectedly cannot complete the mission as initially planned. If necessary, a Category A certified helicopter should be dispatched to complete the mission. It was decided not to describe a rendezvous system in detail.

<sup>4</sup> [https://www.faa.gov/regulations\\_policies/rulemaking/committees/documents/index.cfm/document/information/documentID/3722/](https://www.faa.gov/regulations_policies/rulemaking/committees/documents/index.cfm/document/information/documentID/3722/)

*Additional criteria introduced to ensure that helicopters not certified as Category A or equivalent will not be operated abusively in operations foreseen to remain the realm of Category A helicopters*

For medical rescue operations, the following requirement is added: at dispatch, it is required to ensure that a Category A certified helicopter is not available or not suitable for dispatch. All data used for this procedure is to be recorded and made available to the competent authority.

#### Transportation of slightly injured persons at ski resorts

The discussion addressed a non-negligible volume of helicopter operations at certain ski resorts (not far from 1 000 missions per year at 4 specific ski resorts that communicated their data). The operations are borderline between CAT and HEMS.

The activity can be described as follows:

- Medical care is not needed during transportation and the destination is usually either a road ambulance pick-up point or a medical practice at the ski resort.
- Some ski resorts deal with equivalent injuries with snow mobiles rather than with helicopter services.
- The patient is usually taken on board at predefined and pre-surveyed pick-up points and predefined destinations.

The case for addressing the issue:

- Despite the very relative level of urgency, it could make sense that the entire mountain rescue community applies the same regulations.
- Ski resort rescue would be required to implement HEMS regulations (without the requirement to be certified as Category A or equivalent). An additional layer of regulation would apply, and the service would be made safer.

The difficulties in addressing the issue:

- There is usually no emergency. HEMS regulations applicable to urgent flights would become applicable to non-urgent flights. Other criteria would be needed to differentiate HEMS from non-HEMS missions.
- Loopholes would be likely to be introduced. A definition of slight injury might be introduced to distinguish such flights from HEMS flights, but they are hard to define. A criterion based on 'the destination is not a hospital' could be introduced, but 'hospital' may have different meanings in different countries or health systems.
- Air ambulance and other CAT operations might be included in the scope of HEMS.
- Some standard HEMS operators may want to make use of any unclear criteria to fly HEMS with single-engined helicopters.

The case for not addressing the issue and leaving it under CAT:

- The use of pre-surveyed sites in non-urgent conditions belongs to the CAT risk profile and does not require the alleviation or risk mitigation developed in the HEMS regulations.
- As it is very unlikely that the scope of such flights can be very well defined without undesired consequences such as extending the scope of HEMS to air ambulance, it is likely that medical dispatchers will still have the option to dispatch such flights under CAT. Market forces will then come into play. A HEMS flight will always cost more than a CAT flight, even if the number of engines and the number of crew members are the same.



It was decided that the ski resort rescue activity would not be specifically addressed in the regulation. It is likely that this activity will continue: under HEMS in cases where the assessment of the injuries or the uncertainties regarding the injuries require that a medical person is urgently flown to the patient, and in other cases with snow mobiles and with helicopters operated under CAT.

### 3.8. VFR minima

#### Structure of the implementing act and the related AMC and GM

The comments requesting that the table that describes the VFR minima should be reintroduced at implementing rule level have not been accepted. The table remains at AMC level.

The AMC level ensures consistency with the IFR minima, and introduces more flexibility to accommodate new technologies currently under development that might affect VFR minima (e.g. EVS, CVS). See also topics 'offshore HEMS', 'well-lit conurbations' and 'flat terrain, no artificial obstacle and predefined routes' below.

The risk that an operator introduces an unreasonable alternative means of compliance, is granted an approval from a weak authority, and an incident happens before EASA assesses it is considered remote.

#### Wording of the draft implementing act

Following the comments received, the implementing act is reworded to better introduce the AMC and to refer to 'applicable airspace requirements' instead of a given reference to the SERA Regulation.

The improved wording clarifies that components of the VFR operating minima that are not listed remain unaffected. This is also reminded in a new GM.

#### Structure of Table 1: 'HEMS VFR MINIMA'

The comments received on the structure of Table 1 'HEMS VFR MINIMA' have not been accepted.

The minima for multi-pilot operations and for single-pilot operations + technical crew members remain aligned, based on:

- a crew configuration of 2 persons in the cockpit; and
- sufficient technical crew training as introduced by the proposal.

#### Content of Table 1: 'HEMS VFR MINIMA' — ceiling versus cloud base

Following the comments received:

- 'ceiling' is maintained by day;
- 'cloud base' is used in the table by night;
- a footnote is inserted to describe in which particular cases the 'ceiling' may be replaced by 'cloud base' during the dispatch phase; dispatch criteria should be described in the operations manual, as proposed in the NPA.

By day, the pilot should be able to see the clouds and avoid entering in them.

#### Content of Table 1: Night VFR ceiling and visibility

The comments to reduce the night VFR minima have not been accepted. No change.

The comments requesting more credit for multi-pilot operations, or higher minima for single-pilot operations with a technical crew member (TCM) have not been accepted either. In single-pilot



operations with a TCM, it is the TCM training that becomes important, and the extended training proposed in the NPA allows for the proposed values.

#### Content of Table 1: Night VFR ceiling and visibility within a well-lit conurbation

In the case where the operation of a given helicopter is contained within the well-lit area of a conurbation:

- if the helicopter is NVIS equipped and the operator is NVIS approved, the crew has access to lower minima by night, but they will never use the NVG;
- if the operator is not NVIS approved, the crew has higher weather minima; this appears to be unfair.

Two acceptable options are, therefore, available as follows:

- Option 1: Do nothing because the issue seems to be limited to London.
- Option 2: Extend the validity of the NVIS column to well-lit conurbations.

Option 1 has been implemented.

#### Day VFR visibility

The comments requesting the increase of the day VFR visibility minima have not been accepted. The proposed minima are achievable together with the proposed TCM training.

#### Comments received on VFR minima in the context of point-in-space (PinS) approaches and departures

Following the comments received, the format of the table was fully reviewed so that the applicable minima could be read directly from the table. The text that introduces the table remains the same.

The values of the VFR operating minima in Tables 2 and 3 were also reviewed based on the comments received on NPA 2018-04 *Helicopter emergency medical services performance and public interest sites*<sup>5</sup> and on NPA 2019-09 *All-weather operations — Helicopters and specialised operations*<sup>6</sup>, with the help of the expertise available in the context of the AWO rulemaking task.

#### Vertical separation from obstacles during the cruise

Following the review of the comments, the minimum vertical separation from obstacles was fully reviewed. By day, the minimum vertical separation is made compatible with the ceiling of Table 1 with minimum margins.

By night, the minimum vertical separation from obstacles is made compatible with the cloud base of Table 1 while allowing sufficient margins from obstacles and from clouds.

#### HEMS minima in the context of offshore operations

The comments received have not been accepted. No change to the HEMS operating minima in the context of offshore operations.

The reduced minima in point SPA.HOFO.130 would apply only in the following case: 'when flying between offshore locations located in class G airspace where the overwater sector is less than 10 NM'. The operating minima available in Subpart K (SPA.HOFO) apply if these conditions are met. However, offshore HEMS are likely to start from an on-shore HEMS base and bring patients back to the shore. The SPA.HOFO minima usually do not apply.

<sup>5</sup> <https://www.easa.europa.eu/en/document-library/notices-of-proposed-amendment/npa-2018-04>

<sup>6</sup> <https://www.easa.europa.eu/en/document-library/notices-of-proposed-amendment/npa-2019-09>

Moreover, the SPA.HOFO minima are established in the context of flights that remain away from the shore. They cannot be extended to the case of a HEMS mission to bring a patient back from offshore. The return to the shore is the determining factor. The HEMS minima are adapted to this phase of flight, but the offshore minima are not. 500 ft is not high enough to clear the coastline depending on its nature (e.g. cliff) and on the existence of any on-shore obstacles. In the vast majority of cases, the transition from one set of minima to the other cannot be ensured.

#### HEMS minima by night in the context of extended forests with flat terrain, no artificial obstacles and predefined routes

The comments received have not been accepted. No change to the HEMS operating minima in this context.

### **3.9. Night vision imaging systems (NVISs)**

#### Offshore HEMS

The group discussed the case of NVIS usage in the context of offshore HEMS (for those Member States that do not call this activity 'search and rescue' (SAR)).

Requirement to have NVIS capability: Offshore locations tend to be heliports, not operating sites. NVIS would not be required under the NPA proposal. No change. For operators who are NVIS capable, they are free to use the goggles in flipped-up or flipped-down position. NVG may also help over water. No change.

#### Cultural lighting

The wording is clear for NVIS pilots and operators but unclear to others. The NPA proposed to introduce it in a requirement applicable to all operators. As proposed by a comment, the word 'cultural lighting' is deleted from the requirement and replaced by its meaning for clarification.

#### Comments suggesting that NVISs should not be mandated

The comments have not been accepted by the expert group. No change.

However, a transitional period of 3 years will be proposed to give operators time to make their helicopters NVIS compatible, and obtain import licences (or other local requirements) for the NVG.

#### Comments discussing no credit, or credit, for NVISs

The comments have not been accepted.

The NPA proposal increases the minima for non-NVIS at night. It maintains them if the operator is NVIS capable and both crew members occupy flight crew seats and are trained for such operations. If the previous night HEMS minima were safe, then the current NVIS minima will be safer.

Regarding NVG reliability/failure rate:

NVG are certified under ETSO 164 or TSO 164a. Both refer to DO 275. Both require that the total failure of a NVG is a major condition based on the concept of operations that there is no credit for NVIS. This requires that the design demonstrates a failure rate no higher than  $10^{-5}$  per flight hour.

NVG might offer better reliability as they have two independent tubes with separate battery packs, but common points of failure cannot be excluded.

In case of a NVG failure: One of the crew members has a functional NVG. The crew is trained for this. The limited angle of view of the NVG remains an obstacle.





The expected failure rate of a NVG would allow for operational credit that would lead to limited exposure in case of NVG failure. The proposal leads to no exposure. No change.

#### Recency for NVIS in the context of HEMS

The current recency requirement of 3 flights within 90 days is probably insufficient. The following was discussed.

- HEMS pilots are likely to be the least affected of all NVIS pilots because they fly NVIS the most. The problem will be more acute beyond HEMS operations. Also, a HEMS operator might decide, based on its HEMS and NVIS risk assessment, to define more stringent recency requirements.
- NVIS recency will be lost way before the (unaided) night recency is lost. Point FCL.060 requires just 1 flight per 90 days. Increasing the recency requirements for NVIS comes with a risk that pilots who lose recency will fly unaided night VFR until they can regain recency with a NVIS instructor. The group agreed that a pilot would be better off with NVIS and without recency than flying unaided night VFR.

The following options were considered:

- 1: Increase recency requirements for all NVIS operators;
- 2: Give it a thought until next meeting;
- 3: Close the issue with no change.

Conclusion: No change.

#### Use of NVG of different models

It was decided to make the requirements performance based in order to introduce more flexibility and remove obstacles for operators that renew their NVG for more recent models.

### **3.10. Crew composition**

Licensing of the HEMS TCM: The comments have not been accepted. See topic 3.13 'TCM training (including primary tasks)'.

Instrument ratings in night VFR: The comments have not been accepted. If there are no IFR operations, and pilots get no practice aside the recurrent checks, this may create a false sense of security.

Mitigating measures until an autopilot is installed, for night flights with 1 pilot and 1 HEMS TCM: Not accepted. The autopilot is an additional safety feature which will take place when the time comes. No change.

HEMS TCM not in the front seat: Whether by day or by night, the reduced HEMS minima do not apply. No change.

Limitations regarding crew composition of 1 single-pilot + 1 TCM under VFR by night:

- If the TCM is not on board or is busy in the cabin with medical duties: this should not be the case at night if HEMS operating sites are involved. The additional risks are as follows: The obstacle environment during take-off from the operating site, and the weather conditions during the cruise. Night VFR single-pilot with no help from the TCM should be limited to flights to/from hospitals or aerodromes, which are already possible in CAT Air Ambulance. The proposal has been amended accordingly.



- If neither the HEMS TCM nor the patient nor the medical team is on board, then the return flight from the operating site becomes a ferry flight and needs not be operated under HEMS rules. No change.
- Specific geographic areas were discussed. TCM training is a better option. GM1 SPA.HEMS.130(e)(2)(ii) is deleted for consistency. No other changes are introduced.

Day VFR with legacy helicopters where the unfolding of the stretcher prevents the TCM from sitting in the front seat: The provisions enabling such flights are deleted.

Day VFR at hospitals: The regulation is reworded to ensure that operations to non-surveyed HEMS operating sites should take place with a crew of 2 pilots or with 1 pilot and 1 HEMS TCM. Operations at hospitals should not be restricted.

### 3.11. Flight crew training

#### HEMS commander experience (other than by night)

Despite the comments received, the required experience of the commander remains defined at AMC level. The multi-crew experience of pilots was aligned on the experience requirement defined in EASA Opinion No 02/2021 *All-weather operations and review of crew training requirements*<sup>7</sup> and in the amending regulations (EU) No 2227/2021<sup>8</sup> and (EU) No 2237/2021<sup>9</sup> that followed. A typo has been corrected on the minimum experience of the HEMS commander.

#### Experience with night HEMS

Following the comments received, the minimum night experience to fly in the following conditions was reassessed:

- night HEMS to operating sites;
- night HEMS in the limited context of returning to a hospital or to base after nightfall.

The different ways of gaining the relevant experience and skills were also assessed.

50 hours of experience by night is the minimum experience requirement for a HEMS commander involved in HEMS operations by night, but credit can be granted for simulator training time in the context of HEMS. Training towards approaches, landing and taking off by night at a HEMS operating site is also considered necessary.

#### IMC training

Following the comments received, the implementing regulation was amended to better introduce the objective of the training, which is that the pilot is capable of escaping unintended IMC conditions. The performance required is also introduced in the implementing regulation as ‘training to proficiency’, as defined in Annex I (Definitions).

The wording of the AMC was reviewed and amended for clarity and to show that the FSTD should be the preferred training device.

<sup>7</sup> <https://www.easa.europa.eu/en/document-library/opinions/opinion-022021>

<sup>8</sup> Commission Implementing Regulation (EU) 2021/2237 of 15 December 2021 amending Regulation (EU) No 965/2012 as regards the requirements for all-weather operations and for flight crew training and checking (OJ L 450, 16.12.2021, p. 21) (<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32021R2237&qid=1660833811679>).

<sup>9</sup> Commission Implementing Regulation (EU) 2021/2227 of 14 December 2021 amending Regulation (EU) No 1178/2011 as regards the requirements for all-weather operations and for instrument and type rating training in helicopters (OJ L 448, 15.12.2021 p. 39) (<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32021R2227&qid=1663145431535>).

The frequency of the training for point (7) of AMC1 SPA.HEMS.130(d) on the use of automation was reviewed, rediscussed, and modified so that point (7) will need to be reviewed every 12 months rather than 6 months.

This will enable:

- operators with more than one variant and with different avionics suites and autopilots to alternate the training between variants;
- operators that fly only one type to alternate training sessions between a full flight simulator (FFS)/helicopter where the training towards the use of the available automation is possible, and a flight and navigation procedures trainer (FNTP).

### 3.12. Technical crew member (TCM) seating

*This section considers the seating of the HEMS TCM when actively assisting the pilot and when not being occupied with medical tasks in the cabin.*

It was decided that the HEMS TCM should be seated where they are needed the most. However, different minima shall apply, as proposed in the NPA. The pilot should be able to decide the best position for the HEMS TCM based on the challenges expected during the mission.

Based on the above, the HEMS TCM does not always need to be seated in the front seat at night.

IFR/IMC scenarios were reviewed. Also in this case, the best position for the HEMS TCM might depend on the IFR operating procedures and on any non-primary tasks required from the HEMS crew member.

However, it should only make sense that the HEMS TCM is located in the cabin if HEMS HEC operations with the hoist or the cargo sling are likely to take place.

Regarding legacy helicopters where the deployment of the stretcher requires the HEMS TCM to sit in the cabin and the co-pilot's seat to be stored in the cargo bay: such operations should be discontinued based on the general principle above, and considering the decision made to give the final say to the pilot.

Regarding the proposal that the HEMS TCM can relocate from the co-pilot's seat to the cabin and back during the flight: the proposal is supported if it does not preclude the other options. The following should remain possible:

- 3 crew operations (2 pilots + HHO TCM or 1 pilot + 1 HEMS TCM + 1 HHO TCM);
- 2 crew operations with 1 pilot and 1 HEMS & HHO TCM located at the back at the start of the flight, as proposed in the NPA;
- 2 crew operations with 1 pilot and 1 HEMS & HHO TCM located at the front and moving into the cabin at an intermediate landing site.

Different ways were considered of moving from the co-pilot's seat to the cabin and back: the most relevant procedure should be the outcome of the operator's risk assessment, and the implementing regulation and the AMC should not describe the details.

- Swivel seats.
- Pushing the seat backwards to the point where the crew can move from the cockpit to the cabin while seated, which can be possible on some helicopter types and cabin layouts.
- Walking between the pilot seats without interfering with the console, which might be possible on the largest helicopters.
- Walking outside the helicopter in a hover, which would require a number of conditions such as skids; no dual controls installed; a sliding door; as well as specific procedures and training.

The proposal was reassessed in the context of night VFR. No change.

### 3.13. TCM training (including primary tasks)

#### Primary tasks of the HEMS TCM

It was decided to keep the reading of checklists in the primary tasks of the HEMS TCM when 'seated in the front seat' and maintain it in the optional tasks when in the cabin.

It clarifies that if the TCM is in the cabin, then the reading of the checklist by the TCM is not mandatory but also not forbidden: the HEMS TCM could read a cockpit checklist whereas the response to the checklist would then be conducted in a pure single-pilot way, or it could be a cabin-related checklist.

#### HEMS TCM licensing or equivalent of a cabin crew attestation, including medical fitness

Licensing or equivalent of a cabin crew attestation will not be introduced for HEMS TCMs. A significant part of the training is related to the operator. It would not be efficient to have an initial training that is valid for all operators. Also, the Aircrew Regulation is outside the scope of this RMT.

Medical fitness provisions for the HEMS TCM were rediscussed as part of the review of the comments on HEMS TCM licensing. The current GM has been moved to AMC level and improved.

#### HEMS TCM training — when changing operators

The training needed when changing operators was clarified.

CRM training for technical crew: It was decided to amend AMC1 ORO.TC.115 to ensure all CRM training elements are extended to technical crews, not only for HEMS, but also for HHO and NVIS.

#### HEMS TCM line checks

The default option for the line check is in the helicopter. However, it was decided that in certain conditions, an alternative option could be used, with a line check in two parts:

- a line-oriented evaluation as part of a FSTD session;
- and what cannot be checked in the FSTD would be checked in the second part of the line check at the operating base.

A helicopter flight would not be necessary for this alternative option.

CRM assessment of TCMs: It was decided that TCMs should undergo a CRM assessment and this assessment be deidentified and used for the training improvement feedback loop (and not only for individual improvement).

#### HEMS TCM operator proficiency check (OPC) and aircraft/FSTD training

Pilots undergo an OPC every 6 months, and attend a yearly training session.

TCMs undergo a yearly OPC, and attend a yearly training session. They can do both on the same day when they are at the simulator.

The current requirements do not create additional burden for a TCM to a pilot ratio of 2 to 1. It was decided to maintain the current wording 'reasonably practicable' in order for TCMs to receive FSTD training and checking whenever possible.

It was decided that the 2-hour aircraft/FSTD training focusing on crew cooperation and primary tasks and the OPC are also needed for simple day VFR HEMS.

#### Person in charge of conducting the TCM checking



It was decided to require a suitably qualified commander nominated by the operator. As for flight crews, no additional criteria are introduced. However, for the initial and recurrent training focusing on crew cooperation: the nominated commander should have 350 hours of experience in multi-crew operations (as it is the case for pilots involved in multi-pilot operations).

Only in the case of cabin tasks that do not require crew coordination can the trainer and checker be a suitably qualified TCM.

Inexperienced TCM: The burden associated with the measures addressing inexperienced HEMS TCMs was reassessed as very low. It applies only if all the following criteria apply:

- The operator recruits HEMS TCMs with no previous experience as TCMs and simultaneously pilots are ‘inexperienced’ as in ‘multi-pilot operations’.
- The context is other than starting up a new HEMS operation or a new helicopter type.
- The burden is removed once HEMS TCMs have accumulated 50 missions, which can go really fast.

No change in principle. However, the experience gained during line flying under supervision is now credited towards the 50 missions.

#### Ground training

It was decided to simplify the AMC by maintaining only the main training topics.

The GM provides the details on how to populate the training.

In AMC1 ORO.TC.135, as well as in the HEMS GM, training towards pilot incapacitation is changed to training towards early identification of pilot incapacitation.

### **3.14. Autopilots and stability augmentation systems (SASs)**

SAS specifications: The SAS specifications proposed by the commentators have been accepted.

Autopilots: Based on the comments received, but also considering the time that has passed since the publication of the NPA, the requirement for an autopilot with heading and altitude hold modes was considered.

Such a device would improve safety compared to a SAS. The objective is a safe return to VMC conditions and a safe landing in case of unintended IMC conditions at night.

- This is possible with a SAS (with the relevant training, and sufficient training time to achieve proficiency — see topic 3.11 ‘Flight crew training’).
- It is easier with an autopilot.

Considering the cost of the retrospective application of autopilots on current helicopter fleets, but also considering that all helicopters manufactured for the HEMS market have an autopilot as an option, the requirement for an autopilot is considered only for new-built helicopters 1 year after the publication of the amending regulation.

### **3.15. Moving maps**

#### Interface with the HTAWS rulemaking task<sup>10</sup>

A new standard for on-shore HTAWS will be available soon. The current generation of HTAWS may not comply with it. The new standard may become mandatory as part of the HTAWS rulemaking task.

<sup>10</sup> <https://www.easa.europa.eu/en/document-library/terms-of-reference-and-group-compositions/tor-rmt0708>

In this context: A requirement for increased situational awareness can only be introduced ahead of the HTAWS rulemaking task if the following criteria are met:

- The regulation does not provide specifications for the terrain or obstacle database.
- The regulation does not require a warning system or anything that proved difficult to certify in the context of offshore HTAWS.
- Non-certified systems, such as EFB applications, should be a means of compliance.

#### Compatibility of the NPA proposal with Subpart M (SPA.EFB)

Subpart M (SPA.EFB) has been amended since the publication of the NPA and converged towards the NPA proposal. Moving maps with own-ship position are now compatible with non-installed EFBs in VFR including night VFR.

Regarding IFR: Moving maps with own-ship position on an EFB are not compatible with IFR unless modern avionics are available.

Based on the previous section 'Interface with the HTAWS rulemaking task', the proposed requirements are amended and IFR are now excluded from their scope. The need for increased awareness of terrain and obstacles under IFR will be determined in the context of RMT.0708 *Prevention of controlled flight into terrain with helicopters and helicopter terrain awareness and warning systems*<sup>11</sup>.

#### Safety benefits of increased situational awareness by day and by night

Following a comment received, the scope is extended to day and night VFR.

#### Technical issues with EFBs and additional specifications proposed by the commentators

Technical issues such as potentially insufficient brightness of the EFB by day, EFB not dimmable enough by night, and EFB NVIS compatibility have been rejected.

The comments requesting additional specifications for EFBs such as 'appropriately mounted EFB' or 'ensure non-professional GPS cannot be used' have not been accepted because of the following: HEMS operations are CAT. CAT operators can only use an EFB if Subpart M (SPA.EFB) criteria are met. The proposals are already included in Subpart M (SPA.EFB).

One comment requiring the following additional specification has been partially accepted. The height of terrain or obstacles relative to the helicopter should be presented on the screen (e.g. with a colour code) was introduced. This function was checked to be compatible with Subpart M (SPA.EFB) and point CAT.GEN.MPA.141 under VFR, where visual cues (and baro altimeters) should be the primary means of assessing the helicopter's current position and controlling the flight path, including avoidance of obstacles.

#### Database issues regarding EFBs

Database issues with EFB applications have been dismissed based on the following:

- Operators currently using both certified systems and non-certified EFB applications agree that the database provided in the certified system meets more requirements in terms of accuracy of the presented data, but they observe that the database of non-certified systems is more thorough, more accurate, and more up to date.
- The ATM/ANS Regulation requires that certified systems include only obstacle data provided by a certified DAT provider, whereas non-certified ones do not have such restrictions.

<sup>11</sup> <https://www.easa.europa.eu/en/document-library/terms-of-reference-and-group-compositions/tor-rmt0708>

Based on the above, certified and non-certified systems tend to complement each other. Presently, non-certified EFB applications seem to provide greater terrain and obstacle awareness than the certified ones.

This builds the case towards including a requirement in Subpart J (SPA.HEMS) that can be met with an EFB, ahead of any decisions made in the context of RMT.0708. The latter could mandate an additional certified system.

Cross-border database issues with EFBs have been also rejected.

The comments requesting greater authority involvement regarding terrain and obstacle databases have not been accepted because authorities are only involved in terrain and obstacle database as part of the Aeronautical Information Service, which is outside the scope of both the HEMS and the HTAWS rulemaking tasks.

#### Limitations of the systems and pilot training

Whether EFB based or installed and certified, none of the available terrain and obstacle databases will include all obstacles. Pilots will have to look out for obstacles.

Existing provisions already require pilots to be trained in the limitations of the systems they use. They need to be reminded in the context of moving maps with obstacle and terrain databases in order to avoid that pilots become overconfident in themselves and in their ability to fly over terrain without looking out for obstacles.

### **3.16. HEMS with human external cargo (HEC)**

#### Terminology

It was decided that the term 'human external cargo' and its abbreviation 'HEC' would have the same meaning as in the certification specifications and in SPO, and includes all the methods of carriage of persons externally to the helicopter. The definition of 'HEMS HEC' and point (a) of point SPA.HEMS.105 remain therefore unchanged. It is accepted that the terminology used in the NPA for the technical crew member (TCM) that is in charge of operations with the cargo sling was misleading. This TCM becomes the sling technical crew member.

#### Certification of the cargo hook

As identified by the commentators, the content of AMC1 SPO.SPEC.HEC.105(b) may be complementary to the requirement for dual cargo hook installations. A reference to it is, therefore, introduced.

#### Initial training of pilots — HEMS HEC with a cargo sling

The NPA proposal remains unchanged. HESLO 1 and 2 and HEC 1 and 2 training is a necessary starting point for HEMS HEC with a cargo sling.

#### Recurrent training, checking and recent experience of pilots — HEMS HEC with a cargo sling

It is acknowledged that pilots involved in HEMS might not have as much recent experience of sling load operations as pilots specialising in SPO and CAT operations.

It is therefore decided to increase the recent experience as regards the use of the cargo sling in HEMS, and to make it consistent with Subpart I (SPA.HHO) for day and night. A requirement is added to allow all SPO.SPEC.HEC cycles, HELSO cycles, SPA.HHO cycles as well as HEMS HEC cycles with the cargo sling, as part of the recent experience.



It is decided that the recurrent flight training should remain as per the NPA proposal; therefore, no additional training is required if the criteria on recent experience are met.

Pilot checking for sling load operations in the context of HEMS HEC was also aligned with Subpart I (SPA.HHO).

For the purpose of alignment with Subpart I (SPA.HHO), no specific criteria are introduced for the person in charge of conducting the pilot check.





### Ground crew for HEMS HEC with a cargo sling

The NPA proposed that the person who might be tasked with securing untrained passengers to the sling is nominated by the operator and is trained for this task.

In the context of using the cargo sling, it is likely that the HEMS HEC TCM will be in charge of securing untrained passengers.

In some cases, the person in charge might be a medical passenger or mountain technician, both of whom are part of the helicopter team and known by the operator.

The proposal is simplified and adapted to the case where the operator relies on a high number of unidentified ground rescuers that are unrelated to the operator, but are part of an identified organisation that can take responsibility for their training.

### Equipment

Relevant elements of AMC1 SPO.SPEC.HEC.100 that should also apply to HEMS HEC with the cargo sling were added to the NPA proposal:

- communication equipment and personal protective equipment of the sling technical crew member;
- recommendations for engine monitoring equipment.

### **3.17. Oxygen 1 — oxygen requirements for non-complex versus complex helicopters**

*The requirements discussed are those of point SPA.HEMS.110(c) as presented in the NPA.*

Regarding the maximum value of MOPSC:

- It is unlikely that HEMS will be operated with more than 6 passengers at high altitude where oxygen is needed, irrespective of the MOPSC.
- The MOPSC is not essential provided the scope remains HEMS.
- A helicopter may have different cabin layouts. The MOPSC is determined by using the greatest number of passenger seats (including stretchers) of the different cabin layout declared in the operations manual.
- The following example was used: an operator uses a cabin layout of 2 pilot seats + 2 stretchers + 5 seats in the cabin. In HEMS, 1 cabin seat is a hoist technical crew member seat. In air ambulance, this seat can be a passenger seat. The MOPSC is 7. This helicopter should qualify for derogation.

Regarding a possible extension of the derogation to commercial air transport (CAT):

- In the context of CAT (other than HEMS), the regulation would no longer be ICAO compliant.
- The HEMS mission profile, including the assumption that the derogation will be useful for a short period of time at the accident site, and not for a long cruise at high altitude, is an essential mitigation. The derogation cannot be extended to CAT without a full reassessment.

Conclusion:

- The proposed derogation is not extended to CAT.
- A MOPSC of 9 is maintained.



### 3.18. Oxygen 2 — nasal cannulas

*The means of compliance discussed are those of AMC2 CAT.IDE.H.240 as presented in the NPA.*

Airworthiness approvals: No operator has attempted to certify a nasal cannula since the publication of the NPA. However, the following could be established:

- Proposed Special Condition CRI F-01 on *Auxiliary Oxygen system as a supplemental oxygen source applicable to AgustaWestland AW139*<sup>12</sup> was published by EASA in 2013.
- An application for the certification of nasal cannulas should be achievable by operators and their DOAs.
- If EASA had received such an application, it would reconsult the draft special condition and would publish a special condition based on the outcome of the consultation.

Scope: The extension of the scope to include technical crew members was considered.

However:

- The HEMS TCM was not considered for oxygen, as the TCM is only a pilot assistant.
- The HHO or cargo sling TCM should, but nasal cannulas are not ideal for these TCMs.

Conclusion: The group concluded that there should be no change to the proposed AMC2 CAT.IDE.H.240.

### 3.19. Oxygen 3 — high-altitude flight with no oxygen

*The requirements discussed are those of point SPA.HEMS.110(d) as presented in the NPA.*

Training in hypoxia: Hypoxia training was fully reviewed, and the following conclusions were made:

- One part of the training should be about knowing oneself. Signs of hypoxia can vary with the age of the pilot. Recurrent training should therefore be necessary.
- Another part of the training should be about identification of the early signs of hypoxia in others, and the realisation that an otherwise reliable crew member can become incapacitated due to the lack of oxygen. Recurrent training should also be required for this training element.
- The training should be both theoretical and practical.

Maximum time spent above 10 000 ft up to a certain altitude, based on operational experience, and considering all the other mitigating factors proposed:

- up to 14 000 ft: based on operational experience and on national aeroplane operations regulations that were applicable in before JAR OPS 1&3 were published, operations up to 14 000 ft should remain safe during 30 minutes above 10 000 ft;
- up to 16 000 ft: a rule of thumb is that the helicopter should spend no more than 10 minutes above 13 000 ft; this is an equivalent to 15 minutes above 10 000 ft, considering some time for the climb and descent between 10 000 and 13 000 ft.

Available scientific evidence and ongoing research:

- Early results of research that has taken place in hypobaric rooms in Italy were made available to EASA ahead of its publication. They justify short incursions above 10 000 ft and up to 5 000 m (16 400 ft) pressure altitude for the purpose of HEMS. The pilots were subjected to a scenario that is realistic of a helicopter mission, including a 800 ft/minute climb to 5 000 m and 30 minutes at 5 000 m before the tests began. Tests also took place at lower altitudes. The pilots

<sup>12</sup> [Proposed Special Conditions on Auxiliary Oxygen system as a supplemental oxygen source applicable to AgustaWestland AW139 | EASA \(europa.eu\)](#)

were subjected to tests measuring their cognitive abilities and reaction times, but they were not subjected to mission stress or to cold temperatures.

- All the cognitive factors tested showed no variations with altitudes for the values of altitudes tested, and for the above-mentioned durations. Only the ‘psychomotor vigilance using the reaction time test (RTT)’ showed results which were affected by time spent at a 5 000 m altitude. All factors other than altitude could be ruled out.
- Oxygen saturation levels were monitored throughout. It dropped as time was spent at high altitude. However, no strong correlation could be established between oxygen saturation and the results. Oxygen saturation was therefore not introduced as a mitigation at regulation or at AMC level.
- The pilots thought they did best when their performance was worst.

Future research programmes:

- The above research will be complemented by further research in real mission conditions on helicopters, as of 2022.

Conclusions on the acceptable combinations of time spent above 10 000 ft and maximum altitude reached:

- The time frames described in paragraph ‘Maximum time spent above 10 000 ft up to a certain altitude, based on operational experience’ above are introduced at AMC level.
- The AMC introduces the condition to enable operators to extend their operations to other combinations of maximum time spent above 10 000 ft and maximum altitude reached, within the time frame defined at regulation level. Such extension should be based on scientific evidence and pending the publication of ongoing and future research project reports.

Other effects of oxygen deprivation:

- The ability to fly above 13 000 ft without oxygen is restricted to daytime operations, considering the adverse effects of high-altitude flights on night vision.

Discussions on individual factors and acclimatisation:

- In the context of HEMS, altitude acclimatisation cannot be relied upon, because in most cases pilots will return to base at low altitude after each mission. Partial acclimatisation is possible but difficult to assess.
- Individual factors already captured in the NPA were reviewed and left unchanged.

### **3.20. Other additional equipment (attitude indicator for day VFR, radio altimeter, etc.)**

#### Radio altimeter

It is decided that a radio altimeter should be required. There should be no impact because the HEMS fleet is already equipped. This may only impact single-engined helicopters intended to fly HEMS at high altitudes in the mountains. See topic 3.7 ‘Performance’.

#### Vertical speed indicator:

The comment has been accepted. The vertical speed indicator is already required under CAT in the context of day VFR and need not be repeated in Subpart J (SPA.HEMS).

### **3.21. HEMS risk assessments**

Following comments received:



- Point SPA.HEMS.140 is simplified and amended to better introduce the HEMS commander's risk assessment.
- The operator's risk assessment is described in new AMC2 SPA.HEMS.140, and populated by:
  - elements currently contained in point SPA.HEMS.140 (implementing regulation level);
  - elements currently contained in point SPA.HEMS.130(e)(2)(ii);
  - flight time limitations and crew fatigue.

'Flight following systems' in current point SPA.HEMS.130(e)(2)(ii) becomes a stand-alone requirement for an 'aircraft tracking system' in new point SPA.HEMS.151.

### 3.22. GM1 SPA.HEMS.100

GM1 SPA.HEMS.100 was reviewed following the changes in the sections on 'performance' and 'HEMS HEC'. See topic 3.7 'Performance' and 3.16 'HEMS with human external cargo (HEC)'.

Regarding the comments received to the GM:

- It was proposed that GM1 SPA.HEMS.100 include a definition of 'SAR'. The proposal has not been accepted. Such a definition may be introduced as guidance to Regulation (EU) 1139/2018, which is outside the scope of this rulemaking task. Moreover, national definitions of SAR may not be aligned with the ICAO definition, adding to the confusion. See also topic 3.1 'Definition and scope of HEMS'.
- It appeared that the sentence in the NPA on 'crisis situations' had to be reworded to state the obvious: that State or civilian flights will be performed under national rules if HEMS operators do not have sufficient capacity to respond to a natural disaster. The amended draft proposal clarifies that the scope of the applicable EU aviation regulations is defined in Regulation (EU) 1139/2018 and not in this GM. It clarifies that operations that take place under national regulations are not further discussed.

### 3.23. Other recommendations

Long lists of recommendations included in certain comments were considered as providing good advice in terms of safety culture and training. Following those comments, one GM has been introduced on ground personnel.

Training of ground personnel: Following a comment received, guidance material has been introduced on useful information and documents that can be provided to ground emergency service personnel.

LIDAR: This technology was not considered mature and shall not be mandated. The range is currently too limited. Most of the available LIDAR devices provide 2D information on the rotor plane. 3D LIDAR is being developed but not yet available. Finally, LIDAR may disregard 'cables' as 'noise signal' with the current resolution.

Flight data monitoring (FDM):

The benefit of FDM for offshore operations was assessed as 'not high'. The benefits in HEMS would be lower in the sense that a standard approach at the operating site is harder to define. A benefit might be increased standardised approaches at the operating base. The main benefit might be increased pilot self-discipline, which might be better achieved in different ways.

The cost was assessed as high. If a flight data recorder (FDR) is installed, the cost of the equipment may be not so high, but the initial work of 'defining thresholds for automatic detection of events' or 'non-standard flight' in the context of HEMS, as well as the day-to-day cost of running FDM and filtering out 'false positives' would be high.

Overall, FDM was seen as a heavy burden for little benefit.



Conclusion: No change regarding FDM. The issue may be reconsidered in the future based on any new developments, for example in the context of RMT.0708 *Prevention of controlled flight into terrain with helicopters and helicopter terrain awareness and warning systems*<sup>13</sup>.

### 3.24. Destination alternates

Point SPA.HEMS.122 was deleted. The concept was extended to CAT operations and reintroduced in a different format as part of complementing Implementing Regulation (EU) 2021/1296<sup>14</sup> and in the AMC and GM that will complement this Regulation.

### 3.25. Maintenance

The certification of maintenance work performed on board aircraft is performed by appropriately licensed personnel, which ensures that such personnel are qualified to carry out specific maintenance tasks and discharge their responsibilities.

Point 145.A.30(j) of Regulation (EU) No 1321/2012 and point CAO.A.40(c) of Regulation (EU) No 748/2012 allow other categories of licensed personnel, other than Part-66 technicians, to perform certain maintenance tasks and under particular circumstances. However, technical crew members (TCMs) are not required to hold a licence.

Additionally, if TCMs are trained to the same proficiency as the aircraft commander or the flight engineer, the same principle could be applied to other personnel like medical personnel or cabin crew and then everybody could be authorised to carry out maintenance tasks.

<sup>13</sup> <https://www.easa.europa.eu/en/document-library/terms-of-reference-and-group-compositions/tor-rmt0708>

<sup>14</sup> Commission Implementing Regulation (EU) 2021/1296 of 4 August 2021 amending and correcting Regulation (EU) No 965/2012 as regards the requirements for fuel/energy planning and management, and as regards requirements on support programmes and psychological assessment of flight crew, as well as testing of psychoactive substances (OJ L 282, 5.8.2021, p. 5) (<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32021R1296&qid=1663004587956>).



#### 4. Individual comments and responses referring to the relevant discussion topics

In responding to the comments, the following terminology is applied to attest EASA's position:

- (a) **Accepted** — EASA agrees with the comment and any proposed change is incorporated into the text.
- (b) **Partially accepted** — EASA either partially agrees with the comment or agrees with it but the proposed change is partially incorporated into the text.
- (c) **Noted** — EASA acknowledges the comment, but no change to the text is considered necessary.
- (d) **Not accepted** — EASA does not agree with the comment or proposed change.



**(General Comments)**

-

comment	50	comment by: <i>Svensk Luftambulans</i>
	General SLA (Svensk Luftambulans) thinks this NPA is a major step to a higher safer level in HEMS operations.	
response	Noted Thank you	
comment	73	comment by: <i>UK CAA</i>
	<p><b>Page No:</b> Various</p> <p><b>Paragraph No:</b> Various</p> <p><b>Comment:</b> This RMT was originally introduced to bring forward the JAA TGL 43 “Conduct of mountain HEMS/air-rescue by an AOC holder when requirements of JAR-OPS 3 cannot be met”. Part of the debate going back for over 10 years has been about the various differing operating principles for providing medical help and assistance to persons in need in the more remote and difficult areas of Europe and especially in mountainous regions. These principles vary between the established concept of HEMS and the more varied and flexible concept of helicopter Search and Rescue (SAR). HEMS is basically CAT with specifically approved alleviations whilst SAR is a <u>State</u> activity managed by individual Member States. Problems of interpretation and possibly expectation occur when the two are merged either intentionally or not. For this reason, it is strongly recommended that with regards to HEMS, the term “<u>rescue</u>” is not used but replaced by a similar one to ensure that the two disciplines are kept separate.</p> <p>Therefore, it is proposed that an alternative term, such as “HEMS Recovery” is introduced instead of any reference to ‘rescue’ when appropriate to the activities expounded and throughout the NPA. It could be defined as:</p> <p><b>HEMS Recovery</b>      <i>An operation conducted under a HEMS approval to recover persons in distress, provide for their initial medical or other needs and deliver them to a place of safety.</i></p> <p><b>Justification:</b> The prevention of confusion and operational expectation in the provision of HEMS activities in accordance with the Air Operations regulation and SAR activities conducted under State regulation.</p> <p><b>Proposed Text:</b> Insert proposed definition of HEMS Recovery and amend all references throughout the proposal where appropriate from “rescue operations other than SAR operations” to ‘HEMS recovery operations’.</p>	
response	Noted Please refer to the topic ‘Definition of HEMS’.	



comment	161 <span style="float: right;">comment by: EUROCONTROL</span>
	<p>The EUROCONTROL Agency welcomes the publication of EASA Notice of Proposed Amendment 2018-04 concerning 'Helicopter emergency medical services performance and public interest sites'. It also thanks EASA for the opportunity that has been given to submit comments. However, the generic safety case developed by the EUROCONTROL Agency having served as, inter alia, input to some parts of the proposed amendment, there is no additional comment to make.</p> <p>The EUROCONTROL Agency would like to confirm that it will read with interest the comments on the NPA received from stakeholders and the responses given to them by EASA in its future comment-response document (CRD). Like for NPA 2018-04, EUROCONTROL staff will be given access to CRD 2018-04, for their information.</p>
response	Noted

comment	163 <span style="float: right;">comment by: FAA</span>
	<p>The FAA reviewed this NPA with EASA during the ICAO Helicopter Sub Group Meeting at EASA HQ, Cologne, Germany. This is a proposed amendment of EASA rules applicable to EU member states and will have no direct effect on US operations. The NPA does, however, fuel a controversy within ICAO with respect to the numerous vectors of attack against use of some twin engine and all single engine helicopters, basically prohibiting their use over "congested hostile" areas (cities).</p> <p>The European EASA perspective requires all lives and property in the air <u>and</u> on the ground to be protected from harm in the event of a forced landing within a congested hostile area based solely upon the criticality of the outcome, with no regard for the low probability of occurrence. The European regulators' focus is on the certain outcome of mechanical failure of an engine. They are unwilling or unable to consider the slim probability of occurrence of an engine failure while addressing only the critical nature of the outcome. Other causes of forced landing, including fuel starvation, contamination, mismanagement, or other single points of failure that may occur with much greater frequency than mechanical engine failure are not being addressed in this amendment. Their accident statistics seem to support the action they are taking. Our accident statistics are different. So, perhaps they do need more stringent rules regarding operations in hostile congested areas.</p> <p>The NPA proposes that all heliports that are considered public interest facilities such as those located at hospitals, must be capable of supporting rejected takeoffs under PC-1 operations. This proposal will require significant expansion of heliport boundaries and construction of adequate surfaces to receive a helicopter landing after an engine failure shortly after liftoff. This will limit the addition of heliports at existing facilities and construction of heliports at new facilities where land is available for such dedicated use. This mitigating rule may reduce the severity of a post takeoff engine failure event, but the number of such events in years of successful operations is insignificant.</p> <p>EASA proposes relaxation of Oxygen rules allows flight crewmembers to operate between 13,000 and 16,000 feet MSL for up to 10 minutes for non-HEMS operations, and up to 30 minutes for HEMS operations. Their documented rationale for Option</p>





2 (page 13 of 72) includes mountain crewmember's tendency to be acclimatized to high altitude operations, and the "short" duration of such flights, the duration of the flight being solely for landing, take off, hoisting, and sling load operations, reducing the need for oxygen. Contrary to this rationale- most HEMS operating bases are not in high altitude mountainous locations, but rather near towns and cities in valleys at much lower altitudes, leaving little opportunity for crew acclimatization. Further their 10 minute of exposure concept does not account for time spent on the ground at altitudes above 13,000 feet after landing and prior to take off. In other words, without other mitigating requirements, a pilot could be hypoxic before takeoff or other mentally taxing activity before even beginning such activity. Additionally, hoist and sling load operations require a much greater level of concentration and require full mental capacity. Hypoxia diminishes mental capacity. We would recommend not relaxing pilot oxygen rules (as described in option 2 on page 13) to the proposed extent, as the rationale is flawed.

We have no comment with respect to:

- Helicopter performance requirements for mountain operations at high altitudes,
- Cargo hook and sling operations,
- Placement of technical crewmembers,
- NVIS operations,
- Obstacle awareness and avoidance and use of TAWS functionality in EFB applications,
- Simplified HEMS VFR weather minima,
- Enabling HEMS IFR operations,
- Mitigating the risk of loss of visual reference during flight, or
- Other minor adjustments to European HEMS rules.

This NPA would affect the ability of US companies to do business in Europe, however, these new rules would not affect US domestic flight environment or procedures. Therefore, we don't see any reason to comment on their NPA beyond the considerations noted above.

response

Noted  
Please refer to topic 'Public interest sites'.  
Partially accepted  
Please refer to topic 'Oxygen'.

comment

235

comment by: *Finnish Transport Safety Agency*

Finnish Transport Safety Agency (Trafi) would like to thank EASA for very good work done with the NPA 2018-04. Trafi supports the proposed NPA, with few comments.

Questions to CA:

Q: How many public interest sites are approved on your territory?

A: Three (Oulu, Rovaniemi, Maarianhamina)

Q: If the rules don't change, do you expect in the next 5 years this number to Increase or decrease?

A: No change



response	<p>Q: By how many percent? A: -</p>
response	<p>Noted Thank you for answering the questions.</p>
comment	<p>277 <span style="float: right;">comment by: <i>Stephanie Selim</i></span></p> <p>The proposed NPA deals with important and complex matters that are mainly related to public service tasks, sponsored and financed by the public authority. In France, these missions are partly carried out by government aircraft not covered by EASA regulations, but also by aircraft of private companies, under contract with the public authority and covered by EASA regulations.</p> <p>Today, it is essentially the HEMS activity that is delegated by contract to operators under the EASA regulatory regime, but in the future this field of delegated public service missions could possibly be extended, as some other European States already do. In particular, where the EASA Regulation envisages to take into account rescue activities, it is an additional part of the public service tasks that may be carried out by private operators under the EASA regulatory regime.</p> <p>Given the imperative nature of these missions related to the endangering of human life, it is important to permit alleviations when absolutely necessary and when certain regulatory requirements cannot be fully met, without unduly degrading the level of safety.</p> <p>In particular, the NPA proposes to extend the scope of HEMS activities to rescue operations (excluding SAR, as defined by ICAO). France DGAC is generally in favour of this enlargement, but nevertheless wishes to draw the Agency's attention to the following points:</p> <ul style="list-style-type: none"> <li>- The nature of rescue operations concerned should be more precisely and unambiguously qualified. Defining them as non-SAR operations according to the ICAO definition is not very clear. It would be advisable for these definitions to be illustrated with examples to clarify the boundary between SAR and rescue operations.</li> <li>- The proposed regulatory architecture raises questions. Considering that rescue activities should be placed within the framework of HEMS does not seem optimal. The DGAC considers that HEMS is essentially characterized by the medical emergency aspect (Emergency, Medical) whereas rescue operations do not necessarily present the same degree of urgency (human life may only be at stake in the medium term) nor the need for systematic medical assistance (people rescued may be in difficult situations without necessarily being injured). Moreover, the operating procedures are not necessarily identical, a TCM is not necessarily required for back-up or will have a significantly different role than in HEMS operations. DGAC therefore recommends either developing two separate SPAs, or developing a generic SPA including all the common points and then distinguishing one part for specific HEMS points and another part for specific points related to non-HEMS rescue.</li> <li>- The proposal does not take into account the reality of current practices and their conceivable evolution in the short or medium term. In particular, from the point of view of mountain performance, requiring aircraft to be Cat A certified and setting the possibility of operating in CP3 in hostile (but non congested) environment at 10000ft would prohibit the use of single-engine aircraft currently in use. In many mountain rescue operations, high-performance light single-engine helicopter (of the Ecureuil AS350 B3 type) is much more efficient than a twin-engine aircraft (lower</li> </ul>



	<p>rotor blast, access to more isolated areas), whether light or heavy, and has the lowest operating cost (fix costs of light aircraft are also spread over aerial work activity in summer) for a very acceptable level of safety due to the high reliability of current engines. It is also sometimes the only type of device available quickly. In addition, in a rescue context, the regulation must balance the life of the rescued person, against the risk taken when using a single-engine helicopter.</p>
response	<p>Noted Please refer to the following topics: 'Scope and definition of HEMS' and 'Performance'.</p>
comment	<p>373 <span style="float: right;">comment by: AIRGREEN</span></p> <p>We agree with what is reported in the NPA. Our Compliments to the working group that participated in its issue</p>
response	<p>Noted Thank you</p>
comment	<p>393 <span style="float: right;">comment by: Mario Tortorici</span></p> <p>Several GMs contain provisions that are apparently additional requirements or acceptable means of compliance , e.g. GM2 SPA.HEMS.125(b)(3), GM1 SPA.HEMS.130(e)(3), GM1 SPA.HEMS.130(f)(1), GM1 SPA.HEMS.140(e), etc. For these de facto additional requirements or acceptable means of compliance it is not clear what is the status and objective, if they have to be taken into considerations by operators and enforced by authority or if they may be completely disregarded by operators and what procedure has to be followed if "alternate GM" are used. We see two alternatives, either they may be completely disregarded and then we see no added value in them or they have to be considered as the correct interpretation of the requirements and then they shall be complied with and if not a finding has to be raised by the Competent Authority. For these reason at least for SPA-HEMS, that is now under revision, we ask to move the content of all GMs to AMCs, with the exception only of GM1 SPA.HEMS.100(a) "The HEMS Philosophy" and of a possible additional GM to explain the concept of cultural lighting (see specific comment).</p>
response	<p>Partially accepted Please refer to the following topics: HEMS operating base HEMS operating site dimensions HEMS operating site illumination</p>
comment	<p>409 <span style="float: right;">comment by: FNAM/SNEH</span></p> <p>FNAM (Fédération Nationale de l'Aviation Marchande) is the French Aviation Industry Federation/ Trade Association for Air Transport, gathering the following members:</p> <ul style="list-style-type: none"> <li>• CSTA: French Airlines Professional Union (incl. Air France)</li> <li>• SNEH: French Helicopters Operators Professional Union</li> </ul>

- CSAE: French Handling Operators Professional Union
- GIPAG: French General Aviation Operators Professional Union
- GPMA: French Ground Operations Operators Professional Union
- EBAA France: French Business Airlines Professional Union

And the following associated members:

- FPDC: French Drone Professional Union
- UAF: French Airports Professional Union

Introduction: The comments hereafter shall be considered as an identification of some of the major issues the French industry asks EASA to discuss with third-parties before any publication of the proposed regulation. In consequence, the following comments shall not be considered:

- As a recognition of the third-parties consultation process carried out by the European Parliament and of the Council;
- As an acceptance or an acknowledgement of the proposed regulation, as a whole or of any part of it;
- As exhaustive: the fact that some articles (or any part of them) are not commented does not mean FNAM has (or may have) no comments about them, neither FNAM accepts or acknowledges them. All the following comments are thus limited to our understanding of the effectively published proposed regulation, notwithstanding their consistency with any other pieces of regulation.

General comments :

FNAM thanks EASA for the will of harmonizing the applicable dispositions in terms HEMS operations throughout Europe in order to warrant a high level of safety. However, considering HEMS national specificities (French HEMS missions represent 17% of European HEMS missions), a proportionate approach tailored to the local specificities needs to be considered. The current RIA of this NPA should be further developed for a better maturity and should take into account the French national specificities. Indeed, French operators are precursors in HEMS operations. France benefits from one of the largest HEMS bases network in Europe which are active day and night. French HEMS operations are the most reliable in Europe. During the period 2005-2014 regarded by EASA, no accident occurred in France whereas 26 accidents occurred in the other European countries. By the way, no French occurrence are to notice since 2014. This situation leads French operators to ask for a better consideration of national practices with their inherent high level of safety and allowed by the Agency. It would be totally incomprehensible that European Aviation Safety Agency ignore practices which guarantee the highest level of safety in the European area for HEMS operations. French operators ask for a regulatory evolution that respects our national practices guaranteeing the highest level of safety of Europe.

Our position also takes into account that the same acronym HEMS covers operations that are very different from a country to another and that operations can be simple inter-hospital transfers or emergency assistance in perilous situations. Helicopter operators need a pragmatic regulation, which allows the upholding of the most reliable HEMS operations but also allows the evolutions, adaptations, practices



imposed by the variety of operating conditions encountered in northern Finland, south of Spain but also from plains to mountains through the island territory operations. It seems not appropriate for the common regulation to benchmark the specific measures implemented by each operator or country, and to make it mandatory for every country, without taking into account national needs and operational reality. EASA's proposed amendments do not seem to be justified in terms of operations difficulties. The compliance effort that is required from operators is disproportionate to the benefits that implementing those requirements bring to flight safety. The comments made thereafter need to be analysed in light of FNAM and SNEH's current understanding of this NPA.

response Noted

comment 421

comment by: SAF

Introduction: The comments hereafter shall be considered as an identification of some of the major issues SAF asks EASA to discuss with third-parties before any publication of the proposed regulation. In consequence, the following comments shall not be considered:

- As a recognition of the third-parties consultation process carried out by the European Parliament and of the Council;
- As an acceptance or an acknowledgement of the proposed regulation, as a whole or of any part of it;
- As exhaustive: the fact that some articles (or any part of them) are not commented does not mean SAF has (or may have) no comments about them, neither SAF accepts or acknowledges them. All the following comments are thus limited to our understanding of the effectively published proposed regulation, notwithstanding their consistency with any other pieces of regulation.

General comments : SAF thanks EASA for the will of harmonizing the applicable dispositions in terms HEMS operations throughout Europe in order to warrantee a high level of safety. However, considering HEMS national specificities (French HEMS missions represent 17% of European HEMS missions), a proportionate approach tailored to the local specificities needs to be considered. The current RIA of this NPA should be further developed for a better maturity and should take into account the French national specificities. Indeed, French operators are precursors in HEMS operations. France benefits from one of the largest HEMS bases network in Europe which are active day and night. French HEMS operations are the most reliable in Europe. During the period 2005-2014 regarded by EASA, no accident occurred in France whereas 26 accidents occurred in the other European countries. By the way, no French occurrence are to notice since 2014. This situation leads French operators to ask for a better consideration of national practices with their inherent high level of safety and allowed by the Agency. It would be totally incomprehensible that European Aviation Safety Agency ignore practices which guarantee the highest level of safety in the European area for HEMS operations. French operators ask for a regulatory evolution that respects our national practices guaranteeing the highest level of safety of Europe.

Our position also takes into account that the same acronym HEMS covers operations that are very different from a country to another and that operations can be simple



inter-hospital transfers or emergency assistance in perilous situations. Helicopter operators need a pragmatic regulation, which allows the upholding of the most reliable HEMS operations but also allows the evolutions, adaptations, practices imposed by the variety of operating conditions encountered in northern Finland, south of Spain but also from plains to mountains through the island territory operations. It seems not appropriate for the common regulation to benchmark the specific measures implemented by each operator or country, and to make it mandatory for every country, without taking into account national needs and operational reality. EASA's proposed amendments do not seem to be justified in terms of operations difficulties. The compliance effort that is required from operators is disproportionate to the benefits that implementing those requirements bring to flight safety. The comments made thereafter need to be analysed in light of SAF current understanding of this NPA.

response Noted

comment

433

comment by: *MBH SAMU*

Introduction: The comments hereafter shall be considered as an identification of some of the major issues HBG asks EASA to discuss with third-parties before any publication of the proposed regulation. In consequence, the following comments shall not be considered:

- As a recognition of the third-parties consultation process carried out by the European Parliament and of the Council;
- As an acceptance or an acknowledgement of the proposed regulation, as a whole or of any part of it;
- As exhaustive: the fact that some articles (or any part of them) are not commented does not mean HBG has (or may have) no comments about them, neither HBG accepts or acknowledges them. All the following comments are thus limited to our understanding of the effectively published proposed regulation, notwithstanding their consistency with any other pieces of regulation.

General comments : HBG thanks EASA for the will of harmonizing the applicable dispositions in terms HEMS operations throughout Europe in order to warrantee a high level of safety. However, considering HEMS national specificities (French HEMS missions represent 17% of European HEMS missions), a proportionate approach tailored to the local specificities needs to be considered. The current RIA of this NPA should be further developed for a better maturity and should take into account the French national specificities. Indeed, French operators are precursors in HEMS operations. France benefits from one of the largest HEMS bases network in Europe which are active day and night. French HEMS operations are the most reliable in Europe. During the period 2005-2014 regarded by EASA, no accident occurred in France whereas 26 accidents occurred in the other European countries. By the way, no French occurrence are to notice since 2014. This situation leads French operators to ask for a better consideration of national practices with their inherent high level of safety and allowed by the Agency. It would be totally incomprehensible that European Aviation Safety Agency ignore practices which guarantee the highest level of safety in the European area for HEMS operations. French operators ask for a



regulatory evolution that respects our national practices guaranteeing the highest level of safety of Europe.

Our position also takes into account that the same acronym HEMS covers operations that are very different from a country to another and that operations can be simple inter-hospital transfers or emergency assistance in perilous situations. Helicopter operators need a pragmatic regulation, which allows the upholding of the most reliable HEMS operations but also allows the evolutions, adaptations, practices imposed by the variety of operating conditions encountered in northern Finland, south of Spain but also from plains to mountains through the island territory operations. It seems not appropriate for the common regulation to benchmark the specific measures implemented by each operator or country, and to make it mandatory for every country, without taking into account national needs and operational reality. EASA's proposed amendments do not seem to be justified in terms of operations difficulties. The compliance effort that is required from operators is disproportionate to the benefits that implementing those requirements bring to flight safety. The comments made thereafter need to be analysed in light of HBG's current understanding of this NPA.

response Noted

comment 445

comment by: *Oya Vendée Hélicoptères*

Introduction: The comments hereafter shall be considered as an identification of some of the major issues OYA Vendée Hélicoptères asks EASA to discuss with third-parties before any publication of the proposed regulation. In consequence, the following comments shall not be considered:

- As a recognition of the third-parties consultation process carried out by the European Parliament and of the Council;
- As an acceptance or an acknowledgement of the proposed regulation, as a whole or of any part of it;
- As exhaustive: the fact that some articles (or any part of them) are not commented does not mean OYA has (or may have) no comments about them, neither OYA accepts or acknowledges them. All the following comments are thus limited to our understanding of the effectively published proposed regulation, notwithstanding their consistency with any other pieces of regulation.

General comments : OYA thanks EASA for the will of harmonizing the applicable dispositions in terms HEMS operations throughout Europe in order to warrantee a high level of safety. However, considering HEMS national specificities (French HEMS missions represent 17% of European HEMS missions), a proportionate approach tailored to the local specificities needs to be considered. The current RIA of this NPA should be further developed for a better maturity and should take into account the French national specificities. Indeed, French operators are precursors in HEMS operations. France benefits from one of the largest HEMS bases network in Europe which are active day and night. French HEMS operations are the most reliable in Europe. During the period 2005-2014 regarded by EASA, no accident occurred in France whereas 26 accidents occurred in the other European countries. By the way, no French occurrence are to notice since 2014. This situation leads French operators to ask for a better consideration of national practices with their inherent high level



of safety and allowed by the Agency. It would be totally incomprehensible that European Aviation Safety Agency ignore practices which guarantee the highest level of safety in the European area for HEMS operations. French operators ask for a regulatory evolution that respects our national practices guaranteeing the highest level of safety of Europe.

Our position also takes into account that the same acronym HEMS covers operations that are very different from a country to another and that operations can be simple inter-hospital transfers or emergency assistance in perilous situations. Helicopter operators need a pragmatic regulation, which allows the upholding of the most reliable HEMS operations but also allows the evolutions, adaptations, practices imposed by the variety of operating conditions encountered in northern Finland, south of Spain but also from plains to mountains through the island territory operations. It seems not appropriate for the common regulation to benchmark the specific measures implemented by each operator or country, and to make it mandatory for every country, without taking into account national needs and operational reality. EASA's proposed amendments do not seem to be justified in terms of operations difficulties. The compliance effort that is required from operators is disproportionate to the benefits that implementing those requirements bring to flight safety. The comments made thereafter need to be analysed in light of OYA's current understanding of this NPA.

response Noted

comment

458

comment by: *Austro Control*

Dear all,

Austria offers the following comments to this NPA:

General:

Austro Control, who widely supports the proposals of this NPA, is aware of UK CAA's comments regarding the actual NPA and fully agrees with these comments.

In the interest of efficiency and to avoid duplication of the inputs provided by UK CAA, Austro Control completely refers to the comments in their corresponding document. Therefore, Austro Control only emphasises pertinent points or adds some comments that have not yet been raised.

- Page No: 7
- Paragraph No: various

Comment: Due to the need of a clear distinction between SAR and other than SAR operations ("primary recovery flights"), more detailed guidance would be useful for all stakeholders (operators, NAAs, State entities)

Justification: Legal certainty

- Page No 16:
- Paragraph No: various





Comment: The proposition that it should no longer be distinguished between single-pilot operations with technical crew members and two pilot-operations cannot be shared and is considered to imply a negative safety impact. It makes – also in the discussed subject “HEMS operating minima” – a big difference if two licenced pilots operate or not. This should adequately be respected in the rules.

Justification: Safety

· Page No: 23  
Paragraph No: 3.6, GENERAL and sub-para. 2 (a)

Comment:  
Regarding the expanded functions, competences and duties of technical crew members, even a licence or at least an appropriate attestation (as for cabin crew members) should be considered. In this case all relevant provisions should be adapted.

As point (118) in Part-DEF will be changed (*see page 20*), GM1 ORO.TC.105(a) should be aligned.

Justification: Safety and practical issues (evidence of medical fitness) Accuracy

Proposed text:  
The technical crew member in HEMS, **HEMS HEC**, HHO or NVIS operations should...

· Page No: 25  
Paragraph No: 3.7., sub-para. 3(b)(2)

Comment:  
UK CAA comment (better amend SPA.HEMS.125) is supported, but this subject could even go further: CAT.POL.H.420, which states in the relevant AMC1, that in (b)-mountainous areas, current generation twin-engined helicopters may not be able to meet the performance class 1 or 2 requirements at the operational altitude; consequently, the outcome of an engine failure is the same as a single-engined helicopter. (The statement is finally no longer valid as current generation multi-engine helicopters widely used in HEMS operations are able to maintain PC-2 requirements during the en-route phase of the flight.) In this case, the operator should justify the use of exposure in the en-route phase. This is so far for the current HEMS helicopter fleets not applicable. The en-route phase of flight is out of question regarding performance class requirements. En-route PC 3 shall not be allowed for safety reasons. Take-off and landing operations over 10,000 feet in mountainous area are already addressed by CAT.POL.H.305. Therefore, CAT.POL.H.420 and related references should be completely deleted OR at least not to be applicable for any HEMS operation.

Justification: Safety

· Page No: 29  
Paragraph No: 3.9, sub-para. 3(c)



Comment: As stated on page 14 and already raised by UK CAA, the number of MOPSC is different to the proposed rule text. Following the explanation material, the text should be adapted.

Justification: Clarity

Proposed text:

(c) By way of derogation from CAT.IDE.H.240, complex helicopters operated in HEMS with a MOPSC of **six** or less shall comply with the oxygen requirements that are applicable to non-complex helicopters.

- Page No: 30  
Paragraph No: 3.9, sub-para. 3(9) and (10)

Comment: Additionally, to UK CAA's comment, guidance about hypoxia training (who, how, where, essential content etc) would be necessary and should be added.

Justification: Clarity

Proposed text:

After consideration add a new GM1 SPA.HEMS.110(d) explaining hypoxia training.

- Page No: 31  
Paragraph No: 3.9, sub-para. 6(a)

Comment: Following UK CAA regarding the text-proposal of SPA.HEMS.125, Austria's position in this context is even more restrictive and known for years. For safety issues and as "CAT A equivalent" does not possess the same certifications items/criteria (also see definition), only CAT A certified helicopters should be eligible for PC 1 and 2 operations.

Justification: Safety

- Page No: 38  
Paragraph No: 3.10, sub-para. 3(c)

Comment: It is not explicable who else than the HEC technical crew member could be the trained person to ensure that persons who cannot be trained to secure themselves to the rope, are properly secured. No trained persons are excluded in any case and finally there is nobody else in practise to handle this duty. Therefore, the last sentence of this sub-paragraph should be adapted accordingly.

Justification: Clarification

Proposed text:

This person should be a HEC technical crew member.

- Page No: 39  
Paragraph No: 3.10, sub-para. 3(g)



Comment: Following UK CAA an annually flight check is recommended for alignment of checking and proficiency and for safety reasons as it involves the transportation of human external cargo.

Justification: Safety and alignment of checks and proficiency

Proposed text:

(g) A pilot involved in HEMS HEC operations should complete a flight check at least **annually** to demonstrate compliance...

· Page No: 39

Paragraph No: 3.10, sub-para. 4 (c)

Comment: The actual proposal does not fulfil the equipment requirements, as e.g. in practice electronical devise are not stored accordingly for moving map displays.

Justification: Clarification and safety

Proposed text:

**AMC1 SPA.HEMS.110(b) Equipment requirements for HEMS operations**  
MOVING MAP DISPLAYS

A moving map display may be any of the following:

- (a) an HTAWS;
- (b) a display integrated in the cockpit environment;
- (c) ~~an EFB software application.~~ **an appropriately mounted EFB.**

· Page No:39/40

Paragraph No: 3.10, sub-para. 7

Comment: As this is an important issue, UK CAA's comment must be pointed out: the minima should stay within the rules and not be transferred to AMC.

Justification: legal certainty

· Page No: 41

Paragraph No: 3.10, sub-para. 7(b)

Comment: The height minima for HEMS VFR night flights should be raised.

Justification: enhanced safety and higher safety margin for night operations

Proposed text:

b) Except when necessary for take-off or landing, a **HEMS VFR flight at night** shall be flown at a level which is equal to or above the following:

- (1) **600 m (2 000 ft)** above the highest obstacle within a radius of 600 m from the aircraft when flying over the congested areas of cities, towns or settlements or over an open-air assembly of persons; and
- (2) elsewhere than as specified in (1), **300 m (1 000 ft)** above the ground or water, or **300 m (1 000 ft)** above the highest obstacle within a radius of 150 m (500 ft) from the aircraft.



· Page No: 42  
Paragraph: 3.10, sub-para. 11

Comment: Due to the importance of this subject UK CAA's comment has to be highlighted and is fully supported.

· Page No: 43  
Paragraph: 3.10, sub-para. 13(a)(2)

Comment: Generally, it must be pointed out that the crew requirements should be re-transferred to the rules. Such essential parameters should be stated in the rules. Concerning the text in (a) it has not been explained and is not comprehensible, why in AMC1 SPA.HEMS.130(a) point (a)(2) the number of 500 hours was reduced to 100. This change is not supported, as it has a clear negative safety impact.

Justification: Safety

Proposed text:

a) either:

(1) 1 000 hours as pilot-in-command/commander of aircraft, of which 500 hours are as pilot-in-command/commander on helicopters; or

(2) 1 000 hours as co-pilot in HEMS operations, of which at least **500** hours are as pilot-in-command under supervision and 100 hours as pilot-in-command/commander on helicopters;

· Page No: 43  
Paragraph: 3.10, sub-para. 14(c) and (f)

Comment:

To raise the training duration from 30 to 45 minutes in (c) seems to be inappropriate. An IFR rating for HEMS night flights operations should be mandatory. Therefore, (a) to (g) should be deleted and be replaced by a current IFR rating, which also would imply a revision of SPA.HEMS.130(c).

To clarify if the points listed in (f) 1 to 7 are inclusive or exclusive, the text should be adapted. Supposing that all the following manoeuvres must be fulfilled, either "all" or "and" between (6) and (7) should be inserted.

Justification: Safety  
Clarification and necessary qualification

Proposed text SPA.HEMS.130(c) with deletion of its AMC:  
Instrument flight training. Pilots conducting HEMS operations shall have a valid instrument rating.

Proposed text (if points (a) to (g) are not deleted):

(f) The instrument training should be conducted by a FI/TRI/SFI **holding a current IR** and should be sufficient for the pilot to demonstrate competence in **all** the following manoeuvres :....



- Page No: 43 ff  
Paragraph No: 3.10, sub-para.14 to 22

Comment: Due to the change of numbering in SPA.HEMS.130 all references in the relevant AMC and GM should be rechecked, as there are some discrepancies.

Justification: Accuracy

- Page No: 44  
Paragraph No: 3.10, sub-para. 15 (a)(4)

Comment: Due to its importance, this comment of UK CAA has to be repeated.

- Page No: 45  
Paragraph No: 3.10, sub-para. 18 (b)

Comment: In the praxis the illumination by helicopters is most of the time not sufficient. Additional equipment (e.g. Trakka beams) should be required for these cases (landing/take-off non-pre-surveyed sites at night).

Justification: Safety issue

Proposed text:

b) For night operations to non-pre-surveyed HEMS operating sites, the illumination should be at least from the helicopter **and should adequately illuminate the landing site**.

- Page No: 52  
Paragraph No: 3.10, sub-para. 21 (b), (c), (d), (e)

Comment: As it not clear that (supposing) all following items should be covered, the numeration should be clarified with an “and” between the two last points or “all” should be inserted at the beginning.

Besides, in (d) further training requirements could be necessary depending on the equipment and operational envelope. Therefore, a new point (7) should be added.

Justification: Clarification and Safety items

Proposed text:

e.g. (b) The following items should **all** be covered: ...

or

e.g. (d) For HEMS technical crew members, the company procedures training should cover at least the following:

- (1) introduction to the regulatory environment applicable to HEMS operations;
- (2) the relevant extracts of the operations manual, Part A, B and C;
- (3) helicopter performance;
- (4) navigation equipment (FMS/NMS/GPS) and AFCS operations as applicable;



	<p>(5) transponder;  (6) ACAS, HTAWS, radar, moving map as applicable <b>and</b>  <b>(7) any other additional training items required for the specific operation (e.g. HHO, HEC)</b></p> <p>· Page No: 55  Paragraph No: 3.10, sub-para. 25</p> <p>Comment: This GM seems impossible to be fulfilled without a weather reporting station at the HEMS operating base and therefore should be reconsidered.</p> <p>Justification: Safety for night VFR flights</p> <p>Proposed text:  <b>When a HEMS operating base is intended to be used for night operations a weather reporting station should be available.</b></p>
response	<p>Partially accepted  Please refer to the following topics:</p> <ul style="list-style-type: none"> <li>Definition and scope of HEMS</li> <li>VFR minima</li> <li>Crew composition</li> <li>Performance</li> <li>Oxygen 1 and 3</li> <li>HEMS HEC</li> <li>Moving maps</li> <li>Flight crew training</li> <li>TCM training</li> <li>TCM seating</li> <li>HEMS operating site dimensions</li> <li>Hems operating site illumination</li> <li>NVIS</li> <li>HEMS operating base</li> </ul>
comment	<p>497 <span style="float: right;">comment by: <i>Bell Helicopter Textron Inc</i></span></p> <p>At a few places in the document (pages 14, 31, 35, 36 and 61 at least), statements are made regarding "<b>Category A equivalent</b>" aircraft ... What makes an aircraft that is not Cat-A approved "<u>equivalent</u>" to Cat-A and who makes the call ? Is this equivalency meant to cover Category A design (engine/system isolation) or Category A operations (takeoff &amp; landing performance) or both ? Why would the requirement not just be for aircraft that are Category-A <u>Approved</u> (by certification agencies: EASA, FAA, TCCA) ?</p>
response	<p>Noted  The unchanged GM1 CAT.POL.H.200;300;400 provides the answer.</p>
comment	<p>512 <span style="float: right;">comment by: <i>Civil Aviation Authority of Norway</i></span></p> <p><i>Two of the issues presented in this NPA cause us some concern.</i></p>



CAA-Norway recognises that there may be a need to address these issues, but fail to see the advantage of the course taken in this NPA.

The HEMS regulation today is a complete set, fairly well matured and implemented in most states. Improvement is always needed, as presented in the other parts of this NPA.

But the radical changes proposed based on these two issues, appear to threaten the fragile balance between operational needs and safe operations.

#### *1. Picking up persons in distress from inaccessible locations using underslung techniques*

The discussion of the subject in the NPA is somewhat confusing and inconsistent. There is no doubt that such operations are necessary in some circumstances. And such operations are performed by HEMS helicopters and crews today. The attempt to designate this 'rescue other than SAR' is hard to follow and fails to add much value. It may also really be beside the point. The meat of the matter is not a question of if you are allowed to do such an operation, but it is very much about if you are able to do it. And that will include the right helicopter and equipment, good procedures, a competent crew which requires a significant amount of initial and recurrent training and not least a customer or operator willing to pay for it all.

The discussion and subsequent proposal ends up in referring to parts of SPO.SPEC.HEC. It should be remembered that HEMS operators are not necessarily SPO operators, or at least HEMS crews are not normally doing a lot of SPO.HESLO duties the rest of their flying as a SPO.HEC crew normally would do. This could e.g. cause the HEC regulation to take things for granted that will not be achievable for all HEMS crews. For many HEMS units, live underslung operations could also be a rare occurrence and this would require a significant amount of training to maintain currency and competence in such operations.

The discussion of the subject, in the proposed changes to GM1 SPA.HEMS.100(a), also tends to add to the confusion and should be significantly shortened. It should also be careful not to mix the 'other than rescue', 'mountain' and 'high altitude' issues as these are separate and poses different risks and challenges. The terms 'Mountain HEMS' and 'rescue operations other than SAR operations' (and similar) should be removed from the text as they are not defined and may only add to the confusion.

Our proposal for a way forward would be:

Underslung HEC operations to rescue or recover persons from inaccessible sites should primarily be defined as SAR and regulated nationally, as it unquestionably should be today. If any state would wish not to regulate it nationally, it could according to the new basic regulation 'opt in'. ICAO classifies SAR as an aerial work activity, and it could probably be considered similar to a SPO HEC operation. Our view is that this can and will not be to a CAT standard and thus should not be a considered part of HEMS. There is no basis for calling "HEMS HEC" a CAT operation as can be done for HHO. And as proposed in this NPA, it will not fully be a SPO operation, as not all requirements are called up from SPO.SPEC.HEC.

#### *2. Operations at high altitudes.*

The challenges involved here are fully understandable and the discussion in 2.3.2.5 is reasonable. However, the proposed changes to the regulations go beyond what is discussed, and might actually undermine the whole concept of HEMS as it has been



	<p>implemented both by aviation and health authorities and services over the latest more than 15 years. Removing the restriction in CAT.POL.420(b)(2) could open the way to allow HEMS with SE helicopters over hostile environment everywhere, even if this may not be the intention of the proposal. It could erode the standard if requirements are not kept up. This should be made perfectly clear by specifying the exception in the IR by referring to SPA.HEMS.125(a))</p>
response	<p>Noted</p> <p>Please refer to the following topics:          Definition and scope of HEMS          HEMS HEC          Performance</p>

**EXECUTIVE SUMMARY**

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comment	<p>5 <span style="float: right;">comment by: <i>Aeronautical Data Systems Inc.</i></span></p> <p>I suggest a section for definitions.</p>
response	<p>Noted Thank you</p>
comment	<p>18 <span style="float: right;">comment by: <i>FinnHEMS Oy</i></span></p> <p>FinnHEMS, as the national administrative unit for HEMS-operations in Finland, is very pleased for the content of this NPA which on the other hand clarifies the present rules and on the other makes the HEMS-operations more effective.</p>
response	<p>Noted Thank you</p>
comment	<p>204 <span style="float: right;">comment by: <i>DRF-Luftrettung</i></span></p> <p>We welcome the intention of the EASA to further enhance the safety of air operations by means of extensions to Regulation (EU) 965/2012 relating to HEMS and Public Interest Sites. We are pleased to use the opportunity to comment on the EASA legislative proposals for the safe implementation of HEMS flight operations. We consider it reasonable to adapt the legal situation throughout all member states in order to strengthen the acceptance of the air rescue service throughout Europe and the aviation safety awareness within the crews.</p> <p>With nearly 90.000 HEMS Mission each year the German HEMS Operators fly more than 40% of the HEMS Missions counted by all 27 member states and the four associates. We therefore consider ourselves to be competent enough, to look at the new proposals from the German sight of view.</p> <p>We have noticed with great astonishment, that you transferred some Implementation rules to the AMC section. We would like to question this approach,</p>





	because now the operators can bring forward alternative means of compliance. Talking about a level playing field for all operators and authorities, these measure have the potential to jeopardize all efforts for a
response	Noted Please refer to topic 'VFR minima'.

## 2. In summary — why and what

p. 5-19

comment	<p>1 <span style="float: right;">comment by: <i>Aeronautical Data Systems Inc.</i></span></p> <p>2.3.2.4 Oxygen requirements for mountain operations at high altitudes:</p> <p>"<i>The need for oxygen is lower because of shorter times periods at high altitude</i>" is a false statement. Oxygen requirements as defined by EASA and the CFR's clearly define when oxygen should...or should not be used and some are defined by a time parameter. The fact that hypoxia at teh lower altitudes is extremely subjective and can vary day by day for an individual. Oxygen should always be avaiable and planned for in the worse possible case much in the same way the critical fuel scenario is outline for ETOP's operators. It should be stressed that slow onset hypoxia can occur at any time and the only way to insure this does not occur is thru the use of oxygen. It is imperative that the same rules which apply to fixed wing aircraft most certainly should apply to helicopter operations, hypoxia is a result of altitude regardless of the type of aircraft flown.</p> <p><b>Option 1: Portable Oxygen Bottles must be installed on board the aircraft and oxygen must be used by the pilots anytime the flight is higher than 10,000 msl.</b> I suggest using 10,000msl since this will provide some leeway to compensate for variations in pressure altitude. Instead of making the pilot adhere to wearing oxygen per pressure altitude which might be difficult for the pilot to determine on a continually changing basis, using msl will make it less difficult to know when oxygen should be used.</p>
response	Noted Please refer to topics 'Oxygen 1, 2 and 3'.
comment	<p>2 <span style="float: right;">comment by: <i>Aeronautical Data Systems Inc.</i></span></p> <p>Option 1. This paragraph also make reference to the pilot and patient having access to the same system. There must clearly be a defined system for the pilots to access. For example, the pilots system should have a hard cover for the supply hose to the pilots so the O-2 supply is not cut off from crimping and there should be a visible display for the pilot to be aware that oxygen is flowing at a prescribed rate.</p> <p>If oxygen supply is of concern (duration of the supply) then I would suggest perhaps using a pulse type mask which would use less oxygen thus requiring less of a supply since the delivery is more efficient.</p>
response	Noted Please refer to topics 'Oxygen 1 and 2'.



comment	<p>3 <span style="float: right;">vcomment by: <i>Aeronautical Data Systems Inc.</i></span></p> <p>Option 2: This section needs to be rewritten. It is expected that an option will offer a solution, however the first dashed item only points out that 10 minutes is not long enough to cover MEMs operations but does not present a solution.</p> <p>Dash item 2 acknowledges 10 minutes is too short a time and proposes to extend the time to 30 minutes but does not explain how this will safely be achieved. Is additional oxygen being required? how is this extend risk being mitigated.</p> <p>Dash item 3 speaks about a once in a lifetime hypoxia training, this training should be specific to slow onset hypoxia training since high altitude rapid decompressions will not be an issue. Slow onset hypoxia can be more dangerous than a rapid decompression since it is so insidious and often goes un recognized.</p> <p>Dash item 4 again makes a statement but does not offer any solution.</p>
response	<p>Partially accepted Please refer to topic 'Oxygen 3'.</p>
comment	<p>4 <span style="float: right;">comment by: <i>Aeronautical Data Systems Inc.</i></span></p> <p>Option 3: It appears to me this part of the regulation (oxygen) is more about operational and economic efficiencies than it is about safety.</p> <p>I am amazed I have not seen one reference to safety thru this section.</p> <p>I suggest the framers of this document are directed to SAE ARP6527 (oxygen considerations for flight into high elevation airports) to gain a better understanding of issues as they pertain to high altitude hypoxia considerations while remaining within the confines of SMS compliance.</p> <p>This is a comprehensive document that looks at aspects of flying into airport at elevations higher than 10,000m and offers solutions that are based in science and practical applications founded on safety.</p>
response	<p>Noted Please refer to topic 'Oxygen 3'.</p>
comment	<p>6 <span style="float: right;">comment by: <i>AIRBUS HELICOPTERS</i></span></p> <p>For clarity, it should be written in § 2 '<b>rescue operations other than SAR</b>' instead of '<i>other than SAR operations</i>' or instead of '<i>other than SAR rescue operations</i>', everywhere it is the case.</p> <p>Indeed the words '<i>rescue operations other than SAR</i>' clarify that the extension of the HEMS concept brought by this NPA is limited to rescue operations. These words are correctly used in the Executive Summary, in the title of § 4.2, in § 2.2, but not correctly repeated, at several occurrences, in § 2.</p>
response	<p>Noted</p>

	Thank you	
comment	19	comment by: FOCA Helicopter Operations
	It is unclear why there is a limit of 10'000 ft. DA.	
response	Noted Please refer to topic 'Performance'.	
comment	20	comment by: FOCA Helicopter Operations
	The table identifies the main risk factors regarding the analyzed HEMS accidents. It is a fact that some helicopters are more suitable for mountain operations than other. One factor is the available performance which is covered in this NPA. Another factor is the size and weight of aircraft that have various operational issues (downwash etc.) as seen in recent HEMS accidents with larger/heavier aircraft. Therefore FOCA proposes to analyse and evaluate the ability/suitability of medium and heavy aircraft and its use for mountain operations and possibility restrictions.	
response	Noted Please refer to topic 'Performance'.	
comment	21	comment by: FOCA Helicopter Operations
	It is not clear if TGL 43 has been taking into account when drafting the NPA. In general FOCA has the opinion that the specific objectives set in 2.2 are not fulfilled. The NPA renders mountain HEMS operations in general neither more efficient nor proportional. Furthermore FOCA doubts that the rules have been with the public interest in mind (cost of service, increased demand of HEMS Services during peak times (influx of skiers in the winter and climbers/hikers/bikers in the summer => see TGL 43). We also have to keep in mind that a system allowing single-engine and multi-engined helicopters for mission like in the mountains leave a choice to the pilot to mitigate operational circumstances and can lead to a safety increase which should not be underestimated.	
response	Partially accepted Please refer to topic 'Performance'.	
comment	22	comment by: FOCA Helicopter Operations
	To include "other than SAR rescue operations" to the HEMS definition is again not proportional nor in the public interest. It would clearly delute the HEMS definition with operations that are not HEMS.  There is an option to separately draft rules for other than SAR rescue operations or to subsume the operations in the framework of SPO.	
response	Noted Please refer to topic 'Definition and scope of HEMS'.	

comment	23	comment by: FOCA Helicopter Operations
	A deviation/change of the oxygen requirements should be based on scientific evidence.	
response	Partially accepted Please refer to topic 'Oxygen 3'.	
comment	33	comment by: AIRBUS HELICOPTERS
	<p>§ 2.3.2.5 Helicopter performance requirements for mountain operations at high altitudes</p> <p>It is written:</p> <p><i>"The use of category A or category A equivalent certified helicopters improves safety during the entire mission from the HEMS base to the HEMS operating site, not only in respect of risk of engine failure, but also thanks to system redundancy that is not available on category B certified helicopters. In addition, such helicopters are more suitable platforms for equipment such as helicopter terrain awareness and warning system (HTAWS), autopilot, flight director, IFR capabilities, etc., that are important mitigation measures to reduce the risk of loss of reference, collision with obstacles, and loss of control in flight."</i></p> <p><u>Comments:</u></p> <p>1) Both IHST conclusions and accidents data analysis show that the number of engines is not the driving factor of helicopter accidents.</p> <p>2) the argument that twin engines helicopters are better equipped than single engine helicopters, with safety systems such as HTAWS, autopilot, flight director, etc..., is not always true (e.g. Helionix on Light Helicopters will provide HTWAS, SVS, CVFDR, 3 axis autopilot, etc...).</p> <p>3) See also Airbus Helicopters comments n° 32 on SPA.HEMS.125(a)</p>	
response	Partially accepted Please refer to topic 'Performance'.	
comment	37	comment by: Air-Glacières (pf)
	2.3.2.5 Why should we restrict ourselves to Category A even if they are PC3 to save life when for normal SPO and even CAT flights the use of Category B is allowed. A PC3 helicopter is reliable to conduct difficult SPO missions or to fly pax but shall not be authorised to save life...	
response	Partially accepted Please refer to topic 'Performance'.	
comment	51	comment by: Svensk Luftambulans
	<p>Page 10/72</p> <p>Its not only desirable its most needed as HEMS is operating more and more without borders and Healthcare get more and more specialised. Patients are therefore transported to specialised hospitals depending on what need they have.</p> <p>This means that some hospitals are rarely frequented depending on how many such patient you have to transport, but these heliports still needs to be handled by the</p>	

response	<p>operator. The burden will increase in the future when an operator also has to take in account PINS.</p> <p>The MS states should be mandated to keep an easy access register of Heliports including approach plates in the same manner as there is published data on Fixed-Wing airports in AIP AD.</p> <p>Otherwise there is a risk of operators having different procedures to the same hospital this needs to be coordinated by the MS Authority!</p> <p>Page 11/72</p> <p>Good practice for hospitals and/or MSs should be mandated!</p>
	<p>Noted</p> <p>Please refer to topic 'public interest sites'.</p>
comment	<p>54 <span style="float: right;">comment by: <i>Aersud Elicotteri</i></span></p> <p>Page 7 "Some MSs apply national rules....".</p> <p>With reference to Nota Informativa ENAC HEMS HHO and in order to grant the same level of service and safety to all the European citizen, the following definition could be adopt in order to define an HEMS mission: "The salvage activity of injured or life-threatening people, sometimes defined as HSAR ("Helicopter Search &amp; Rescue", if performed under a contract with a client, but not included in the special operations as per Doc. ICAO Annex 12, in considered an "HEMS" operation or "CAT Air Ambulance" as applicable and shall be operated in accordance with Annex CAT and SPA of the EU Regulation 965/2012. The search activity of missing people that do not foresee the recovery of the people themselves on the helicopter, shall be operated under the Annex SPO.</p>
response	<p>Noted</p> <p>Please refer to topic 'Definition and scope of HEMS'.</p>
comment	<p>55 <span style="float: right;">comment by: <i>Aersud Elicotteri</i></span></p> <p>2.3.2.4 page 13</p> <p>Option 1 not possible. The oxygen bottles of the HEMS kit are fixed and the distribution system is designed to deliver the oxygen to patient station, not to the cockpit.</p>
response	<p>Noted</p> <p>Please refer to topic 'Oxygen 2'.</p>
comment	<p>56 <span style="float: right;">comment by: <i>Aersud Elicotteri</i></span></p> <p>2.3.2.4 Page 14</p> <p>Option 3</p> <p>Why only six or less? One line above it was stated that the operations do not vary with the complexity of the helicopter. Please remove this limitation. In addition, in case of an HEMS helicopter, how can be evaluated the MOPSC? A 12 pax seat helicopter with 5 pax seats installed plus a stretcher how should be considered?</p>

response	<p>We suggest not to limit the proposal to helicopters with MOPSC of six or less.</p> <p>Partially accepted Please refer to topic 'Oxygen 1'.</p>
comment	<p>74 <span style="float: right;">comment by: UK CAA</span></p> <p><b>Page No:</b> 14</p> <p><b>Paragraph No:</b> 2.3.2.4, final paragraph</p> <p><b>Comment:</b> Whilst the need to adjust the oxygen requirements for high altitude operations is understood, it is considered essential that the proposals are reviewed and agreed by a specialist panel of medical specialists to ensure that unintended safety issues have not been introduced.</p> <p><b>Justification:</b> To ensure safety of operations at high altitudes with appropriate human physiological effects are truly considered</p>
response	<p>Noted Thank you</p>
comment	<p>75 <span style="float: right;">comment by: UK CAA</span></p> <p><b>Page No:</b> 17/18</p> <p><b>Paragraph No:</b> 2.3.3.5, sub-paragraph entitled 'Stabilisation platforms'</p> <p><b>Comment:</b> Whilst this principle is strongly supported, it is recommended that it should be incorporated into CAT.IDE.H.135 - single-pilot operations under IFR - which should be extended to include "at night" and therefore be applicable to all single pilot CAT operations including HEMS. Additional AMC might be added to support stabilisation features too.</p> <p><b>Justification:</b> Safety of CAT operations</p> <p><b>Proposed Text:</b> Amend CAT.IDE.H.135</p> <p><b>CAT.IDE.H.135 Additional equipment for single-pilot operation under IFR <i>or at night</i></b></p> <p>Helicopters operated under IFR <i>or at night</i> with a single-pilot shall be equipped with an autopilot with at least altitude hold and heading mode.</p>
response	<p>Partially accepted for HEMS. Please refer to topic 'Autopilots'.</p>
comment	<p>143 <span style="float: right;">comment by: AIR ZERMATT AG</span></p> <p>Attachments <a href="#">#1</a> <a href="#">#2</a></p>



Concerning **Chapter 2.1. Why we need to change the rules, subchapter Mountain operations and other than search and rescue (SAR) operations**

Authorities of member states have had the oversight over operators for at least 30 years. Therefore, they built up experience and they still benefit from the closeness to the operators and the in-depth knowledge gained through the mandatory flying days of the inspectors with commercial operators. Hence, we believe that it is appropriate that EASA defines high level standards and national authorities fill the gap which is perceived by the government and the industry or have the right to establish appropriate national regulations. This is the right way to go.

Concerning **Chapter 2.3.2.1 Applicable regulations**

Member states must be able to keep HEMS and other than SAR rescue operations under national rules now and also for the future. EASA must not try to limit the freedom of member states by amending definitions in order to not leave them another chance and enforce them to apply EASA rules.

Concerning **Chapter 2.3.2.4 Oxygen requirements for mountain operations at high altitudes**

We would highly support these measures.

Concerning **Chapter 2.3.2.5 Helicopter performance requirements for mountain operations at high altitudes**

EASA argues that SE helicopters are less safe than ME, due to only one engine and missing instrument redundancy. Engine reliability statistics show that engine reliability is extremely high and also the table provided on page 8 shows, that power-plant-related issues make up only 8% of the 26 major accidents during 2005-2014. Whether those are engine failures is not specified. Another 12% are caused by other system failures. Whether system redundancy would be available with those systems in ME helicopters is not clear. Bottom line: We question whether ME helicopters solve the root cause of the accidents. Evidence is missing, the provided sample is too small in order to be representative for the HEMS-population.

Thanks to less equipment SE helicopters have a lower empty mass in relation to comparable ME helicopters. Therefore, a pilot has more excessive power available, which is a huge safety benefit. EASA doesn't take that into account.

Additionally, EASA doesn't take peaks into account. Peaks must be seen as abnormal seasonal occasions, during which more aircraft might be needed in order to respond to short-term high demand. In such cases SE helicopters can be a great alternative to ME helicopters to be flexible and being able to quickly respond to arising demands. As the JAA TGL 42 states on page 15 "a victim's best chance for survival is in an operating room, with the goal of having the patient in surgery within an hour of the traumatic event." This is also referred to as the "Golden Hour". With SE helicopters the gaps during quickly-arising demands can be served.

Additionally, the 10'000ft limitation adds complexity to the already complex system. Delete the altitude restriction and request at least one ME helicopter per HEMS base and when performance is not enough or for unforeseen events SE helicopters may be used. Regulations must become a lot simpler.



Concerning **Chapter 2.3.3.5 Chapter Mitigating the risk of loss of visual reference during flight**

Even experienced instrument rated pilots are not immune against spatial disorientation, as the following accident shows:

AW139 EC-KJT of INAER Aviation Italia;

Pilot with IR, IFR experience 557h and night flight experience 694h

The ANSV concludes as significant contributing factor, amongst others:

[...] 3. loss of situational awareness caused by probable spatial disorientation suffered by the pilot under IMC conditions [...]

Even with airplanes, which are equipped with anti-/de-icing systems, might have enough power at low altitudes in order to climb to IFR routes. Nevertheless, a positive outcome with the same scenario in mountainous areas is highly questioned.

**We even believe IFR as an escape solution can be counterproductive, because it provides crews with false safety beliefs and could induce the effect that crews push the limits beyond their personal capabilities. The goal must be to establish a just culture which allows crews to cancel missions in order to not even push themselves into advertent IMC.**

Source: <http://aerossurance.com/helicopters/aw139-mountain-hems-iimc/> , accessed 01.09.2018

Agenzia Nazionale per la Sicurezza del Volo (ANSV), Italian aviation accident investigation agency

Concerning **Subchapter Increased pilot experience with night HEMS operations**

Even before the implementation of EASA, Air Zermatt has established its own HEMS night flying training and policy which has proven itself as safe. The no-accident track record and the confident feeling of the crews prove that. There is no need to increase the experience level. If a company doesn't feel comfortable they can always establish their own stricter rules.

Concerning **Subchapter Improved IMC training for pilots that do not hold a current instrument rating**

As mentioned before, we believe that especially in mountainous areas we don't see IFR as a safe escape. The goal of a company must be to establish a just-culture where preventive cancelling of a mission in challenging conditions is being rewarded in stead to pushing crews to go further than they should.

Concerning **Chapter 2.3.3.6 HEMS crew member training and checking**

Implementing Rules and its AMCs provide the min. req. means in order to be compliant. Of course, there is and there will always be a discrepancy between operators. Nevertheless, the min. req. means are sufficient and the proposed amendment is totally exaggerated.

response

Partially accepted.

Please refer to the following topics:

Definition and scope of HEMS

Oxygen 1, 2 and 3

Performance

Flight crew training

TCM training

comment

178

comment by: *ELILOMBARDA*





comment on page 7: (...) The available accident data supports the idea that HEMS operations at night or in marginal weather conditions can be improved...

In Italy there have been 3 accidents ( 1 of them with 6 fatalities) in the last 2017 with helicopters involved in HEMS flights in the mountain area. It is important that this kind of operations must be improved. But this NPA REDUCE THE SAFETY NOT IMPROVE, because in the SPA.HEMS.130 Crew Requirements is allowed that the TCM can seat in the passenger cabin instead of pilot cabin. See the comment on the point SPA.HEMS.130.

In Italy, due to the orographic conditions of the country (80% of the country is: high mountains and hills), most of the helicopters in HEMS operations are equipped with HOIST and in each flight could be used because the pilot is not informed in advance if it is possible to land near the place of accidents or its necessary the use of the winch to recovery the patient. For this reason, allowing the TCM in the passenger cabin will be a time pressure on the pilot to decide to always fly alone in the cabin increasing the risk of flying.

**In the 3 accidents of 2017, the technical crew member was sitting in the passenger cabin and the pilot was alone in the cockpit.**

response

Noted  
Please refer to the following topics:  
Crew composition  
TCM seating

comment

182

comment by: *Swiss Air-Ambulance Rega*

2.1 "Exemptions<sup>5</sup> in accordance with **Article 14** 'Flexibility provisions' of the **Basic Regulation** relevant"

Reference should be made to the New Basic Regulation instead of the old BR.

response

Not accepted.  
The exemption that was discussed in the NPA had been filed under the old Basic Regulation (Regulation (EC) No 216/2008).

comment

183

comment by: *Swiss Air-Ambulance Rega*

"Due to the fact that such operations are performed in the public interest, it was felt at the time the rules were drafted that the relevant authority should be able to exercise its discretion so as to allow continued use of such sites provided that it is satisfied that an acceptable level of safety performance can be maintained — notwithstanding that the site does not allow operations to PC1 or PC2 standards."

We appreciate the intention which is necessary to transport critically ill/injured patients to highly specialised and/or medical centres with an assessed and limited accepted risk.

response

Partially accepted  
Please refer to topic 'Public interest sites'.



comment	<p>184 <span style="float: right;">comment by: <i>Swiss Air-Ambulance Rega</i></span></p> <p>"Other than mountain HEMS operations  <u>HEMS operations involve higher levels of risk than pure CAT operations, since HEMS operations may have a direct impact on the patient's health or even their survival.</u>  Some MSs have argued that current rules do not make that industry sector safe enough. The available accident data supports the idea that HEMS operations at night or in marginal weather conditions can be improved."</p> <p>The correlation between higher risk levels and a direct impact on the patient's health is not demonstrated. The highlighted sentence should be deleted.</p>
response	<p>Noted  Thank you</p>
comment	<p>185 <span style="float: right;">comment by: <i>Swiss Air-Ambulance Rega</i></span></p> <p>"2.3.1 [...] Any new hospital landing site that had not been in use before 28.10.2014 is expected to be designed with due considerations to the Air OPS helicopter performance rules."</p> <p>The justified intention is unlikely to be achieved as long as hospitals including new helipads will be build (and maintained) in congested areas.</p> <p>There is a dilemma: On one hand, there is an increased pressure to hospitals (government) to modify their helipads in accordance with ICAO AN14 V2 by the objective to improve and control the environment, particularly the penetrations of the OLS, and, on the other hand, the necessity to build new and improved hospital buildings and its helipads in future."</p>
response	<p>Noted  Please refer to topic 'Public interest sites'.</p>
comment	<p>186 <span style="float: right;">comment by: <i>Swiss Air-Ambulance Rega</i></span></p> <p>"2.3.1 [...]  - If a hospital landing site is currently <u>compatible with the helicopter performance requirements</u>, the obstacle environment should be controlled in such a way that helicopter performance requirements are complied with, otherwise the helicopter operations should be discontinued."</p> <p>Not only performance requirements cannot be met often, but also the prerequisites in ICAO AN14V 2, and particularly the obstacle limitation surface (OLS).</p>
response	<p>Noted  Please refer to topic 'Public interest sites'.</p>
comment	<p>187 <span style="float: right;">comment by: <i>Swiss Air-Ambulance Rega</i></span></p>

	<p>"2.3.2.2 [...] The use of the cargo hook and sling is accepted as an equivalent method to the use of the hoist, to conduct HEMS operations at locations where landing is not a safe option."</p> <p>Sling operations are not as safe as hoist operations (i.e. not equivalent). The sentence should be rephrased. See also next sentence.</p>
response	<p>Noted</p> <p>Please refer to topic 'HEMS HEC'.</p>
comment	<p>188 <span style="float: right;">comment by: <i>Swiss Air-Ambulance Rega</i></span></p> <p>"2.3.3.1 [...] HEMS without NVIS should be restricted to pre-surveyed operating sites, and to well-lit urban areas."</p> <p>The intention is supported to increase flight safety during the night.</p>
response	<p>Noted</p> <p>Thank you</p>
comment	<p>244 <span style="float: right;">comment by: <i>Luftfahrt-Bundesamt</i></span></p> <p><u>Page 11 (Chapter 2.3.1) and Page 28 (Chapter 3.8):</u> The reference to Annex 14 Volume II is not correct; it should be '<i>Table 4-1 Dimensions and slopes of obstacle limitation surfaces for all visual FATOs</i>' instead of '<i>Table 4-3 [...]</i>'.</p>
response	<p>Accepted</p>
comment	<p>278 <span style="float: right;">comment by: <i>Stephanie Selim</i></span></p> <p>DGAC supports the abandonment of the proposal to entrust maintenance tasks to the TCM (2.4 (p. 19)).</p>
response	<p>Noted</p> <p>Thank you</p>
comment	<p>307 <span style="float: right;">comment by: <i>European Helicopter Association (EHA)</i></span></p> <p><b>2.3.3.5 Mitigating the risk of loss of visual reference during flight</b> the timeline should be within 5 to 8 years following the date of application of the amending regulation for the successful implementation of the requirement of Autopilot at night for SP operations.</p>
response	<p>Accepted</p> <p>Please refer to topic 'Autopilots'.</p>
comment	<p>309 <span style="float: right;">comment by: <i>Garmin International</i></span></p> <p>2.3.3.2 Obstacle awareness and avoidance and AMC1 SPA.HEMS.110(b) (Page 15 and Page 29):</p>

The decision to accept electronic flight bag applications for use in Obstacle Awareness and Avoidance applications should not be allowed for the following reasons:

1. The viewability of hardware used for EFB applications is often not suitable for Obstacle Awareness and Avoidance. In daytime lighting conditions existing in helicopter cockpits, many EFBs can be very difficult to see including the inability to discriminate colors even at full brightness; this difficulty requires excessive crew activity to see data presented on the EFB in a safety critical situation. In nighttime lighting conditions, many EFBs cannot be sufficiently dimmed or do not have sufficient resolution when fully dimmed to allow the pilot to rapidly discriminate information presented on the EFB. Display of safety critical data, including Obstacle Awareness and Avoidance data, should be limited to hardware installed in the aircraft which has undergone certification processes that ensure the ability of the crew to readily observe and discriminate data on the display under all foreseeable lighting conditions.
2. Many EFB applications include non-certified terrain and obstacle alerting functions. These functions are not tailored to helicopter operations and frequently provide nuisance alerts that are distracting to the flight crew and may obscure other useful data on the PFD. The use of EFBs should be limited to those that do not include terrain and obstacle alerting functions or for which such functions can be permanently inhibited including over power cycles.
3. The databases used to present information on EFBs may not be subject to the same level of quality and verification processes used for certified avionics. Therefore, it may not be possible to provide the flight crew with accurate information regarding the extent and adequacy of the data presented.

response Not accepted  
Please refer to topic 'Moving maps'.

comment 314 comment by: *tim saueressig*  
2.3.2.3 it should be possible for the commander to fly single pilot to the hospital in case the patient is going to be transported by car and the status of the patient requires the HEMS TC to assist the doctor.

response Noted  
Please refer to topic 'Crew composition'.

comment 315 comment by: *tim saueressig*  
2.1. Because offshore/maritime HEMS is not considered at all.

response Noted



	Thank you
comment	<p>317 <span style="float: right;">comment by: <i>tim saueressig</i></span></p> <p>2.3.3.1. I agree in general however NVIS does not improve flight safety in any case. In our case when we conduct HEMS HHO at ships, windmills or at any other offshore installation we consider NVIS as disadvantage due to the 2D view. Either we consider and adjust the usage of NVIS in certain conditions or make sure that the terms for HEMS operating site does not include HEMS HHO sites. How is "well lit urban areas" defined?</p>
response	<p>Noted Please refer to topic 'NVIS'.</p>
comment	<p>358 <span style="float: right;">comment by: <i>tim saueressig</i></span></p> <p>2.3.3.3. Again, the offshore/maritime environment seems to be not considered. The higher 5km required visibility has no beneficial impact offshore. I suggest to divide between onshore and offshore ops. Offshore ops could have lower visibility minimas. Furthermore I suggest to stop stating minimum ceilings and instead state minimum flight heights. A minimum ceiling of 300ft day or 1200ft at night doesn't prevent of flying in 400ft at night. Sera.5005 is obviously not valid. I suggest for night ops to require a minimum flight height of 500ft above the highest obstacle within 1 Km radius. That gives operator's the chance to establish designated routes for intensive care transport between hospitals or to certain pick up spots. Operators would have to invest more time and put more effort into base specific operations, but more HEMS flights could be completed.</p>
response	<p>Noted Please refer to topic 'VFR minima'.</p>
comment	<p>362 <span style="float: right;">comment by: <i>tim saueressig</i></span></p> <p>2.3.3.7 An exception of CAT.OP.MPA.175 has to be included. It is not possible in HEMS to complete an operational flight plan regardless of complex or non complex aircraft.</p>
response	<p>Accepted</p>
comment	<p>368 <span style="float: right;">comment by: <i>AIRGREEN</i></span></p> <p>We agree that the SAR must be introduced in the SPA.HEMS</p>
response	<p>Not accepted Please refer to topic 'Definition and scope of HEMS'.</p>
comment	<p>505 <span style="float: right;">comment by: <i>Bell Helicopter Textron Inc</i></span></p>
response	<p>Noted Thank you</p>

comment	<p>506 <span style="float: right;">comment by: <i>Bell Helicopter Textron Inc</i></span></p> <p>a. 2.3.2.4 Oxygen Requirements. Generally the NPA is moving in the right direction with respect to oxygen requirements for high altitude operations, but it is not understood why alleviation under Option 2 is given for HEMS operations only. It specifically states it will not be allowed for CAT operations other than HEMS. The risk and outcome from an oxygen related incident are the same regardless of whether it is a HEMS flight conducted under CAT regulations or another type of CAST operation. What is the rationale for excluding other CAT operations from this alleviation under Option 2.</p>
response	<p>Noted. Please refer to topic 'Oxygen 3'.</p>
comment	<p>507 <span style="float: right;">comment by: <i>Bell Helicopter Textron Inc</i></span></p> <p>a. 2.3.2.5 Helicopter performance requirements for mountain operations at high altitudes. (And SPA.HEMS.125(a), and GM1.SPA.HEMS.100(a)(d)). The NPA proposes that to conduct HEMS operations above 10,000 ft, the operation can be conducted PC 3 but only with Cat A certificated helicopters (i.e. twin engine helicopters). The rationale provided states that the system redundancy provided on Cat A certified helicopters reduces the overall operational risks, and these type helicopters are more suited to include other equipment such as HTAWS, autopilots, IFR etc. While the system redundancy argument is valid in terms of enhancing safety, it needs to be weighed against other risk factors associated with high altitude operations. First, the probability of a single engine failure on a twin engine helicopter is 2 X that for a single (2 engines) and the outcome from an engine failure low speed near the ground at higher altitudes is the same for a twin as it is for a single. Second, the total power lapse rate on a twin engine helicopter typically more than that seen on single engine helicopters. This means that if the estimated conditions (pressure altitude, temperature, winds etc) at the operating site are misjudged, the pilot will have more power margin buffer with a single than with a twin to deal with any unforeseen circumstances. Similarly, tail rotor effectiveness at higher altitudes on existing designs is typically somewhat better on single engine helicopters than on twin engine helicopters, again allowing more margin for error when operating under continuously changing demanding conditions. Of course these factors are dependent on the available aircraft being considered for the operations, and these need to be weighed against the quoted system redundancy benefits – which factors have been shown to cause more incidents? Finally, the incorporation of other equipment such as HTAWS, Autopilots etc are just as easily accomplished on modern single engine helicopters, so this should not be used as a rationale to drive the requirement for Cat A (twin engine) helicopters. This rationale needs to be either revisited or better explained to clearly define the suggested</p>

		safety enhancements, a universal requirement for Cat A aircraft for these operations is not considered justified.
response		Partially accepted. Please refer to topic 'Performance'.
comment	508	comment by: <i>Bell Helicopter Textron Inc</i>  a. 2.3.3.2 Obstacle awareness and avoidance. (and AMC1.SPA.HEMS.110(b) The NPA proposes to mandate moving maps with obstacles included. Unfortunately recent accidents have shown that the accuracy of the obstacle database contained in the moving maps is critical to ensure avoidance. How is the accuracy of the database going to be ensured. And possibly equally important, how do we ensure that the crews don't put all their faith in the obstacle database?
response		Noted Please refer to topic 'Moving maps'.
comment	509	comment by: <i>Bell Helicopter Textron Inc</i>  a. 2.3.3.5 Mitigating the risk of loss of visual reference during flight. (and SPA.HEMS.110(e) and AMC1.SPA.HEMS(e)). The NPA proposes to mandate the requirement of a stabilization system or autopilot for single pilot night VFR. This is not aligned with the basic helicopter certification requirements – this change would prohibit the use of helicopters certified for single pilot night VFR from being operated single pilot night VFR. Are there any statistics supporting this proposal? Specifically, are helicopters without stabilization / autopilots more prone to an accident following inadvertent flight into IMC than those fitted with stabilization / autopilots? This may have a lot more to do with pilot proficiency /training than helicopter stabilization systems. This change suggests that operators may have to undertake a fleet change to meet this requirement, do the statistics clearly support such a significant change?
response		Noted Please refer to topic 'Autopilots'.
comment	515	comment by: <i>Bell Helicopter Textron Inc</i>  This requirement is saying that at night, the conditions have to be better than VFR to operate special VFR while unaided. They may as well say that special VFR is not authorized unless the ceilings are above 1,500 ft.
response		Noted Please refer to topic 'VFR minima'.
comment	516	comment by: <i>Bell Helicopter Textron Inc</i>

response	<p>What is new minimum requirement?</p> <p>Noted Thank you</p>
comment	<p>517 <span style="float: right;">comment by: <i>Bell Helicopter Textron Inc</i></span></p> <p>How often do the pilots have to do structured training, and does it require an instructor to fly with the trainee or just a safety observer?</p>
response	<p>Noted Please refer to point ORO.FC.230 as well as to topic 'flight crew training'.</p>
comment	<p>518 <span style="float: right;">comment by: <i>Bell Helicopter Textron Inc</i></span></p> <p>For this 50 mission period, does the crew member have to fly with an instructor for each flight or just another experienced crew member?</p>
response	<p>Noted Please refer to topic 'TCM training'.</p>
comment	<p>523 <span style="float: right;">comment by: <i>DHV e.V.</i></span></p> <p><b>„Exemptions in accordance with Article 14 ‘Flexibility provisions’ of the Basic Regulation relevant to the scope of this RMT:.....“</b></p> <p>Reference should be made to the New Basic Regulation (Regulation (EU) 2018/1139).</p>
response	<p>Not accepted The exemption that was discussed in the NPA had been filed under the old Basic Regulation (Regulation (EC) No 216/2008).</p>
comment	<p>540 <span style="float: right;">comment by: <i>Civil Aviation Authority of Norway</i></span></p> <p>Comment to the term in the headline 2.3.3 'Other than mountain HEMS operations'</p> <p>This chapter outlines several improvements to different parts of SPA.HEMS and associated requirements. We assume that these also apply to 'Montain HEMS', whatever that may be.</p> <p>The reason we mention it is just that this may be another illustration that this NPA seems to be overly complicating issues, as pointed out in our general comment.</p>
response	<p>Noted Thank you</p>





comment	<p>150 <span style="float: right;">comment by: <i>Swedish Transport Agency, Civil Aviation Department (Transportstyrelsen, Luftfartsavdelningen)</i></span></p> <p>2.3.1: Clarify the description of the difference between established before 2002 and approval before or after 2014</p> <p>o There would be a problem for the public interest if the operators misunderstood their responsibilities regarding performance. If it can be proved that PC 2 operations was in use before 28 September 2018, the operations should be allowed to continue even though the approval has been decided after this date</p> <ul style="list-style-type: none"> <li>• The actual timeframe to adjust to the PC1 regime for PIS that were approved for PC2 after 28 October 2014 is too short. Planned decision is 2020 and non-conformed sites should be discontinued 2022</li> <li>• There are still misunderstandings and misconceptions on the requirements for performance on PIS. Some operators still has not understood that the size of the FATO could hinder PC2 and believes that a modern helicopter's sheer force is enough. When the circumstances are identified by the CA after 2014 it should be possible to approve operations in PC2 if it can be proved that the operations were already in use before 2014. If this cannot be done there is a clear risk to grave disadvantages for the public interest. The rule should rather be based on when the operations were actually in use.</li> </ul>
response	<p>Partially accepted Please refer to topic 'Public interest sites'.</p>

comment	<p>208 <span style="float: right;">comment by: <i>DRF-Luftrettung</i></span></p> <p><b>Article 6</b> „Existing helicopter operations to / from a public interest site (PIS) may be conducted in derogation to CAT.POL.H.225 of Annex IV until 31.7.2022 whenever</p> <p style="text-align: center;">- the size of the PIS, - the obstacle environment or - the helicopter</p> <p><b>does not permit compliance with the requirements for operation in PFC 1.“</b></p> <p>CAT.POL.H.225 states only two exemptions: - Size of PIS - obstacle Environment</p> <p><b>We suggest to amend CAT.POL.H.225 to include the helicopter performance as stated in Article 6</b></p>
response	<p>Noted Please refer to topic 'Public interest sites'.</p>

comment	<p>279 <span style="float: right;">comment by: <i>Stephanie Selim</i></span></p> <p>3.1.1 Article 6.6 (p20)</p> <p>DGAC is not in favour of the evolution as proposed and wishes to maintain the current provisions of Article 6.6 in order to maintain flexibility in cases where a hospital landing site not falling under the SIP criterion could not be used in CP1.</p>
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This position is based on the following arguments:

- EASA explains that because some countries have abused of the flexibilities given by CAT.POL.H.225 and Article 6.6 that they must be stopped. DGAC agrees with the Agency's objective to make limited use of CP2 operations to the extent necessary, whether through CAT.POL.H.225 or Article 6.6. However, DGAC considers that it has not misused these flexibilities and advocates their long-term duration.
- HEMS is a major mission for the State. It is carried out by about 45 helicopters spread over French territory. France has chosen to delegate this public service mission to private operators falling within the regulatory scope of EASA. These operators are subject to greater regulatory constraints than those of State aircraft. It is therefore necessary to ensure the permanence and continuity of this mission by allowing reasonable alleviation when circumstances do not allow all the regulatory CAT requirements of standard public transport to be met.
- Only the latest generation of helicopters have engine performances that make easier for them to overcome obstacles to landing or take off in the event of an engine failure. Systematically requiring that level of performance too quickly would be equivalent to requiring an accelerated renewal of the current fleet of aircraft. However, the fleet is largely composed of previous generation helicopters whose acquisition costs are amortized and whose operating costs are lower. In the end, requiring this too rapid renewal would place a heavy burden on public finances.
- DGAC does not have the capacity to ensure and guarantee that all sites established before or after 2014 do not see their environment deteriorate temporarily or permanently. Some hospital sites have particular characteristics (surrounding relief, high altitude and temperature, swirling or adverse winds,...) and compliance with all CP1 criteria cannot be ensured permanently in all cases. In addition, compliance with CP1 criteria is specific to each helicopter type depending on the characteristics of the helipads. For reasons of helicopter medical rescue efficiency, it may be necessary to replace a helicopter meeting the CP1 criteria with another one, more modern and higher-end aircraft, but which will not be able to meet all the CP1 requirements because the hospital landing site could not evolve at the same time.

As a conclusion, DGAC wishes to maintain the current flexibilities given by CAT.POL.H.225 and Article 6.6 over time because they are necessary to ensure the permanence of emergency medical assistance and their reasonable implementation does not abnormally degrade the level of safety. As CAT.POL.H.225 and Article 6.6 deal with the same subject in general terms, i.e. the compatibility between helipad characteristics and helicopter performance, DGAC suggests that they be grouped under a single regulatory point. Finally, DGAC would agree that the agency put in place a control on the proper use of these flexibilities. To illustrate this point, the number of sites operated as SIPs has almost halved since the implementation of AIR-OPS and Article 6.6 has only been used one time and under very specific and limited circumstances and for a short period of time.

response

Noted  
Thank you  
Please refer to topic 'Public interest sites'.

comment

410 comment by: *FNAM/SNEH*  
Article 6



HEMS operations are deeply linked with national health, security and safety. HEMS operations depend on the organization of the French healthcare system (the permanence and continuity of care services is a public service & a sovereign prerogative), with groupings of medical equipment and skills. HEMS in France is both operated by private operators and the State. State may charter private operators to operate HEMS operations on its behalf. Current French regulation thus allows, by sovereign decision of the State, to grant derogation for HEMS operations as far as national health, security or safety is involved. FNAM and SNEH totally disagree with the deadline (31.7.2022) for the possibility to conduct operations to/from a public interest site in derogation to CAT.POL.H.225. It should be possible, in the case of PIS use, for the authority to issue derogations for these sites and ensure continuity of HEMS operations as permitted with the current regulation.

response

Noted  
Please refer to topic 'Public interest sites'.

comment

422

comment by: SAF

Article 6

HEMS operations are deeply linked with national health, security and safety. HEMS operations depend on the organization of the French healthcare system (the permanence and continuity of care services is a public service & a sovereign prerogative), with groupings of medical equipment and skills. HEMS in France is both operated by private operators and the State. State may charter private operators to operate HEMS operations on its behalf. Current French regulation thus allows, by sovereign decision of the State, to grant derogation for HEMS operations as far as national health, security or safety is involved. SAF totally disagrees with the deadline (31.7.2022) for the possibility to conduct operations to/from a public interest site in derogation to CAT.POL.H.225. It should be possible, in the case of PIS use, for the authority to issue derogations for these sites and ensure continuity of HEMS operations as permitted with the current regulation.

response

Noted  
Please refer to topic 'Public interest sites'.

comment

434

comment by: MBH SAMU

Article 6

HEMS operations are deeply linked with national health, security and safety. HEMS operations depend on the organization of the French healthcare system (the permanence and continuity of care services is a public service & a sovereign prerogative), with groupings of medical equipment and skills. HEMS in France is both operated by private operators and the State. State may charter private operators to operate HEMS operations on its behalf. Current French regulation thus allows, by sovereign decision of the State, to grant derogation for HEMS operations as far as national health, security or safety is involved. HBG totally disagrees with the deadline (31.7.2022) for the possibility to conduct operations to/from a public interest site in derogation to CAT.POL.H.225. It should be possible, in the case of PIS use, for the



response	authority to issue derogations for these sites and ensure continuity of HEMS operations as permitted with the current regulation.
response	Noted Please refer to topic 'Public interest sites'.
comment	446 <span style="float: right;">comment by: <i>Oya Vendée Hélicoptères</i></span>  Article 6  HEMS operations are deeply linked with national health, security and safety. HEMS operations depend on the organization of the French healthcare system (the permanence and continuity of care services is a public service & a sovereign prerogative), with groupings of medical equipment and skills. HEMS in France is both operated by private operators and the State. State may charter private operators to operate HEMS operations on its behalf. Current French regulation thus allows, by sovereign decision of the State, to grant derogation for HEMS operations as far as national health, security or safety is involved. OYA totally disagrees with the deadline (31.7.2022) for the possibility to conduct operations to/from a public interest site in derogation to CAT.POL.H.225. It should be possible, in the case of PIS use, for the authority to issue derogations for these sites and ensure continuity of HEMS operations as permitted with the current regulation.
response	Noted Please refer to topic 'Public interest sites'.
comment	459 <span style="float: right;">comment by: <i>Civil Aviation Authority of Norway</i></span>  The proposed change in article 6 (6) is supported.
response	Noted Thank you Please refer to topic 'Public interest sites'.

<b>3. Proposed amendments and rationale in detail — 3.2. Draft regulation (draft EASA opinion) — Annex I (Definitions)</b> <span style="float: right;">p. 20-21</span>
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comment	7 <span style="float: right;">comment by: <i>AIRBUS HELICOPTERS</i></span>  The definition of 'HEMS flight' should be amended as:  (b) to perform any <b>rescue</b> operation where either:  Indeed adding the word 'rescue' is important in order to clarify that operations under (b)(2) are still rescue operations, as explained in the example of supplying persons, animals and equipment in case of avalanche rescue operations given at the end of page 11.
response	Noted Please refer to topic 'Definition and scope of HEMS'.

comment	<p>24 <span style="float: right;">comment by: <i>FOCA Helicopter Operations</i></span></p> <p>See comment page 22: Change of HEMS definition is neither proportional nor in the public interest.</p>
response	<p>Noted</p> <p>Please refer to topic 'Definition and scope of HEMS'.</p>
comment	<p>76 <span style="float: right;">comment by: <i>UK CAA</i></span></p> <p><b>Page No:</b> 21</p> <p><b>Paragraph No:</b> 3.2, sub-paragraph 4 (b)(i)</p> <p><b>Comment:</b> As mentioned in a previous UK CAA comment, it is considered that the use of the term "rescue" in the HEMS context is liable to introduce confusion and uncertainty. We recommend change to 'recovery' or 'retrieval' to differentiate between the two disciplines. This principle should be reflected throughout the NPA and appropriate changes made to the affected text.</p> <p><b>Justification:</b> Clarity of operations and regulations</p> <p><b>Proposed Text:</b></p> <p>(b) to perform any operation where either:</p> <p>(i) a person is at imminent or anticipated health risk from the environment and needs to be <del>rescued</del> <b>recovered</b> or provided with supplies; or</p>
response	<p>Noted</p> <p>Please refer to topic 'Definition and scope of HEMS'.</p>
comment	<p>189 <span style="float: right;">comment by: <i>Swiss Air-Ambulance Rega</i></span></p> <p>Definition (61) ["HEMS flight"]</p> <p>"(a) to facilitate emergency medical assistance <del>where immediate and rapid transportation is essential</del> by carrying one or more of the following [...]"</p> <p>and the insertion of paragraph (b)(i)</p> <p>"(i) a person is at imminent or anticipated health risk from the environment and needs to be rescued or provided with supplies; [...]"</p> <p>The deletion of the passus "where immediate and rapid transportation is essential" and the insertion of paragraph (b)(i) is supported. The new definition enables also preventive and anticipated HEMS missions in the future, already before a potentially life-threatening situation with an only then immediate need for raid transportation has evolved, justifying a HEMS mission according to the current regulation.</p>
response	<p>Noted</p>



Please refer to topic 'Definition and scope of HEMS'.

comment

209

comment by: *DRF-Luftrettung*

### 3.2 Definition of HEMS Flight

**'HEMS flight' means a flight by a helicopter operating under a HEMS approval, where immediate and rapid transportation is essential and the purpose of which is either...**

The German industrial norm regarding the health services (DIN 13050) – Terms and Definitions for medical rescue services – distinguishes between rescue flights and intensive care flights(HICAMS). The definition of the new proposal does not include these intensive medical care flights. Very often there is no immediate transportation necessary and it may take 2 hours, until the patient has to be transported; but due to the health status of the patient it may not be possible, to transport the patient by road. These scenarios must be included into the HEMS-Definitions.

It sounds a little bit weird, that the hospital waits (in above example) two hours, until the transport has to be made immediate, so that the HEMS-Crew can fly under the HEMS-Exemptions:

**We therefore suggest, to amend the definition as follows:**

**Add: (b) (iii) Whenever a transport with ground based rescue means is medically not reasonable**

response

Not accepted

Please refer to topic 'Definition and scope of HEMS'.

comment

257

comment by: *Babcock Mission Critical Services Limited*

### Issue

1. There is no exclusion (and there needs to be one) in the NPA definition 61(b)(i) for operations we understand as SAR which are carried out at sea, involving HHO/ HEC where a person is at imminent or anticipated health risk from the environment.

2. The use of the word 'rescue' may lead to confusion with the phrase 'Search and Rescue' (SAR), which should be avoided within the rule wording.

### Why?

Inadequate distinction between SAR and HEMS, potentially allowing traditional maritime SAR to be performed under a HEMS approval.

### Suggested alternative:

Introduce new term "HEMS Retrieval" defined as: "An operation conducted under a HEMS approval to retrieve persons in distress, provide for their initial medical or other needs and deliver them to a place of safety."

Remove all references to "rescue operations other than SAR operations" and replace with "HEMS Retrieval operations" and revise definition of "HEMS flight" to read: "(61) ... or (b) to perform any operation where either: (i) a person is at imminent or anticipated health risk from the environment **on land** and needs to be retrieved or



response	<p>provided with supplies; or (ii) persons, animals or equipment need to be transported to and from the HEMS operating site;"</p> <p>NB Avoid the use of "HEMS Recovery" as the word "recovery", in general parlance, is usually reserved for the recovery of corpses, not the "rescue" or "retrieval" of living persons.</p> <p>Noted Please refer to topic 'Definition and scope of HEMS'.</p>
comment	<p>258 <span style="float: right;">comment by: <i>Babcock Mission Critical Services Limited</i></span></p> <p><b>Issue</b></p> <p>'HEC' definition replaces 'hoist operations' in the definition of HEMS Ops Site, potentially excluding HEMS HHO (hoist operations, in particular re-supply that does not include HEC) from constituting a HEMS Operating Site.</p> <p><b>Why?</b></p> <p>Potential confusion over HEMS HHO versus HEMS HEC operations.</p> <p><b>Suggested alternative</b></p> <p>(63) 'HEMS operating site' means a site selected by the commander during a HEMS flight for a HEMS HEC or HEMS HHO operation or a landing or a take-off.</p>
response	<p>Noted Please refer to topic 'HEMS HEC'.</p>
comment	<p>280 <span style="float: right;">comment by: <i>Stephanie Selim</i></span></p> <p>3.2.4 HEMS definition (p20)</p> <p>GM1 SPA.HEMS.100(a) should recall the definition of SAR in order to clarify what falls under the BR and what is excluded from it. The following sentences (p. 7 of the NPA) could be added to the GM:</p> <p>"It should be noted that SAR operations are clearly not within the remit of EASA as they fall outside the scope of the Basic Regulation. ICAO defines SAR operations as follows:</p> <ul style="list-style-type: none"> <li>- search: an operation, normally coordinated by a rescue coordination centre or rescue sub-centre, using available personnel and facilities to locate persons in distress. –</li> <li>- rescue: an operation to retrieve persons in distress, provide for their initial medical or other needs and deliver them to a place of safety.</li> </ul> <p>It is an institutional service coordinated by rescue centres, mainly for the purpose of providing assistance to aircraft."</p>
response	<p>Noted Please refer to topic 'GM1 SPA.HEMS.100'.</p>



comment	<p>318 <span style="float: right;">comment by: <i>NOLAS</i></span></p> <p><b>3.2. Draft regulation (draft EASA opinion) — Annex I (Definitions) (61) ‘HEMS flight’</b> The change to the definition of ‘HEMS flight’ is a relevant change / addition to the definition that will take away some unfortunate “gray-zone” operation conducted by non HEMS operators at a, sometimes, unacceptable risk level.</p>
response	<p>Noted Thank you</p>
comment	<p>334 <span style="float: right;">comment by: <i>ADAC Luftrettung gGmbH</i></span></p> <p><i>Annex I Definitions (61) (a) Page 20</i></p> <div style="border: 1px solid black; padding: 5px;"> <p>amend GM5 Annex I Definitions (b) "(4) pick-up of aeromedical crew-members needed to re-establish mission-readiness"</p> <p>reasons: If for medical reasons the patient needs to be transported to the hospital using ground based vehicles he or she sometimes needs to be accompanied by medical personnel of the helicopter. Once the patient is delivered to the hospital, the HEMS-helicopter needs to pick up the medical personnel at this hospital to quickly re-establish mission-readiness. Therefore, it should be clarified, that the pick-up of essential medical personnel is integral part of a HEMS-mission as well, for otherwise the HEMS-helicopter would remain non-mission-ready for a long time and that in turn would generate undue costs and inefficiencies for the public rescue system.</p> </div>
response	<p>Noted The proposed point (b)(4) is included in existing point (b)(2). Please refer also to topic ‘Definition and scope of HEMS’.</p>
comment	<p>363 <span style="float: right;">comment by: <i>tim saueressig</i></span></p> <p>As I mentioned before, a ship would be a HEMS operating site and would require NVIS which I do not support.</p>
response	<p>Noted Please refer to topic ‘NVIS’.</p>
comment	<p>370 <span style="float: right;">comment by: <i>AIRGREEN</i></span></p> <p>(63) ‘HEMS operating site’ means a site selected by the commander during a HEMS flight for helicopter hoist a HEMS HEC operation or a landing or a take-off;</p> <p>Great. Evaluate whether to insert "hovering disembarkation and embark" considering that it is an operation that is carried out from operators and that has been foreseen on page 7 of this NPA.</p>



response	Noted Please refer to topic 'Definition of the HEMS operating site'.
comment	374 <span style="float: right;">comment by: <i>European Cockpit Association</i></span>  Commented text: <b>3.2. Draft regulation (draft EASA opinion) — Annex I (Definitions) (61) 'HEMS flight' (b)</b>  ECA's comment: We agree with the change and addition to the definition of 'HEMS flight'.
response	Noted Thank you Please refer also to topic 'Definition and scope of HEMS'.
comment	399 <span style="float: right;">comment by: <i>Mario Tortorici</i></span>  1. We fully support the inclusion of HEC operations in HEMS concept, since in some cases it is a way to enhance flight safety and effectiveness of the emergency medical service
response	Noted Thank you Please refer also to topic 'HEMS HEC'.
comment	411 <span style="float: right;">comment by: <i>FNAM/SNEH</i></span>  Definition of HEMS flight  For France, changing the HEMS flight definition by including operations for a person at imminent or anticipated health risk from the environment and when persons, animal or equipment need to be transported to and from the HEMS operating site would have a major impact on mountain operations (skiing areas). Single-engine CAT operations would no longer be possible. It would be the same for the transport of persons and dogs as part of an avalanche intervention. This situation would lead to an important increase of these operations costs for municipalities due to the use of twin engines helicopters, flight assistants and the regulatory framework of HEMS operations. Another difficulty is to offer seasonal services (4 months) in twin engines helicopters with winter weather conditions that significantly reduce the occurrence of flights. Operators only charge flight times during interventions. Municipalities do not bear the fixed costs of the helicopter and its crew. The financial equilibrium of this activity is reached today thanks to summer employment of single-engine helicopters in SPO operations. The constant rotation between summer and winter single engine helicopters activities would no longer be possible due to HEMS operations requirements. This situation would be inconceivable for French government, health care system, population and the near hundred of municipalities concerned by these regulatory changes. Moreover in terms of safety, the handling of twin-engine helicopters equipped with IFR / Autopilot is penalizing with regard to the manoeuvrability of a highly motorized single engine helicopter, especially in confined



	<p>and isolated areas often encountered in the mountainous areas. Operators do not wish to change the current in force definition.</p> <p>FNAM and SNEH propose to create a special regulatory framework for inter-hospital transfer operations, with only CAT requirements.</p>
response	<p>Not accepted Please refer to topic 'Performance'.</p>

comment	<p>423 <span style="float: right;">comment by: SAF</span></p> <p>Definition of HEMS flight</p> <p>For France, changing the HEMS flight definition by including operations for a person at imminent or anticipated health risk from the environment and when persons, animal or equipment need to be transported to and from the HEMS operating site would have a major impact on mountain operations (skiing areas). Single-engine CAT operations would no longer be possible. It would be the same for the transport of persons and dogs as part of an avalanche intervention. This situation would lead to an important increase of these operations costs for municipalities due to the use of twin engines helicopters, flight assistants and the regulatory framework of HEMS operations. Another difficulty is to offer seasonal services (4 months) in twin engines helicopters with winter weather conditions that significantly reduce the occurrence of flights. Operators only charge flight times during interventions. Municipalities do not bear the fixed costs of the helicopter and its crew. The financial equilibrium of this activity is reached today thanks to summer employment of single-engine helicopters in SPO operations. The constant rotation between summer and winter single engine helicopters activities would no longer be possible due to HEMS operations requirements. This situation would be inconceivable for French government, health care system, population and the near hundred of municipalities concerned by these regulatory changes. Moreover in terms of safety, the handling of twin-engine helicopters equipped with IFR / Autopilot is penalizing with regard to the manoeuvrability of a highly motorized single engine helicopter, especially in confined and isolated areas often encountered in the mountainous areas. Operators do not wish to change the current in force definition.</p> <p>SAF proposes to create a special regulatory framework for inter-hospital transfer operations, with only CAT requirements</p>
response	<p>Not accepted Please refer to topic 'Performance'.</p>

comment	<p>435 <span style="float: right;">comment by: MBH SAMU</span></p> <p>Definition of HEMS flight</p> <p>For France, changing the HEMS flight definition by including operations for a person at imminent or anticipated health risk from the environment and when persons, animal or equipment need to be transported to and from the HEMS operating site would have a major impact on mountain operations (skiing areas). Single-engine CAT operations would no longer be possible. It would be the same for the transport of</p>
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	<p>persons and dogs as part of an avalanche intervention. This situation would lead to an important increase of these operations costs for municipalities due to the use of twin engines helicopters, flight assistants and the regulatory framework of HEMS operations. Another difficulty is to offer seasonal services (4 months) in twin engines helicopters with winter weather conditions that significantly reduce the occurrence of flights. Operators only charge flight times during interventions. Municipalities do not bear the fixed costs of the helicopter and its crew. The financial equilibrium of this activity is reached today thanks to summer employment of single-engine helicopters in SPO operations. The constant rotation between summer and winter single engine helicopters activities would no longer be possible due to HEMS operations requirements. This situation would be inconceivable for French government, health care system, population and the near hundred of municipalities concerned by these regulatory changes. Moreover in terms of safety, the handling of twin-engine helicopters equipped with IFR / Autopilot is penalizing with regard to the manoeuvrability of a highly motorized single engine helicopter, especially in confined and isolated areas often encountered in the mountainous areas. Operators do not wish to change the current in force definition.</p> <p>HBG proposes to create a special regulatory framework for inter-hospital transfer operations, with only CAT requirements.</p>
response	<p>Not accepted Please refer to topic 'Performance'.</p>

comment	<p>447 <span style="float: right;">comment by: <i>Oya Vendée Hélicoptères</i></span></p> <p>Definition of HEMS flight</p> <p>For France, changing the HEMS flight definition by including operations for a person at imminent or anticipated health risk from the environment and when persons, animal or equipment need to be transported to and from the HEMS operating site would have a major impact on mountain operations (skiing areas). Single-engine CAT operations would no longer be possible. It would be the same for the transport of persons and dogs as part of an avalanche intervention. This situation would lead to an important increase of these operations costs for municipalities due to the use of twin engines helicopters, flight assistants and the regulatory framework of HEMS operations. Another difficulty is to offer seasonal services (4 months) in twin engines helicopters with winter weather conditions that significantly reduce the occurrence of flights. Operators only charge flight times during interventions. Municipalities do not bear the fixed costs of the helicopter and its crew. The financial equilibrium of this activity is reached today thanks to summer employment of single-engine helicopters in SPO operations. The constant rotation between summer and winter single engine helicopters activities would no longer be possible due to HEMS operations requirements. This situation would be inconceivable for French government, health care system, population and the near hundred of municipalities concerned by these regulatory changes. Moreover in terms of safety, the handling of twin-engine helicopters equipped with IFR / Autopilot is penalizing with regard to the manoeuvrability of a highly motorized single engine helicopter, especially in confined and isolated areas often encountered in the mountainous areas. Operators do not wish to change the current in force definition.</p>
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response	<p>OYA proposes to create a special regulatory framework for inter-hospital transfer operations, with only CAT requirements.</p> <p>Not accepted Please refer to topic 'Performance'.</p>
comment	<p>460 <span style="float: right;">comment by: <i>Civil Aviation Authority of Norway</i></span></p> <p>Definition HEMS HEC This definition is connected to adding rescue and, hoisting probably, to the HEMS special approval. CAA-Norway does not support this addition as it causes confusion, especially the way it is proposed in this NPA. In keeping the terminology aligned with airworthiness regulations, HEC in the form of HHO is already covered in the regulation as SPA.HHO. There should not be any "modified" HEC HHO in HEMS. If understood correctly, what is intended is to include what some call "fixed rope" HEC in SPA.HEMS. That is not made sufficiently clear in the NPA.  SPA.HHO is available to any HEMS operator. It most likely does not need to be much expanded on in SPA.HEMS.</p>
response	<p>Noted Please refer to the following topics: Definition and scope of HEMS HEMS HEC</p>
comment	<p>461 <span style="float: right;">comment by: <i>Civil Aviation Authority of Norway</i></span></p> <p>Definition of HEMS flight CAA-Norway does not support the change of the definition, especially not the way the consequences of the change are laid out in the proposals in this NPA. See our general comment to the proposed new HEMS concept.</p>
response	<p>Noted Please refer to the following topics: Definition and scope of HEMS HEMS HEC</p>
comment	<p>510 <span style="float: right;">comment by: <i>EHAC</i></span></p> <p><i>3.2. Draft regulation (draft EASA opinion) — Annex I (Definitions)</i></p> <p><i>61) 'HEMS flight' means a flight by a helicopter operating under a HEMS approval, where immediate and rapid transportation is essential and the purpose of which is either:</i></p> <p>...</p> <p>Transportation by helicopter from one hospital to another may also be indicated by patient condition vs. other means of transportation. In many countries these flight are defined as part of HEMS under national regulations. This current practice should be reflected in the rule.</p>

	<p>Suggest to change to read:</p> <p>61) ‘HEMS flight’ means a flight by a helicopter operating under a HEMS approval, <del>where immediate and rapid transportation is essential and</del> the purpose of which is either:</p> <p>...</p>
response	<p>Not accepted</p> <p>Please refer to topic ‘Definition and scope of HEMS’.</p>
comment	<p>524 <span style="float: right;">comment by: <i>DHV e.V.</i></span></p> <p>„(61) ‘HEMS flight’ means a flight by a helicopter operating under a HEMS approval, where immediate and rapid transportation is essential and the purpose of which is either:...”</p> <p>A new definition, which should cover all applications in the scope of HEMS, including search and rescue purposes, is generally supported. But „transportation“ seems not wide enough. Therefore DHV proposes:</p> <p>‘HEMS flight’ means a flight by a helicopter operating under a HEMS approval, where <b>urgent</b>, immediate or rapid <b>helicopter operation</b> is essential and the purpose of which is either:</p> <p>(a) to facilitate emergency medical assistance by carrying one or more of the following:</p> <p>(i) medical personnel;</p> <p>(ii) medical supplies (equipment, blood, organs, drugs);</p> <p>(iii) ill or injured persons and other persons directly involved;</p> <p>or</p> <p>(b) to perform any operation where either:</p> <p>(i) a person is at imminent or anticipated health risk from the environment and needs to be <b>located</b>, rescued or provided with supplies; or</p> <p><u>(ii) persons, animals or equipment need to be transported to and from the HEMS operating site; or</u></p> <p>(iii) persons, animals or equipment need to be transported to and from hospitals;</p>
response	<p>Not accepted</p> <p>Unnecessary additions. Please refer also to topic ‘Definition and scope of HEMS’.</p>

**3. Proposed amendments and rationale in detail — 3.3. Draft regulation (draft EASA opinion) — Part-ARO**

p. 21

comment	<p>52 <span style="float: right;">comment by: <i>Svensk Luftambulans</i></span></p> <p>ARO.OPS.220</p> <p>New para MS school keep a register of all heliports including PIS with MAPs and Approach and Departure routes including PINS in AIP AD.</p>
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response	Noted Please refer to topic 'Public interest sites'.
comment	190 <span style="float: right;">comment by: Swiss Air-Ambulance Rega</span>  ARO.OPS.220 (a) To create a level playing field, scope and method of these assessments shall be similar in all EASA MS. Therefore, ARO.OPS.220 is to be amended; at least additional specifying GM is necessary to achieve a EASA-wide „PIS assessment standard“.
response	Noted Please refer to topic 'Public interest sites'.
comment	210 <span style="float: right;">comment by: DRF-Luftrettung</span>  <b>ARO.OPS.220 in conjunction with AMC3 ARO.OPS.220</b> <b>The list of public interest sites shall only include sites that were established as public interest sites before 1 July 2002, or sites that were established as public interest sites before 28 October 2014 and a derogation under Article 6.6 of this Regulation has been notified to the Commission and the Agency.</b>  Of course we agree with the implementation of a state directory. But until 2022 the operator are allowed, to use PIS, which have been established between 2014 and 2018. Therefore it would be a deterioration in flight safety, if these sites would not be – at least – temporary included in that directory.  <b>Please amend ARO.OPS.220 (c), to include these sites as an annex</b>
response	Not accepted Point ARO.OPS.220 is an authority requirement that describes how to assess requests for a CAT.POL.H.225 approval, irrespective of Article 6(6). Please refer also to topic 'Public interest sites'.
comment	211 <span style="float: right;">comment by: DRF-Luftrettung</span>  <b>ARO.OPS.220 in conjunction with AMC3 ARO.OPS.220</b>  (B) PIS may be used in other countries (i.e. border crossing missions).  <b>In our opinion it would be very supportive, if the EASA would publish a template for the PIS directory</b>
response	Not accepted Please refer to topic 'Public interest sites'.
comment	212 <span style="float: right;">comment by: DRF-Luftrettung</span>  <b>ARO.OPS.220 (d)</b> <b>If changes to the obstacle environment at a public interest site are notified or discovered, the competent authority shall assess whether the approval remains</b>



	<p>valid. If changes further hinder <u>performance class 1 operations</u> on a permanent basis:                  (1) the approval shall be revoked;                  (2) the site will no longer qualify for a public interest site approval under CAT.POL.H.225 until the new obstacles are removed.</p> <p>Why do we have PIS? In our opinion mainly, because the size and the obstacle environment do not allow to fly in PFC 1!!!!                  What is therefore the sense of the new proposal? We have an obstacle environment, which <u>does not allow for PFC 1</u> and when a new obstacle environment hinders operation in PFC 1, according to your proposal, the approval shall be revoked.                  Please consider, that there may be many obstacles, which do not allow operation in PFC 1, but are safe for operation in PFC 2</p> <p><b>Please change the text to read</b>                  ...If changes further hinder <u>performance class 2 operations</u> on a permanent basis:                  .....</p>
response	<p>Partially accepted                  Please refer to topic 'Public interest sites'.</p>

comment	<p>234 <span style="float: right;">comment by: FAA</span></p> <p><u>Flights to / from public interest sites (PISs) Maintain a high aviation safety level by reviewing the requirements related to located in congested areas; and</u></p> <p>3.3.1...(c) and (d)...During day light hours, a new / relief pilot could use some assistance locating an off-sight LZ. There should be a small photo file on board with a photo of the LZ and any obstructions noted, in or out of the LZ.</p>
response	<p>Noted                  It appears to be covered under AMC1 CAT.OP.MPA.105.                  Please refer also to topic 'Public interest sites'.</p>

comment	<p>245 <span style="float: right;">comment by: Babcock MCS RW Italia</span></p> <p>3.2. Draft regulation (draft EASA opinion) — Annex I (Definitions)5. The definition of 'HEMS operating site' is amended as follows:                  (63) 'HEMS operating site' means a site selected by the commander during a HEMS flight for helicopter hoist a HEMS HEC operation or a landing or a take-off;</p> <p>The definition does not take into account the HHo operations with the only embark and disembark of materials during rescue operations.</p> <p>It seems not possible to disembark equipment and /or materials as far as necessary to complete the rescue mission.</p> <p><b>Suggested alternative text(s):</b>                  5. The definition of 'HEMS operating site' is amended as follows:                  (63) 'HEMS operating site' means a site selected by the commander during a HEMS flight for <del>helicopter hoist</del> HHO or a HEMS HEC operation or a landing or a take-off;</p>
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response	<p>Not accepted</p> <p>HEC includes both helicopter hoist operations (HHOs) and operations with the cargo sling.</p> <p>Please refer also to the following topics:</p> <ul style="list-style-type: none"> <li>Definition of the HEMS operating site</li> <li>HEMS HEC</li> </ul>
comment	<p>281 <span style="float: right;">comment by: <i>Stephanie Selim</i></span></p> <p>ARO.OPS.220 (p21)</p> <p>DGAC would like to ensure that a flexibility provision 71.1/71.2 will always be possible to temporarily authorize CP2 operation in the event of temporary work or obstacles. The term "permanent" should also be introduced before "in the obstacle environment".</p>
response	<p>Accepted</p> <p>Please refer to topic 'public interest sites'.</p>
comment	<p>336 <span style="float: right;">comment by: <i>ADAC Luftrettung gGmbH</i></span></p> <p>3.3.1. ARO.OPS.220 (d) Page 21</p> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p>The meaning of this section is unclear: A change to the obstacle environment can further restrict the flight-procedures or it can make safer flight-procedures possible or it can be irrelevant to the flight-procedures at the landing site. The legal consequence under the current wording is in any case revoking of the approval and/or(?) disqualification for an approval. We recommend to rephrase this section to make the intention of rulemaker clearer.</p> </div>
response	<p>Accepted</p> <p>Please refer to topic 'Public interest sites'.</p>
comment	<p>412 <span style="float: right;">comment by: <i>FNAM/SNEH</i></span></p> <p>ARO.OPS.220</p> <p>The regulatory changes proposed in the ARO.OPS.220 paragraphs (d) and (e) will deprive certain hospitals of a helicopter air service, in particular when operations will be carried out in or near the hospital. This situation is not acceptable, neither for helicopter operators, nor for health care system.</p> <p>There is also a potential difficulty in changing the type of helicopter on a region that would make infrastructure unfit for CP1 because of a new helicopter that, although</p>



response	<p>more powerful, may be more demanding in terms of FATO dimensions and safety perimeter associated with FATO.</p> <p>Noted Please refer to topic 'Public interest sites'.</p>
comment	<p>424 <span style="float: right;">comment by: SAF</span></p> <p>ARO.OPS.220 The regulatory changes proposed in the ARO.OPS.220 paragraphs (d) and (e) will deprive certain hospitals of a helicopter air service, in particular when operations will be carried out in or near the hospital. This situation is not acceptable, neither for helicopter operators, nor for health care system. There is also a potential difficulty in changing the type of helicopter on a region that would make infrastructure unfit for CP1 because of a new helicopter that, although more powerful, may be more demanding in terms of FATO dimensions and safety perimeter associated with FATO.</p>
response	<p>Noted Please refer to topic 'Public interest sites'.</p>
comment	<p>436 <span style="float: right;">comment by: MBH SAMU</span></p> <p>ARO.OPS.220 The regulatory changes proposed in the ARO.OPS.220 paragraphs (d) and (e) will deprive certain hospitals of a helicopter air service, in particular when operations will be carried out in or near the hospital. This situation is not acceptable, neither for helicopter operators, nor for health care system. There is also a potential difficulty in changing the type of helicopter on a region that would make infrastructure unfit for CP1 because of a new helicopter that, although more powerful, may be more demanding in terms of FATO dimensions and safety perimeter associated with FATO.</p>
response	<p>Noted Please refer to topic 'Public interest sites'.</p>
comment	<p>448 <span style="float: right;">comment by: Oya Vendée Hélicoptères</span></p> <p>ARO.OPS.220 The regulatory changes proposed in the ARO.OPS.220 paragraphs (d) and (e) will deprive certain hospitals of a helicopter air service, in particular when operations will be carried out in or near the hospital. This situation is not acceptable, neither for helicopter operators, nor for health care system. There is also a potential difficulty in changing the type of helicopter on a region that would make infrastructure unfit for CP1 because of a new helicopter that, although more powerful, may be more demanding in terms of FATO dimensions and safety perimeter associated with FATO.</p>
response	<p>Noted Please refer to topic 'Public interest sites'.</p>

comment	<p>462 <span style="float: right;">comment by: Civil Aviation Authority of Norway</span></p> <p>Comment to ARO.OPS.220 (d)</p> <p>This provision should rather require the operator to reassess the use of the PIS and apply for a change to the approval or inform the authority that the operation has to stop.</p> <p>Justification: It is unrealistic to assume that authorities will have sufficient detailed knowledge of such issues to initiate and do the performance calculations.</p> <p>Proposed text:</p> <p>(d) If changes to the obstacle environment at a public interest site are notified or discovered, the <del>competent authority</del><b>operator</b> shall assess whether the approval remains sufficient. <b><u>The operator shall inform the competent authority of the situation and of the result of the assessment, including an application for change to the approval, if required.</u></b> If changes further hinder performance class 1 operations on a permanent basis, <b><u>the competent authority:</u></b></p> <p>(1) <b><u>shall revoke</u></b> the approval <del>shall be revoked</del>; (2) <b><u>determine that</u></b> the site will no longer qualify for a public interest site approval under CAT.POL.H.225 until the new obstacles are removed.</p>
response	<p>Partially accepted</p> <p>Greater operator involvement to be introduced in point CAT.POL.H.225 and in the AMC to it, not in Part-ARO.</p> <p>Please refer to topic 'Public interest sites'.</p>
comment	<p>527 <span style="float: right;">comment by: DHV e.V.</span></p> <p><b>ARO.OPS.220 Approval of helicopter operations to or from a public interest site</b></p> <p>(c) The list of public interest sites shall only include sites that were established as public interest sites before 1 July 2002, or sites that were established as public interest sites before 28 October 2014 and a derogation under Article 6.6 of this Regulation has been notified <del>to the Commission and the Agency</del>.</p> <p>DHV proposes to delete "to the Commission an the Agency", because it may be that some derogations are only notified on national MS level. This seems to be sufficient.</p>
response	<p>Not accepted</p> <p>Please refer to topic 'Public interest sites'.</p>
comment	<p>528 <span style="float: right;">comment by: DHV e.V.</span></p> <p>ARO.OPS.220 (a)</p> <p>To create a level playing field, scope and method of these assessments shall be similar in all EU MS. Therefore specifying GM to ARO.OPS.220 will be helpful.</p>
response	<p>Not accepted</p> <p>Please refer to topic 'Public interest sites'.</p>

**3. Proposed amendments and rationale in detail — 3.4. Draft acceptable means of compliance and guidance material to Part-ARO (draft EASA decision)**

p. 21-22

comment

43

comment by: *Luxembourg Air Ambulance***ENDORSEMENT BY ANOTHER STATE**

(a) Whenever the operator applies for an endorsement to operate to/from a public interest site in another state in accordance with CAT.POL.H.225, the competent authority of ~~that other state~~ the member state responsible for issuing the approval should only grant the endorsement once it is satisfied that:

(1) the conditions of CAT.POL.H.225(a)(1) through (5) can be met by the operator at those sites for which endorsement is requested; and  
 (2) the operations manual includes the procedures to comply with CAT.POL.H.225(b) for these sites for which endorsement is requested.

(b) The competent authority of the Member State responsible for issuing the approval should inform the competent authority of that other state

**Justification:** the application process shall be simplified for the operator. He should only have one point of contact and not deal with two separate competent authorities.

**AMC3 ARO.OPS.220 Approval of helicopter operations to or from Public Interest Sites DIRECTORY OF PUBLIC INTEREST SITES**

The authority should maintain a directory of all public interest sites that are subject to an approval or endorsement in its territory.

The authority shall make this directory available to the public (operators and other competent authorities)

**Justification:** especially for cross border HEMS operations it is of outmost importance that operators and other member states competent authorities do receive all relevant information.

**AMC4 ARO.OPS.220 Approval of helicopter operations to or from public interest sites**

The Directory of Public Interest Sites shall contain relevant information to enable the operator to fulfil the requirements of CAT.POL.H.225 (b)(C)

**Justification:** especially for cross border HEMS operations it is of outmost importance that operators and other member states competent authorities do receive all relevant information.

response

Not accepted  
 Please refer to topic 'Public interest sites'.



comment	<p>137 <span style="float: right;">comment by: <i>Luftfahrt-Bundesamt</i></span></p>
	<p>The LBA supports the clarification on the use of PIS i.a.w. Article 6.6 of the Cover Regulation, CAT.POL.H.225, ARO.OPS.220 and the new AMC3 ARO.OPS.220. However, AMC3 ARO.OPS.220 should be reconsidered in the light of the future Repository of information i.a.w. Article 74 of the New Basic Regulation 2018/1139.</p>
response	<p>Not accepted Article 74 of Regulation (EU) 2018/1139 defines what the repository of information includes. Please refer to topic 'Public interest sites'.</p>
comment	<p>213 <span style="float: right;">comment by: <i>DRF-Flugrettung</i></span></p> <p><b>AMC3 ARO.OPS.220</b> <b>The authority should maintain a directory of all public interest sites that are subject to an approval or an endorsement in its territory</b></p> <p>Harmonisation issue:</p> <p><b>Please change „authority“ to „competent authority</b></p>
response	<p>Not accepted Not needed. Please refer to topic 'Public interest sites'.</p>
comment	<p>319 <span style="float: right;">comment by: <i>NOLAS</i></span></p> <p><b>AMC3 ARO.OPS.220 Approval of helicopter operations to or from a public interest site</b> <b><u>Regulation</u></b></p> <p><i>DIRECTORY OF PUBLIC INTEREST SITES</i> <i>The authority should maintain a directory of all public interest sites that are subject to an approval or an endorsement in its territory.</i></p> <p><b><u>Concern</u></b></p> <p>While we are presently not operating to/from PIS, we know from other countries/operators that information regarding PIS have been very difficult to find (historically) for the operators making it challenging for the operators to develop the (good and safe) procedures for the site(s).</p> <p><b><u>Suggestion</u></b></p> <p>It should be added that the directory should be easily/readily available to all operators (also from other countries) and that it must include the non-operator/non-type specific information that is needed by the operator to develop their own site specific operational procedures.</p>
response	<p>Not accepted Please refer to topic 'Public interest sites'.</p>

comment	375	comment by: <i>European Cockpit Association</i>
	<p>Commented text:  <b>AMC3 ARO.OPS.220 Approval of helicopter operations to or from a public interest site</b>  <i>DIRECTORY OF PUBLIC INTEREST SITES</i>  <i>The authority should maintain a directory of all public interest sites that are subject to an approval or an endorsement in its territory.</i></p> <p>ECA's comment:            ECA is concerned that historically, information regarding PIS have been very difficult to find for the operators making it challenging for the operators to develop the (good and safe) procedures for the site(s).</p> <p>Suggestion:            It should be added that the directory should be easily/readily available to all operators (also from other countries) and that it must include the non-operator/non-type specific information that is needed by the operator to develop their own site specific operational procedures.</p>	
response	Not accepted Please refer to topic 'Public interest sites'.	

comment	463	comment by: <i>Civil Aviation Authority of Norway</i>
	<p>Comment to AMC2.ARO.OPS.220 (c):            Supported, however it should be evaluated if the terminology would benefit from applying similar terms to that used for HR SPO authorisations:            "competent authority of the operator", and            "competent authority of the place where the operation is conducted".</p>	
response	Noted Please refer to topic 'Public interest sites'.	

### 3. Proposed amendments and rationale in detail — 3.5. Draft regulation (draft EASA opinion) — Part-ARO

p. 22

comment	77	comment by: <i>UK CAA</i>
	<p><b>Page No:</b> 22</p> <p><b>Paragraph No:</b> 3.5, sub-paragraph 2</p> <p><b>Comment:</b> A small text change is recommended as proposed below.</p> <p><b>Justification:</b> Improved grammar</p> <p><b>Proposed Text:</b></p>	



	If the operator conversion training <del>doesn't</del> <b>does not</b> include training in the aircraft/FSTD,
response	Accepted

comment 233 comment by: FAA

3.5.1 (d)...Some of the conditions to contend with:

- What are the weather conditions?
- Is snow / sand present at the proposed landing site? (Possibility of a white / brown out condition could exist upon landing approach).
- Make sure the LZ is NOT in a confined area, if possible. Any aircraft has performance issues, and any additional weight (patient / wind / altitude) does stress performance.
- Make sure the LZ can accommodate the rotor system.
- First responders should mark off an acceptable LZ.
- First responders should meet with the operator on a regular basis, to ensure ALL have and understand the same training.
- While choosing an LZ, consideration should be exercised for landing approach to be clear of obstacles (Overhead wires, tree branches, etc. (Although helicopters can perform vertical take-offs, additional weight of the patient and / or any additional equipment may tax performance).
- Remember, the pilots view of the LZ is different from the ground personnel. To enhance the location of the LZ, patrol units should be placed in a square with search lights pointed straight up, as to identify the LZ from the pilots perspective, and make the LZ safer for both ground personnel and flight crew.
- Clear (White) strobes should not be energized around the LZ.
- Once on the ground, always make sure a flight crew member has you in sight.
- Ground crew members should wear eye protection, and operate without hats.
- Use a check list if possible. On a scene call, there is a lot of confusion, and communication is strained due to excess noise and the running helicopter.
- NEVER go to the rear of the aircraft.



	<ul style="list-style-type: none"> <li>• When approaching the aircraft, always follow the flight crew directions.</li> <li>• NEVER carry any objects above your head, or throw any object to any personnel.</li> <li>• If an object blows away during the loading process, <b>DO NOT</b> chase it. Let a flight crew member retrieve the article or do without.</li> <li>• <i>There is lots of information contained in the FAA's Advisory Circular listings.</i></li> </ul> <p><u>Maintain a high aviation safety level by reviewing the requirements related to HEMS flights by day or night, regarding equipment, training, minima, and operating/hospital site illumination.</u></p> <p><u>3.5.1.(b)...</u>Safety level is a paramount issue to the on-coming flight crew. Pilots should have a verbal tie-in prior to turning the aircraft over to shift relief, usually on the helipad, to discuss any anomalies during their shift. Hospital shifts vary from hospital to hospital, state to state. Along with any concerning comments, a tie-in book should be kept at the hospital (not on board) of any anomalies during their shift, to include equipment, whether hospital issued or operator issued.</p> <p><u>3.5.1.(d)...</u>If the aircraft is permanently based at a hospital, a list of serial numbered items, should be displayed on a status board, as to keep closer track of required items and training, medical due dates, annual inspection etc. By having it displayed, flight crews can keep closer watch on time sensitive items, as to possibly train together and stay current, without losing valuable down time....</p>
response	Noted Please refer to topic 'Other recommendations'.

comment	282 <span style="float: right;">comment by: <i>Stephanie Selim</i></span>  3.5.1 ORO.TC.110 (p22)  It would be appropriate to add "if applicable" after "familiarisation flights" since point ORO.TC.130 states that these familiarisation flights are not mandatory.
response	Not accepted Not needed. Please refer also to topic 'TCM training'.

comment	464 <span style="float: right;">comment by: <i>Civil Aviation Authority of Norway</i></span>  The proposed changes to ORO.TC.110 are supported.
response	Noted Thank you. Please refer also to topic 'TCM training'.



comment	538	comment by: <i>DHV e.V.</i>
	<p>AMC3 ARO.OPS.220 is added as follows:          AMC3 ARO.OPS.220 Approval of helicopter operations to or from a public interest site DIRECTORY OF PUBLIC INTEREST SITES The authority should maintain a directory of all public interest sites that are subject to an approval or an endorsement in its territory.</p> <p>DHV proposes to amend: " This authority should make the directory available to HEMS-operators and other competent authorities."</p>	
response	<p>Not accepted          Please refer to topic 'Public interest sites'.</p>	

**3. Proposed amendments and rationale in detail — 3.6. Draft acceptable means of compliance and guidance material to Part-ORO (draft EASA decision)**

p. 23

comment	13	comment by: <i>FOCA Helicopter Operations</i>
	<p><b>GM1 ORO.TC.105 Conditions for assignment to duties</b>  <i>(e) A class 2 or LAPL medical certificate issued in accordance with Commission Regulation (EU) No 1178/20117 meets these requirements.</i></p> <p><b>Additionally:</b>          TC engaged in night operations should be colour safe (accordning Part-MED, COMMISSION REGULATION (EU) No 1178/2011)</p>	
response	<p>Accepted          Please refer to topic 'TCM training'.</p>	
comment	78	comment by: <i>UK CAA</i>
	<p><b>Page No:</b> 23</p> <p><b>Paragraph No:</b> 3.6, sub-paragraph 2(e)</p> <p><b>Comment:</b> A revision to the text is recommended as proposed below.</p> <p><b>Justification:</b> Clarity and readability</p> <p><b>Proposed Text:</b></p> <p>(e) <b><i>If the technical crew member holds a</i></b> class 2 or LAPL medical certificate issued in accordance with Commission Regulation (EU) No 1178/20117, <b><i>then this would meet</i></b> <del>meets</del> these requirements.</p>	
response	<p>Partially accepted          Please refer to topic 'TCM training'.</p>	





comment	130	comment by: UKFSC
	We support this proposal. HTC can often be engaged in providing direct assistance to a pilot for terrain or obstacle clearance, and they should therefore have an appropriate level of assured fitness.	
response	Noted Thank you. Please refer also to topic 'TCM training'.	
comment	214	comment by: DRF-Luftrettung
	<p><b>GM1 ORO.GEN.130 (b) (j) (2) Changes, requiring prior approval (2) to/from a public interest site where performance class 1 criteria cannot be met;</b></p> <p>The present regulation states, that a HEMS Operator needs an approval according CAT.POL.H.225, if he intends to use the derogations for PIS. CAT.POL.H.225 (a) (6) is very clear, that the prior approval belongs to the "operation".</p> <p>Even though the new proposal does not change number (a)(6), in the GM1 the EASA wants to establish a prior approval for each PIS. Please remember, that nearly every PIS was established, because the size or the environment did not allow for PFC 1.</p> <p>Furthermore we think, that the new proposals are not harmonized. It is a new task of the competent authority, to establish a state directory and assess, if the PIS remains valid.</p> <p>Therefore, if the PIS is not in the directory, the operator cannot use it. If it is in the directory, there is no need for a prior approval of this PIS.</p> <p><b>We suggest to change the GM as follows: (j)(2) in accordance with CAT.POL.H.225</b></p>	
response	Partially accepted	
comment	283	comment by: Stephanie Selim
	3.6.1 GM1 ORO.GEN.130(b) (p23)	
	It should be specified that j) 4) is only valid for HEMS operations.	
response	Partially accepted Point (j)(4) is valid for HEMS operations under the NPA proposal, but also for SPO under the existing point SPO.OP.195. Please refer also to topic 'Oxygen 3'.	
comment	320	comment by: NOLAS
	<p><b>GM1 ORO.TC.105 Conditions for assignment to duties</b></p> <p>The addition of class 2 or LAPL medical certificate welcomed and relevant change / addition. It gives good guidance on how to meet the requirement at an acceptable level. The HEMS technical crew members are essential part of safe single-pilot HEMS operations and it is very important to ascertain their health.</p>	
response	Noted	

	Thank you	
comment	376	comment by: <i>European Cockpit Association</i>
	<p>Commented text:  <b>GM1 ORO.TC.105 Conditions for assignment to duties</b></p> <p>ECA's comment:          ECA agrees with the change. HEMS technical crew members are essential to the safety of single-pilot operations and thus it is important to ascertain their health. Proper guidance on how to meet requirements are necessary. The addition of class 2 or LAPL medical certificate as guidance is therefore a welcomed and relevant change / addition.</p>	
response	Noted Thank you	
comment	465	comment by: <i>Civil Aviation Authority of Norway</i>
	The proposed changes to GM1 ORO.GEN.130(b) is supported.	
response	Noted Thank you	
comment	466	comment by: <i>Civil Aviation Authority of Norway</i>
	The proposed change to GM1 ORO.TC.105 (e) is supported.	
response	Noted Thank you	
comment	519	comment by: <i>Bell Helicopter Textron Inc</i>
	This wording is a little different than the three options listed in section 2.3.2.4	
response	Noted	

### 3. Proposed amendments and rationale in detail — 3.7. Draft regulation (draft EASA opinion) — Part-CAT

p. 24-25

comment	44	comment by: <i>Luxembourg Air Ambulance</i>
	<p>(d) The information provided in (c) shall remain valid and any change to it shall be notified to the competent authority. When operations take place in another Member State, the operator approval issuing authority shall also notify the authority of that State.</p> <p><b>Justification:</b> to ease the process for the operator he should only have one focal point of contact which should be the approval issuing authority.</p>	



	<p><b>CAT.POL.H.420 Helicopter operations over a hostile environment located outside a congested area</b></p> <p>(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 the <del>that State the</del> <b>competent authority issuing the approval</b></p> <p><b>Justification:</b> to ease the process for the operator he should only have one focal point of contact which should be the approval issuing authority. The approval issuing authority shall inform the competent authority of the other state</p>
response	<p>Not accepted Please refer to topic 'Public interest sites'.</p>

comment	<p>79 <span style="float: right;">comment by: UK CAA</span></p> <p><b>Page No:</b> 25</p> <p><b>Paragraph No:</b> 3.7, sub-paragraph 3(b)(2)</p> <p><b>Comment:</b> The current regulation determines that the performance alleviation under CAT.POL.H.420 – PC3 over uncongested hostile environments - is not applicable to HEMS operations. The NPA proposes to delete this paragraph and so potentially allow PC3 for HEMS under any CA approved circumstances. There is no discussion or justification provided to support this change which is potentially a major reduction in safety for what is already a higher risk activity. It may be that due to the proposal to allow PC3 with Cat A helicopters above 10,000 feet density altitude for specific HEMS operations, a change here was thought appropriate. However, this may be better dealt with in SPA.HEMS.125.</p> <p>The UK CAA does not support the change as presented but would accept either the proposed text below which puts the amendment into context and provides constraint on its interpretation or a derogation provided in SPA.HEMS.125. The latter would probably be more appropriate as the HEMS Approval would constitute the approval necessary under CAT.POL.H.420 specifically for this type of operation.</p> <p><b>Justification:</b> Unsupported and unacceptable reduction in safety of operations although possibly introduced as a result of unintended consequences.</p> <p><b>Proposed Text:</b> If not changed in SPA.HEMS.125, amend as follows:</p> <p>(b) To obtain and maintain such approval, the operator shall:</p> <p>(1) only conduct these operations in the areas and under the conditions specified in the approval;</p>
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	<b>(2) not conduct these operations under a HEMS approval except in accordance with SPA.HEMS.125(a);</b>
response	Not accepted Please refer to topic 'Performance'.
comment	<b>131</b> <span style="float: right;">comment by: UKFSC</span> The phasing out of PIS is sensible. This measure needs to be properly enforced.
response	Noted
comment	<b>152</b> <span style="float: right;">comment by: Swedish Transport Agency, Civil Aviation Department (Transportstyrelsen, Luftfartsavdelningen)</span>  CAT.POL.H.420 o (b)(2) needs to be clarified or clearly refer to SPA.HEMS.125. Since the change is done in order to allow PC3 operations on high altitude it should be made clear that the operation is to be performed with CAT A helicopters. As soon as they are in lower altitudes the normal safety margins should be applied, i.e. PC1.
response	Noted Please refer to topic 'Performance'.
comment	<b>158</b> <span style="float: right;">comment by: Devon AA</span> CAT POL H.225 The safest approach would be the complete phasing out of PIS and we would wish to see this properly enforced
response	Noted Please refer to topic 'Public interest sites'.
comment	<b>167</b> <span style="float: right;">comment by: Elilombarda</span>  <b>CAT.POL.H.420 (b) (2)</b> (...) (b) (...) <del>(2) not conduct these operations under a HEMS approval</del>  (a) It is suggested not to delete the point but to add "unless approved under SPA.HEMS.125(a)" in order to definitely clarify that class 3 operations are allowed only above 10 000 ft and with helicopters approved in CAT A.
response	Not accepted Please refer to topic 'Performance'.
comment	<b>179</b> <span style="float: right;">comment by: ELILOMBARDA</span>

	<p><b>CAT.POL.H.420(b)(2)</b></p> <p>deleting the point (2) could be misunderstood to allow fly in HEMS with helicopters in performance 3 cat B over hostile enviroment in all situation except as request under the SPA.HEMS.125(a).</p> <p>It is suggested do not delete the point (2) and add " <b>unless approved under SPA.HEMS.125(a)</b>"</p>
response	<p>Not accepted Please refer to topic 'Performance'.</p>
comment	<p>191 <span style="float: right;">comment by: <i>Swiss Air-Ambulance Rega</i></span></p> <p>CAT.POL.H.420(b)(2)</p> <p>The intention to enable HEMS operations by CAT-A helicopters above 10,000 ft DA is understood. Since this is a rare performance exemption, the general prohibition of HEMS operations over a hostile environment located outside a congested area without a safe-forced landing capability should be kept and a reference to SPA.HEMS.125(a) included instead of deleting the paragraph.</p> <p>"To obtain and maintain such approval, the operator shall: (1) [...]; (2) <u>not conduct these operations under a HEMS approval, with the exemption under point SPA.HEMS.125(a) for HEMS flights above 10 000 ft density altitude with helicopters certified as Category A or equivalent; [...]</u>"</p>
response	<p>Not accepted Please refer to topic 'Performance'.</p>
comment	<p>232 <span style="float: right;">comment by: <i>FAA</i></span></p> <p><u>Foster efficient and proportional rules, more precisely regarding: HEMS requirements for high altitudes;</u></p> <p>3.7.1 (3)...Most operations do not include high / hot training. As professional 135 pilots, a pilot is expected to have such training and knowledge. Unfortunately, most pilots are trained as "Flat Landers". Additionally, pilots who are "Relief Pilots" or "Fill-ins" are expected to poses the knowledge when hired. High / Hot scenarios should be demonstrated on initial check ride, as well as annual recurrent. Power checks should be performed PRIOR to landing at any altitude sites, or unfamiliar landing zones. Upon dispatch, like weather issues, a pilot doesn't have all required information to complete the mission. Experience and knowledge will help them through the mission safely. Some HEMS operations are based at or near sea level, yet are surrounded by mountains. Hence, working in mountain terrain is a challenge at best. Upon accepting a mission, pilots need to operate within Aircraft Flight Manual, which at times, is not an option. Taking in all considerations, (Fuel load, patient weight (if known), and current and forecast weather. Aircraft are on the hospital pads "Ready to go", so fuel load should be monitored. Flight</p>



	<p>crew weight (as crews change), Current weather conditions, as we come to summer’s end, conditions will change quickly.                  From a maintenance stand point, pilots should NEVER be ashamed to admit to any readings outside of the aircraft limitations, NO MATTER how small the pilot may think it is. (Especially, an over temp or over torque), WRITE IT UP! The on-coming pilot will appreciate it. If you had an aborted landing attempt due to what the pilot described as LTE. Have maintenance look the ship over. Exceptional forces are NOT distributed evenly. WRITE IT UP!</p> <p><u>A new HEMS concept to cover mountain operations and rescue operations (other than search and rescue (SAR) operations);</u></p> <p>3.7.1 (3)...As additional safety issues and suggestions, prior to landing, all on board should be ready to assist in the landing operation. Depending on cabin configuration, the door person, if possible, should be viewing the tail rotor and area below the descending aircraft. Some Landing Zones (LZ’s) require vertical Landings. Nighttime operations are especially challenging due to low / no light conditions. Artificial lights should not be pointed at the aircraft, but pointed straight up or away from the pilot’s vision, as to illuminate his LZ, not the aircraft.</p> <p>3.7.1 (3)...While enroute, especially at night, when possible, flight should be above mountain peaks, as not to experience CFIT, or a wire strike. Most wires are not marked. Cross over the tower structure, when possible.                  Communication with local first responders is critical. Weather it is setting up LZ, or movements around the aircraft.                  When first responders arrive at a scene call, they should be trained “How to set up an LZ”.</p> <p><u>Flights to / from public interest sites (PISs) Maintain a high aviation safety level by reviewing the requirements related to located in congested areas; and</u></p> <p>3.7.2 (d)...                  When flights are conducted over congested areas / PIS, there is usually a curiosity factor involved. Extra caution should be used as there are numerous issues to contend with, to include uninformed civilian personnel milling about, lighting issues, wires, laser events, drone operation, spot lights, etc. If you’re operating on NVG, it can be confusing. when an operation is on-going, communication with home base and ground crew is essential. It is very helpful as to readiness of the LZ and personnel.</p>
response	<p>Noted                  Please refer to topic ‘Other recommendations’.</p>
comment	<p>259 <span style="float: right;">comment by: <i>Babcock Mission Critical Services Limited</i></span></p> <p><b>Issue</b>                  ‘The current regulation determines that the performance alleviation under CAT.POL.H.420 – PC3 over non-congested hostile environments - is not applicable to</p>



HEMS operations. The NPA proposes to delete this paragraph and so potentially allow PC3 for HEMS under any CA approved circumstances.

**Why?**

There is no discussion or justification provided to support this change which is potentially a major reduction in safety for what is already a higher risk activity. It may be that due to the proposal to allow PC3 with Cat A helicopters above 10,000 feet density altitude for specific HEMS operations, a change here was thought appropriate. However, this may be better dealt with in SPA.HEMS.125. In common with the UK CAA, Babcock does not support the change as presented but would accept either the proposed text below which puts the amendment into context and provides constraint on its interpretation or a derogation provided in SPA.HEMS.125. The latter would probably be more appropriate as the HEMS Approval would constitute the approval necessary under CAT.POL.H.420 specifically for this type of operation.

**Suggested alternative:**

If not changed in SPA.HEMS.125, amend CAT.POL.H.420 as follows: "(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 except in accordance with SPA.HEMS.125(a);"

response Not accepted  
Please refer to topic 'Performance'.

comment 284 comment by: *Stephanie Selim*

3.7.2 CAT.POL.H.225 (p24)

If article 6.6 is amended, CAT.POL.H.225 should be extended to aerology issues to take into account SIPs where turbulent conditions do not allow CP 1 operations. It is therefore appropriate to add in a) 2) "or the aerology" after "the size".

response Not accepted  
Please refer to topic 'Public interest sites'.

comment 308 comment by: *tim saueressig*

Why is the MOPSC restricted to 6? Why 6 and not 5 or 7?

response Noted  
Please refer to topic 'Public interest sites' and 'Oxygen 1'.

comment 337 comment by: *ADAC Luftrettung gGmbH*

3.7.2. CAT.POL.H.225 (a) Page 25



	add "[...conditions are met]. Operations in performance class 1 remain unaffected." for clarification.	
response	Not accepted Not needed. Please refer to topic 'Public interest sites'.	
comment	364	comment by: <i>tim saueressig</i>
	CAT.POL.H.225 Draft: Why is PIS restricted to a MOPSC of 6? Why not 5 or 7?	
response	Noted Please refer to topic 'Public interest sites' and 'Oxygen 1'.	
comment	467	comment by: <i>Civil Aviation Authority of Norway</i>
	The proposed change to CAT.POL.H.225 is supported.	
response	Noted Thank you	
comment	468	comment by: <i>Civil Aviation Authority of Norway</i>
	Comment to CAT.POL.H.420:	
	CAA Norway strongly opposes to delete the text in CAT.POL.H.420(b)(2) "not conduct these operations under a HEMS approval;". This might invalidate an important aspect of what has been achieved with the HEMS regulation, and may open it to the inferior service of single engine HEMS. And there is no discussion or justification in the NPA of the need to and consequences of completely removing this limitation.	
	If it is decided that there is a need to alleviate the performance requirements at high altitudes, which may very well be the case, then this should be addressed specifically in SPA.HEMS.125(a). This would protect the majority of HEMS from the temptation to revert to single engine operations.	
	Proposal: CAT.POL.H.420(b)(2) should remain.	
	Alternatively: (b)(2) "not conduct these operations under a HEMS approval <b><u>unless operating according to SPA.HEMS.125(a)</u></b> ;	
response	Not accepted Please refer to topic 'Performance'.	
comment	514	comment by: <i>EHAC</i>



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;~~

While it is understood to allow for CAT A helicopters to perform HEMS above 10,000ft DA. As this is a rare performance exception the general prohibition to perform HEMS operations above a hostile environment located outside congested areas without a safe forced landing capability should be kept.

Suggestion to change to read:

(2) not conduct these operations under a HEMS approval, with the exception of SPA.HEMS.125 (a) for HEMS flights above 10,000ft DA with helicopters certified in Category A or equivalent

response

Not accepted  
Please refer to topic 'Performance'.

comment

529

comment by: *DHV e.V.*

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~~ conditions are met:

(1) the site was established as a public interest site ~~the PIS was in use~~ before 1 July 2002;; or the site was established as a public interest site before 28 October 2014 and a derogation under Article 6.6 of this Regulation had been notified ~~to the Commission and the Agency;~~

See comment No 527

response

Not accepted  
Please refer to topic 'Public interest sites'.

**3. Proposed amendments and rationale in detail — 3.8. Draft acceptable means of compliance and guidance material to Part-CAT (draft EASA decision)**

p. 26-28

comment

80

comment by: *UK CAA*



response	<p><b>Page No:</b> 26</p> <p><b>Paragraph No:</b> 3.8, sub-paragraph 1(a)</p> <p><b>Comment:</b> A small text change is proposed below to improve readability.</p> <p><b>Justification:</b> Grammar</p> <p><b>Proposed Text:</b></p> <p>(a) 9.3 km (5 NM) to be increased to 10 NM if the navigational accuracy cannot be met <del>in</del> <b>for</b> 95 % of the total flight time; or</p>
comment	<p>81 <span style="float: right;">comment by: UK CAA</span></p> <p><b>Page No:</b> 26</p> <p><b>Paragraph No:</b> 3.8, sub-paragraph 2(b) &amp; (c)</p> <p><b>Comment:</b> In sub-paragraph (b), following the reference to SERA, the correct terminology should be “as authorised by the competent authority” not ‘approved by’. This is in accordance with SERA.5005(c)(5).</p> <p>We believe sub-paragraph (c) is superfluous here under CAT as the conditions for HEMS should be contained in the SPA.HEMS. We recommend sub-paragraph (c) is deleted and the sentence underneath it is amended as shown below.</p> <p><b>Justification:</b> Clarity and context.</p> <p><b>Proposed Text:</b></p> <p><b>GM1 CAT.POL.H.215(a)(3)</b> RELEVANT TERRAIN AND OBSTACLES IN VFR</p> <p>All terrain and obstacles along the route within the following distance on either side of the intended track should be considered:</p> <p>(a) for day VFR, the distances specified in SERA.5005(f);</p> <p>(b) for night VFR, the distances specified in SERA.5005(c), or as <del>approved</del> <b>authorised</b> by the competent authority;</p> <p><del>(c) for night VFR in HEMS, the distances specified in SPA.HEMS.120(d).</del></p> <p><del>The helicopter speed should be reduced accordingly.</del></p> <p><b><i>The helicopter should be manoeuvred at a speed that will give adequate opportunity to observe any obstacles in time to avoid a collision.</i></b></p>
response	<p>Partially accepted</p> <p>Please refer to topic ‘VFR minima’.</p>
comment	<p>82 <span style="float: right;">comment by: UK CAA</span></p>

	<p><b>Page No:</b> 28</p> <p><b>Paragraph No:</b> 3.8, sub-paragraph 3(d)(6)(i)</p> <p><b>Comment:</b> An amendment to the text is recommended as proposed below, for readability and correctness.</p> <p><b>Justification:</b> Clarity</p> <p><b>Proposed Text:</b></p> <p>(i) The <del>required</del> performance level of 8 % climb gradient in the first segment required by point CAT.POL.H.225(a)(5) reflects ICAO Annex 14 Volume II in 'Table 4-3 'Dimensions and slopes of obstacle limitations surfaces' for performance class 2. It was established as a means of mitigating performance issues. <del>This requirement is retained as it</del> <b>and</b> defines a proportionate mass penalty at such sites, thereby applying an additional performance margin to such operations <b>in the interests of safety</b>.</p>
response	Partially accepted
comment	<p>83 <span style="float: right;">comment by: UK CAA</span></p> <p><b>Page No:</b> 28</p> <p><b>Paragraph No:</b> 3.8, sub-paragraph 4(c)</p> <p><b>Comment:</b> A text change is proposed below for correctness</p> <p><b>Justification:</b> Grammar</p> <p><b>Proposed Text:</b></p> <p>(c) The oxygen-dispensing unit should be approved in accordance with Commission Regulation (EU) No 748/2012 and may consist <del>in</del> <b>of</b> a nasal oxygen cannula.</p>
response	Accepted
comment	<p>166 <span style="float: right;">comment by: Eilombarda</span></p> <p>GM1 CAT.POL.H.215(a)(3) (...) (c) for night VFR in HEMS, the distances specified in SPA.HEMS.120(d)</p> <p>The point (c) should read: "for <u>DAY AND</u> night VFR in HEMS, the distances specified in SPA.HEMS.120(d)".</p> <p>The point should refer to "AMC1 SPA.HEMS.120(a) - HEMS VFR MINIMA: DISTANCE TO OBSTACLES" Point a) and b).</p>



response	Partially accepted Please refer to topic 'VFR minima'.
comment	181 <span style="float: right;">comment by: ELILOMBARDA</span>  <b>GM1. CAT.H.215(a)(3) point (c)</b>  are missed the distances for DAY VFR HEMS flight.  The point should be: <b>for day and night VFR HEMS, the distances specified in AMC1 SPA.HEMS.120(a) HEMS VFR MINIMA: DISTANCE TO OBSTACLES point a) and b)</b>
response	Partially accepted Please refer to topic 'VFR minima'.
comment	215 <span style="float: right;">comment by: DRF-Luftrettung</span>  <b>GM1 CAT.POL.H.215(a)(3) (c) for night VFR in HEMS, the distances specified in SPA.HEMS.120(d).</b>  There is no SPA.HEMS.120(d) neither in the NPA nor in the existing Regulation  <b>Please specify the correct reference</b>
response	Partially accepted Please refer to topic 'VFR minima'.
comment	244 ❖ <span style="float: right;">comment by: Luftfahrt-Bundesamt</span>  <u>Page 11 (Chapter 2.3.1) and Page 28 (Chapter 3.8):</u> The reference to Annex 14 Volume II is not correct; it should be ' <i>Table 4-1 Dimensions and slopes of obstacle limitation surfaces for all visual FATOs</i> ' instead of ' <i>Table 4-3 [...]'</i> '.
response	Partially accepted
comment	285 <span style="float: right;">comment by: Stephanie Selim</span>  3.8.2 GM1 CAT.POL.H.215(a)(3) (c) (p26)  There is no SPA.HEMS 120(d).
response	Accepted
comment	286 <span style="float: right;">comment by: Stephanie Selim</span>  3.8.4 AMC2 CAT.IDE.H.240 (c) (p28)  Are there any TSOs or certification requirements for such systems? Not to DGAC knowledge. There are approvals for the installation of the equipment, but not approvals for the equipment itself. So, if the intention was to write that it is the



response	installation of the equipment that must be approved, it is appropriate to add "installation/fifting" after the word "unit". If this is not the case and if there is no approved system, c) should be removed.
response	Noted Please refer to topic 'Oxygen 2'.
comment	321 <span style="float: right;">comment by: <i>NOLAS</i></span> <b>AMC1 CAT.POL.H.215(a)(1) and (a)(2)</b> We fully agree with this relevant change / addition.
response	Noted Thank you
comment	322 <span style="float: right;">comment by: <i>NOLAS</i></span> <b>GM1 CAT.POL.H.215(a)(3)</b> A relevant change / addition, especially the comment 'SERA.5005(c), or as approved by the competent authority;' which can be quite necessary in mountainous terrain.
response	Noted Thank you
comment	365 <span style="float: right;">comment by: <i>tim saueressig</i></span> GM1 CAT.POL.H.215(a)(3) what exactly do you want to state with that? What means obstacle should be considered? What will be the consequences of an obstacle within the 8km radius?
response	Noted Please refer to topic 'VFR minima'.
comment	413 <span style="float: right;">comment by: <i>FNAM/SNEH</i></span> <b>GM1 CAT.POL.H.225</b> HEMS operations are deeply linked with national health, security and safety. HEMS operations depend on the organization of the French healthcare system (the permanence and continuity of care services is a public service & a sovereign prerogative), with groupings of medical equipment and skills. HEMS in France is both operated by private operators and the State. State may charter private operators to operate HEMS operations on its behalf. Current French regulation thus allows, by sovereign decision of the State, to grant derogation for HEMS operations as far as national health, security or safety is involved. FNAM and SNEH totally disagree with the deadline (31.7.2022) for the possibility to conduct operations to/from a public interest site in derogation to CAT.POL.H.225. It should be possible, in the case of PIS use, for the authority to issue derogations for these sites and ensure continuity of HEMS operations as permitted with the current regulation.
response	Noted Please refer to topic 'Public interest sites'.

comment	<p>425</p> <p style="text-align: right;">comment by: SAF</p> <p>GM1 CAT.POL.H.225</p> <p>HEMS operations are deeply linked with national health, security and safety. HEMS operations depend on the organization of the French healthcare system (the permanence and continuity of care services is a public service &amp; a sovereign prerogative), with groupings of medical equipment and skills. HEMS in France is both operated by private operators and the State. State may charter private operators to operate HEMS operations on its behalf. Current French regulation thus allows, by sovereign decision of the State, to grant derogation for HEMS operations as far as national health, security or safety is involved. SAF totally disagrees with the deadline (31.7.2022) for the possibility to conduct operations to/from a public interest site in derogation to CAT.POL.H.225. It should be possible, in the case of PIS use, for the authority to issue derogations for these sites and ensure continuity of HEMS operations as permitted with the current regulation.</p>
response	<p>Noted</p> <p>Please refer to topic 'Public interest sites'.</p>
comment	<p>437</p> <p style="text-align: right;">comment by: MBH SAMU</p> <p>GM1 CAT.POL.H.225</p> <p>HEMS operations are deeply linked with national health, security and safety. HEMS operations depend on the organization of the French healthcare system (the permanence and continuity of care services is a public service &amp; a sovereign prerogative), with groupings of medical equipment and skills. HEMS in France is both operated by private operators and the State. State may charter private operators to operate HEMS operations on its behalf. Current French regulation thus allows, by sovereign decision of the State, to grant derogation for HEMS operations as far as national health, security or safety is involved. HBG totally disagrees with the deadline (31.7.2022) for the possibility to conduct operations to/from a public interest site in derogation to CAT.POL.H.225. It should be possible, in the case of PIS use, for the authority to issue derogations for these sites and ensure continuity of HEMS operations as permitted with the current regulation.</p>
response	<p>Noted</p> <p>Please refer to topic 'Public interest sites'.</p>
comment	<p>449</p> <p style="text-align: right;">comment by: Oya Vendée Hélicoptères</p> <p>GM1 CAT.POL.H.225</p> <p>HEMS operations are deeply linked with national health, security and safety. HEMS operations depend on the organization of the French healthcare system (the permanence and continuity of care services is a public service &amp; a sovereign prerogative), with groupings of medical equipment and skills. HEMS in France is both operated by private operators and the State. State may charter private operators to operate HEMS operations on its behalf. Current French regulation thus allows, by sovereign decision of the State, to grant derogation for HEMS operations as far as national health, security or safety is involved. OYA totally disagrees with the deadline (31.7.2022) for the possibility to conduct operations to/from a public interest site in</p>

	derogation to CAT.POL.H.225. It should be possible, in the case of PIS use, for the authority to issue derogations for these sites and ensure continuity of HEMS operations as permitted with the current regulation.
response	Noted Please refer to topic 'Public interest sites'.
comment	469 comment by: <i>Civil Aviation Authority of Norway</i> The proposed changes under pt. 3.8 are supported.
response	Noted Thank you
comment	520 comment by: <i>Bell Helicopter Textron Inc</i> How is navigational accuracy measured?
response	Noted Navigation accuracy is one element of PBN capability.

<b>3. Proposed amendments and rationale in detail — 3.9. Draft regulation (draft EASA opinion) — Part-SPA</b>	p. 29-34
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comment	9 comment by: <i>AIRBUS HELICOPTERS</i> <u>SPA.HEMS.105 (b)(4):</u>  It should be written: ' <b>HEMS</b> HEC technical crew members shall be equipped, trained and briefed;'  <u>Reason:</u> consistency with the new definition of 'technical crew members' which only refer to 'HEMS' or to 'HEMS HEC'
response	Partially accepted Please refer to topic 'HEMS HEC'.
comment	10 comment by: <i>AIRBUS HELICOPTERS</i> <u>SPA.HEMS.110 (c):</u>  Correct wording should be 'complex <b>motor-powered</b> helicopters'.
response	Partially accepted The current point CAT.IDE.H.240 refers to complex non-pressurised helicopters and to other than complex non-pressurised helicopters. Point SPA.HEMS.110(c) should be consistent with it.
comment	11 comment by: <i>AIRBUS HELICOPTERS</i>

	<p><u>SPA.HEMS.105 (b):</u></p> <p>It is proposed to add the following requirement:</p> <p><b>'(b)(7) except for operations at a HEMS operating site, cargo sling operations shall be capable of sustaining a critical engine failure with the remaining engine(s) at the appropriate power setting without hazard to the suspended person(s)/cargo, third parties or property.'</b></p> <p><u>Rationale:</u> § (a) requires HEMS HEC operations with the helicopter hoist to be conducted under SPA.HHO rules. Then SPA.HHO.125 states: <i>Except for HHO at a HEMS operating site, HHO shall be capable of sustaining a critical engine failure with the remaining engine(s) at the appropriate power setting without hazard to the suspended person(s)/cargo, third parties or property.'</i> This is to say that engine failure consequences do not need to be considered when conducting HEMS HHO at a HEMS operating site. The same alleviation should be granted when conducting HEMS cargo sling operations at a HEMS operating site.</p>
response	<p>Not accepted</p> <p>Not needed. Please refer to the definition of 'HEMS operating site'.</p>
comment	<p>14 <span style="float: right;">comment by: FOCA Helicopter Operations</span></p> <p><b>SPA.HEMS.110 Equipment requirements for HEMS operations</b>  <i>(d) By way of derogation from CAT.OP.MPA.285 and CAT.IDE.H.240, short excursions above 13 000 ft without using supplemental oxygen may be undertaken, subject to prior approval of the competent authority based on all of the following conditions:</i></p> <p><b>Additionally:</b>  The operator presents scientific evidence, when applying for an exemption.</p>
response	<p>Partially accepted</p> <p>Please refer to topic 'Oxygen 3'.</p>
comment	<p>25 <span style="float: right;">comment by: FOCA Helicopter Operations</span></p> <p>Oxygen requirements: See comment page 23</p>
response	<p>Noted</p>
comment	<p>26 <span style="float: right;">comment by: FOCA Helicopter Operations</span></p> <p>(2) (iii): There was a reason requiring two pilots or one pilot and a HEMS technical crew member as mitigation. There is no mitigation visible for the option to fly with one pilot.</p>
response	<p>Accepted</p> <p>Please refer to topic 'Crew composition'.</p>
comment	<p>27 <span style="float: right;">comment by: FOCA Helicopter Operations</span></p>



response	<p>It is unclear what a HEMS tactical risk assessment is.</p> <p>Partially accepted Please refer to topic 'HEMS risk assessments'.</p>
comment	<p>32 <span style="float: right;">comment by: AIRBUS HELICOPTERS</span></p> <p><u>SPA.HEMS.125 (a):</u></p> <p>In order to allow current practices to continue under EASA rules, it is proposed to transfer the 'Category A certification' requirement as an AMC. This will allow States to define and use AltMoCs (Alternate Means of Compliance) based on the use of single-engined helicopters for HEMS missions under SPA.HEMS.125(a).</p> <p>The proposed modifications are:</p> <p><b><u>1) to modify SPA.HEMS.125(a) as follows:</u></b>  SPA.HEMS.125(a) Performance class 3 operations over a hostile environment shall only be conducted when a HEMS operating site used for take-off, landing or HEMS HEC operations is located above 10000 ft density altitude <del>and with a helicopter certified as Category A or equivalent as determined by the Agency.</del></p> <p><b><u>2) to create a new 'AMC to SPA.HEMS.125 (a)':</u></b>  <b><i>PERFORMANCE CLASS 3 HEMS OPERATIONS OVER A HOSTILE ENVIRONMENT</i></b>  <b><i>Operations in accordance with SPA.HEMS.125 (a) should be made with a helicopter certified as Category A or equivalent as determined by the Agency.</i></b></p> <p><u>Rationale:</u>  The possibility for an operator to use either a twin engined or a single engined helicopter should exist under EASA rules. As a matter of fact, several States (e.g. Switzerland) already authorize today high altitude rescue operations with single-engine helicopters under their national regulations, without negative impact on safety. Indeed, when operating in a hot &amp; high environment (e.g. above 10 000 ft, ISA + 20), a single engined helicopter may have better performances than some twin engined helicopters. Furthermore, considering the fact that the critical phase of a SAR / HEMS mission occurs at the rescue location, during landing / take off / hovering phases, when operating in Performance C3 both twin-engined and single-engined helicopters will have to perform a forced landing in case of one engine failure, so that a single engined helicopter could be as safe as a twin engine (if not safer). Last but not least, the argument that twin engined helicopters are better equipped than single engined helicopters, with safety systems such as HTAWS, autopilot, flight director, etc..., is not always true (e.g. Helionix on Light Helicopters will provide HTWAS, SVS, CVFDR, 3 axis autopilot, etc...). The proposal to transfer the 'Category A certification' requirement into a new AMC will allow States to define 'AltMOCs' based on single-engined helicopters to comply with SPA.HEMS.125(a) in accordance with their current practices.</p>
response	<p>Partially accepted Please refer to topic 'Performance'.</p>



comment	38	comment by: <i>Air-Glaciers (pf)</i>
	e) 5 years to short / should be 10 years to allow resources and planification	
response	Noted Please refer to topic 'Autopilots'.	
comment	45	comment by: <i>Luxembourg Air Ambulance</i>
	SPA.HEMS.110 (e)	
	<b>Comment:</b> there is no such requirement for normal CAT Single Pilot at night beside HEMS. Additionally HEMS operation is not a single pilot operation but a Pilot + TCHEMS operation.	
	As long as the TCHEMS is occupying the Co-pilot seat no stability augmentation system or autopilot should be required for HEMS night operation	
	For small HEMS operators like Luxemborg Air Ambulance the rquirement would mean to change 75% of the fleet resulting in a required investment of 24 Million Euros	
response	Noted Please refer to topic 'Autopilots'.	
comment	53	comment by: <i>CAA-NL</i>
	SPA.HEMS.130(d)(1)(ii). We think this point can be deleted, as Table 1 of SPA.HEMS.120 will be deleted with this proposal and replaced with a reference to the airspace requirements from SERA.5005. <del>(ii) In the cases described in (i), the operational minima shall be as defined by the applicable airspace requirements; the HEMS operating minima contained in Table 1 of SPA.HEMS.120 shall not be used.</del>	
response	Accepted Please refer to topic 'VFR minima'.	
comment	63	comment by: <i>Aersud Elicotteri</i>
	SPA.HEMS.110 (d) We suggest to clarify that this approval is grant to the operator based on the experience of the operator and of the crew and that is general and not needed for any mission.	
response	Not accepted Not needed. Please refer to topic 'Oxygen 3'.	
comment	64	comment by: <i>Aersud Elicotteri</i>
	SPA.HEMS.130 (d) (1)(i)(A) we suggest to specify as follows:	



response	<p>"...In such case, the HEMS technical crew member may be left to give assistance to ill or injured persons <u>only if his support is directly required by the medical passengers</u>, while the commander undertakes this flight.</p> <p>Partially accepted Please refer to topic 'Crew composition'.</p>
comment	<p>66 <span style="float: right;">comment by: <i>Aersud Elicotteri</i></span></p> <p>Please add at the end of SPA.HEMS.130 (d) (1)(i)(D) "...only after an intermediate landing in order to reconfigure the helicopter for the HEMS HEC operation, if needed."</p> <p>It is not acceptable that the pilot is the only one in the cockpit directly from the Hems base to the HEMS landing site.</p> <p>This is needed to avoid that a pilot fly directly from the base to the operational site, alone in the cockpit.</p> <p>If it's necessary that the HCM moves in the cabin in order to conduct HEMS HEC operation, this must be done only after the helicopter reach the operating site and surveyed it.</p> <p>Also after the HEMS HEC operation the HCM should be in the cockpit supporting the pilot.</p>
response	<p>Accepted Please refer to topic 'HEMS HEC'.</p>
comment	<p>84 <span style="float: right;">comment by: <i>UK CAA</i></span></p> <p><b>Page No:</b> 29</p> <p><b>Paragraph No:</b> 3.9, sub-paragraph 2(b)(5)</p> <p><b>Comment:</b> We recommend that the word "and" should be added at the end of sub-paragraph (5), as shown below, as this list is inclusive.</p> <p><b>Justification:</b> Completeness and editorial</p> <p><b>Proposed Text:</b></p> <p>(5) HEMS HEC specific SOPs shall be developed according to a risk assessment conducted by the operator; <b>and</b></p>
response	<p>Not accepted Not needed. A list introduced by 'all the following' can only be an inclusive list.</p>
comment	<p>85 <span style="float: right;">comment by: <i>UK CAA</i></span></p> <p><b>Page No:</b> 29</p> <p><b>Paragraph No:</b> 3.9, sub-paragraph 3(c)</p>



response	<p><b>Comment:</b> In the discussion of Option 3 on page 14, the intention was to align oxygen requirements for a MOPSC of <b>6</b> or less. In the draft proposal this is indicated as a MOPSC of <b>9</b> or less. It is not clear or substantiated which is intended but the alleviation should only be applied if the number of people onboard and affected is controlled and reduced. In the interests of safety and personal exposure, it is recommended that the MOPSC for complex helicopters involved in high altitude HEMS operations and not using the CAT.IDE.H.240 oxygen requirements is restricted to 6.</p> <p>It is recommended that the derogation text should be amended as necessary once the intended MOPSC has been determined.</p> <p><b>Justification:</b> The intended alleviation for oxygen equipment and use in complex helicopters conducting high altitude HEMS operations is inconsistent with the discussion and explanation. A clearly argued and justified proposal should be provided.</p>
	<p>Accepted Please refer to topic 'Oxygen 1'.</p>
comment	<p>86 <span style="float: right;">comment by: UK CAA</span></p> <p><b>Page No:</b> 30</p> <p><b>Paragraph No:</b> 3.9, sub-paragraph 3(d)(9) &amp; (10)</p> <p><b>Comment:</b> The hypoxia training and medical status is relevant not only to pilots but also to the HEMS technical crew member who is part of the crew when carried and necessary for single-pilot operations. We recommend that sub-paragraphs (9) &amp; (10) are amended to reflect this. Additionally the word 'and' is added at the end of sub-paragraph (9).</p> <p><b>Justification:</b> Editorial and relevance of safety training for other crew members.</p> <p><b>Proposed Text:</b></p> <p>(9) hypoxia training for all pilots <b>and HEMS technical crew members</b> involved; <b>and</b> (10) the absence of a medical condition that could lead to hypoxia, for the pilots <b>and HEMS technical crew members</b> involved.</p>
response	<p>Partially accepted Please refer to topic 'Oxygen 3'.</p>
comment	<p>87 <span style="float: right;">comment by: UK CAA</span></p> <p><b>Page No:</b> 30</p> <p><b>Paragraph No:</b> 3.9, sub-paragraph 3(f)</p>



response	<p><b>Comment:</b> The additional IFR instruments to be required for HEMS by day are agreed but the Vertical Speed indication mentioned under CAT.IDE.H.130(a)(4) for IFR is already required under CAT.IDE.H.125(a)(1)(v) so can be deleted.</p> <p><b>Justification:</b> Relevance.</p> <p><b>Proposed Text:</b></p> <p>(f) For HEMS operations by day, the helicopter shall be equipped with the flight instruments required under CAT.IDE.H.130(a)(4), (a)(6) and (a)(7).</p>
Accepted	
comment	<p>88 <span style="float: right;">comment by: UK CAA</span></p> <p><b>Page No:</b> 30</p> <p><b>Paragraph No:</b> 3.9, sub-paragraph 4(a)</p> <p><b>Comment:</b> The proposal has moved the HEMS Operating Minima, previously listed under Table 1, from the rule to AMC. The revised paragraph (a) now states that:</p> <p><i>(a) HEMS flights operated under VFR in <del>performance class 1 and 2</del> shall comply with the HEMS specific <del>the weather minima in Table 1</del> for dispatch and en-route phase of the HEMS flight.</i></p> <p>The main problem now is that there are no longer any “HEMS specific weather minima” to comply with, only those proposed in the AMC. This is not a correct concept and the operating minima should be reinstated back in the rule. These are fundamental safety barriers and are already lower than standard CAT requirements so should be properly regulated.</p> <p>We believe the proposal should be withdrawn and the construct returned to the current form, albeit the detail of the minima may be amended as intended.</p> <p>Additionally, there is no clear indication as to what types of airspace these minima are acceptable for but it is expected that only Class F or G would be appropriate. This should be made clear in the regulation.</p> <p><b>Justification:</b> Inappropriate and disconnected requirements that must be elevated back to the regulatory level. An intention to use a form of performance basis for this rule is inappropriate here.</p>
response	<p>Not accepted Please refer to topic ‘VFR minima’.</p>
comment	<p>89 <span style="float: right;">comment by: UK CAA</span></p> <p><b>Page No:</b> 31</p>



	<p><b>Paragraph No:</b> 3.9, sub-paragraph 5(a) &amp; (c)</p> <p><b>Comment:</b> For sub-paragraph (a) to align with CAT.OP.MPA.181 (current), the destination alternate requirements should include “and navigating by means other than by reference to visual landmarks.”</p> <p>Sub-paragraph (c), should be amended to include the word “and” at the end as this list is inclusive.</p> <p><b>Justification:</b> Alignment of regulations</p> <p><b>Proposed Text:</b></p> <p>(a) the flight is operated under IFR <b><i>or when flying under VFR and navigating by means other than by reference to visual landmarks;</i></b></p> <p>(c) two published instrument approaches with independent navigation aids are available at the aerodrome of intended landing; <b><i>and</i></b></p>
response	<p>Noted Please refer to topic ‘Destination alternates’.</p>
comment	<p>90 <span style="float: right;">comment by: UK CAA</span></p> <p><b>Page No:</b> 31</p> <p><b>Paragraph No:</b> 3.9, sub-paragraph 6(a)</p> <p><b>Comment:</b> Further to the UK CAA comments made about the changes to CAT.POL.H.420 on Page 25, paragraph 3.7, sub-paragraph (b)(2), it is recommended that the text of SPA.HEMS.125(a) be amended to provide for PC3 operations over a hostile environment above 10,000 ft with Cat A helicopters. At sub-paragraph (b) a derogation against CAT.POL.H.400(d)(2) is already proposed and sets a suitable precedent. By introducing a derogation here, the HEMS approval will in effect provide the necessary approval otherwise required under CAT.POL.H.420.</p> <p><b>Justification:</b> Placing a derogation in this section provides the necessary control on the alleviated performance requirements in an appropriate context.</p> <p><b>Proposed Text:</b> In preference to any change at CAT.POL.H.420, amend proposed change here as shown:</p> <p>(a) <b><i>By way of derogation from CAT.POL.H.420(b)(2),</i></b> Performance class 3 operations over a hostile environment shall only be conducted when a HEMS operating site used for take-off, landing or HEMS HEC operations is located above 10 000 ft density altitude and with a helicopter certified as Category A or equivalent as determined by the Agency.</p>
response	<p>Not accepted Please refer to topic ‘Performance’.</p>



comment	<p>91</p> <p>comment by: UK CAA</p> <p><b>Page No:</b> 32</p> <p><b>Paragraph No:</b> 3.9, sub-paragraph 6(c)(3)</p> <p><b>Comment:</b> An editorial suggestion is proposed below.</p> <p><b>Justification:</b> Improved readability.</p> <p><b>Proposed Text:</b></p> <p>3) <del>Unless performance class 3 criteria can be used</del> <b>Except</b> in accordance with (a) above, helicopters <del>Helicopters</del> conducting operations to/from a HEMS operating site located in a hostile environment shall be operated in accordance with performance class 2 and be exempt from the approval required by CAT.POL.H.305(a), provided compliance is shown with CAT.POL.H.305(b)(2) and (b)(3).</p>
response	Partially accepted
comment	<p>92</p> <p>comment by: UK CAA</p> <p><b>Page No:</b> 32</p> <p><b>Paragraph No:</b> 3.9, sub-paragraph 7(a)</p> <p><b>Comment:</b> An editorial suggestion to retain the original text is proposed below.</p> <p><b>Justification:</b> Improved readability</p> <p><b>Proposed Text:</b></p> <p>(a) <i>Selection.</i> The operator shall establish criteria for the selection of flight crew members for the HEMS task, taking <del>prior</del> <b>previous</b> experience into account.</p>
response	Accepted
comment	<p>93</p> <p>comment by: UK CAA</p> <p><b>Page No:</b> 33</p> <p><b>Paragraph No:</b> 3.9, sub-paragraphs 7(d)(1)(i)(C) &amp; (ii)</p> <p><b>Comment:</b> After sub-paragraph (C), we recommend there should be an “or” inserted as the items in this list are exclusive.</p> <p>In sub-paragraph (ii), there is reference to SPA.HEMS.120 and Table 1 which has been proposed to be moved to AMC. However, as previously commented, we believe this</p>

	<p>is incorrect and that the operating minima must be in the rule. The connectivity should be reviewed after the regulation has been addressed.</p> <p><b>Justification:</b> Editorial and correct references.</p> <p><b>Proposed Text:</b></p> <p>(C) the medical passenger requires the assistance of the HEMS technical crew member in flight; <b>or</b></p>
response	<p>Partially accepted Please refer to topic 'VFR minima'.</p>
comment	<p>94 <span style="float: right;">comment by: UK CAA</span></p> <p><b>Page No:</b> 33</p> <p><b>Paragraph No:</b> 3.9, sub-paragraph 7(e)(2)(ii)</p> <p><b>Comment:</b> A correction to the reference is proposed below, to reflect the renumbering of paragraphs</p> <p><b>Justification:</b> Accuracy</p> <p><b>Proposed Text:</b></p> <p>(ii) The measures referred to in <del>(f)(2)(i)</del> <b>(e)(2)(i)</b> shall be assessed during both of the following:</p>
response	<p>Accepted</p>
comment	<p>95 <span style="float: right;">comment by: UK CAA</span></p> <p><b>Page No:</b> 34</p> <p><b>Paragraph No:</b> 3.9, sub-paragraph 8(b)</p> <p><b>Comment:</b> An editorial suggestion is made below to improve readability.</p> <p><b>Justification:</b> Clarity</p> <p><b>Proposed Text:</b></p> <p>(b) Relevant extracts from the operations manual shall be made available to the organisation for which <del>the</del> HEMS <b>operations</b> are <del>is</del> being provided.</p>
response	<p>Accepted</p>





comment	<p>118 <span style="float: right;">comment by: <i>European Helicopter Association (EHA)</i></span></p> <p><b>1. SPA.HEMS.130(d)(2)(iii) page 33</b> the text should clarify if crew composition for night flight differ from that required during the day, in that HEMS transits to hospital were permitted with TCMs seated in the cabin.</p>
response	<p>Noted Please refer to topic 'Crew composition'.</p>
comment	<p>144 <span style="float: right;">comment by: <i>AIR ZERMATT AG</i></span></p> <p><b>SPA.HEMS.105</b> (2) a double cargo hook shall be used; <i>Or similar redundancy if no double cargo hook system, which allows to carry humans, is available.</i></p> <p><b>SPA.HEMS.110</b> (1) the excursion above 13 000 ft is necessary for the embarking/disembarking of persons or for HEMS <b>HEC</b> operations; <i>Delete "HEC", allow the derogation for all HEMS ops (reduce complexity)</i></p> <p><b>SPA.HEMS.125</b> (a) Performance class 3 operations shall not be conducted over a hostile environment shall only be conducted when a HEMS operating site used for take-off, landing or HEMS HEC operations <del>is located above 10 000 ft density altitude and</del> with a helicopter certified as Category <b>A or B</b> or equivalent as determined by the Agency.</p> <ul style="list-style-type: none"> <li>• <i>From what arguments/data were the 10'000ft concluded? Arbitrary, hence delete!</i></li> <li>• <i>Also include Category B helicopters. Why? SE helicopters are a reliable alternative and have way more excessive power than Cat A helicopters. Additionally, during peaks the available resources can be deployed in order to meet the "Golden Hour[1]" target.</i></li> <li>• <i>Recommendations of the JAA TGL 42 should be implemented:</i> <ul style="list-style-type: none"> <li>○ <i>For mountain rescue where environmental conditions of high altitude and high temperature - in excess of ISA – exists at the HEMS Operating Site such that adequate reserves of performance are not available to meet the requirements for PC2, provided AEO HOGE is available, the requirement for PC2 may be disregarded or additional resources, not meeting the requirements of Appendix 1 to JAR-OPS 3.005(d), may be employed.</i></li> <li>○ <i>For mountain rescue where the number of requests for HEMS missions is such that the target response time (with the appropriately established resources) is certain to be exceeded, additional resources, not meeting the requirements of Appendix 1 to JAR-OPS 3.005(d), may be employed.</i></li> </ul> </li> <li>• <i>Seasonal peaks not considered, "Golden Hour"</i></li> </ul>



response	<p><i>The European HEMS model (and that for most other regions in the world) is based upon meeting the golden hour target – i.e. base response, site arrival, site departure and arrival at the hospital all within one hour. To achieve this, operational areas are defined which will permit all the phases of a HEMS mission to be completed and the casualty delivered to the hospital within the golden hour.</i></p> <p>Partially accepted Please refer to topic 'Performance'.</p>
comment	<p>146 <span style="float: right;">comment by: Svensk Luftambulans</span></p> <p><b>SPA.HEMS.100 Helicopter emergency medical service (HEMS) operations (c)</b> [found on page 29 in the NPA]</p> <p>A welcomed and relevant change. As Unaided night flight in HEMS has counted for 4 of 5 accidents the last 25 years in Sweden. We fully agree that NVIS, when properly used by appropriately trained crew members in a crew concept, is considered to greatly assist in maintaining situational awareness and in managing risks during night operations.</p>
response	<p>Noted Thank you</p>
comment	<p>147 <span style="float: right;">comment by: Svensk Luftambulans</span></p> <p><b>SPA.HEMS.110 Equipment requirements for HEMS operations</b> [found on page 29 in the NPA]</p> <p>Relevant changes. We agree with all added points. Points (a), (b), (e) and (f) are already complied with. (c) is a welcomed change. While point (d) is of no direct relevant for us, we do support this as sensible measure in countries with high mountains.</p>
response	<p>Noted Thank you</p>
comment	<p>148 <span style="float: right;">comment by: Svensk Luftambulans</span></p> <p><b>SPA.HEMS.130 Crew requirements, (d) Crew composition, (2) Night flight, (III).</b> [found on page 32 and requirement (d) (2) (III) found on page 33 in the NPA]</p> <p><i>For single-pilot operations, the ceiling and visibility minima defined in point SERA.5005 shall apply unless the technical crew member is seated in the front seat and is suitably qualified.</i> Is not a sufficient safety barrier for night operations with only the (one) pilot in the cockpit. Furthermore, it only pertains to operating minima and not landing. HEMS flying is by nature time critical with little time for preparation. When carrying a patient onboard there is a high risk for diverting to other hospitals or landing at sites that have not been pre-surveyed for patient treatment (in those cases where treatment of the patient cannot be done in the air) or to meet other units. While having the HEMS technical crew member in the back might be acceptable during the day, we believe that it is not acceptable during night</p>
response	<p>Partially accepted Please refer to topic 'Crew composition'.</p>

comment	149	comment by: <i>Svensk Luftambulans</i>
	<p><b>AMC1 SPA.HERMS.110(b) Equipment requirements for HERMS operations (MMD)</b>          [found on page 29 in the NPA]          Relevant change that will increase situational awareness. Problem is to have an updated obstacle database this should be addressed in ARO.</p>	
response	Noted	
comment	153	comment by: <i>Swedish Transport Agency, Civil Aviation Department (Transportstyrelsen, Luftfartsavdelningen)</i>
	<p>SPA.HERMS.130          o The possibility for the HCM not to be assisting the pilot under the operation should be used with extreme caution. The HCM assistance was meant as a mitigation factor for not using a multicrew concept during night.</p>	
response	Noted Please refer to topic 'Crew composition'.	
comment	159	comment by: <i>Devon AA</i>
	<p>SPA.HERMS.130 (d) (2) - This allows for one pilot operation at night if the HTC is required in the cabin (presumably to assist with patient care/treatment). Yet AMC1 SPA.HERMS.130 (e) (page 44/45) seems not to, only allowing this in <i>exceptional circumstances</i>. This requires clarification as we consider the HERMS site to Hospital leg single pilot with HTC in cabin as normal operations day/night.</p>	
response	Noted Please refer to topic 'Crew composition'.	
comment	168	comment by: <i>Elilombarda</i>
	<p><b>SPA.HERMS.100</b>          (...)          (c) Night operations to non-pre-surveyed HERMS operating sites outside congested areas with cultural lighting shall be conducted under an approval in accordance with SPA.NVIS.100.</p> <p>The phrase "Night operations to non-pre-surveyed HERMS operating sites outside congested areas with cultural lighting..." can be easily misunderstood as "Night operations to non-pre-surveyed areas AND areas that have cultural lighting "...shall be conducted under an approval in accordance with SPA.NVIS.100."</p> <p>Reading this way, it looks like you have to use NVIS also for places outside congested areas but where there should be some kind of lighting from the ground (e.g. landing along a country road in a car accident site, BUT there should be some light from the street illumination).</p>	

response	<p>Night operations to non-pre-surveyed HEMS operating sites outside congested areas, with ITS RELATED cultural lighting, shall be conducted under an approval in accordance with SPA.NVIS.100.</p> <p>Partially accepted Sentence redrafted for clarification. Please refer also to topic 'NVIS'.</p>
comment	<p>169 <span style="float: right;">comment by: <i>Elilombarda</i></span></p> <p><b>SPA.HEMS.110</b> (...) (e) For single-pilot operations at <u>night</u>, the helicopter shall be equipped, within 5 years following the date of publication of the amending regulation, with a suitable stability augmentation system or autopilot.</p> <p>Allowing a single-pilot operations at night with helicopters without a suitable stability augmentation system or autopilot for a period of 5 years would significantly maintain a high operational risk. It is suggested to include a mitigation requiring to comply with the basic SERA for cloud and visibility conditions (i.e., the HEMS operating minima contained in Table 1 of SPA.HEMS.120 shall not be used).</p>
response	<p>Not accepted Please refer to topic 'Autopilots'.</p>
comment	<p>173 <span style="float: right;">comment by: <i>Elilombarda</i></span></p> <p>Attachments <a href="#">#3</a> <a href="#">#4</a></p> <p><b>SPA.HEMS.130 Crew requirements</b> (...) (cd) <del>Recency</del> <u>Instrument flight training</u>. <del>All pilots</del> <u>Pilots</u> conducting HEMS operations without a valid instrument rating shall <del>have completed</del> <u>complete</u> a minimum of 30 <del>minutes</del> <u>minutes</u> flight training by sole reference to instruments in a helicopter or in an FSTD <del>within the last six months</del></p> <p>It is not felt sufficiently safe to have a pilot with a simple training by sole reference to instruments when he is allowed to fly in low visibility, at night, with low ceiling/cloud base and in a helicopter that will be allowed not to have an augmented stabilisation system for the next 5 years. Additionally the pilot is allowed to fly without a Technical Crew Member in the front seats in certain situations (that could become a routine - see comment to "AMC1 SPA.HEMS.130(a) Crew requirements" - "<u>HEMS TECHNICAL CREW MEMBER</u>" - point (a)).</p> <p>In the "2. In summary — why and what" of this NPA, it is defined the safety objectives of the proposed regulation change, in particular:</p> <p>- Point 2.1 - Page 7 - Other than mountain HEMS operations - "<u>The available accident data supports the idea that HEMS OPERATIONS AT NIGHT OR IN MARGINAL WEATHER CONDITIONS CAN BE IMPROVED</u>".</p>



- Point 2.2 What we want to achieve — objectives - "MAINTAIN A HIGH AVIATION SAFETY LEVEL by reviewing the requirements related to HEMS flights by day or night, regarding equipment, TRAINING, minima, and operating/hospital site illumination.

- Point 2.3.2.3 Seating of the HEMS technical crew member - "IT IS RECOGNISED THAT THE HEMS TECHNICAL CREW MEMBER SHOULD BE SITTING AT THE FRONT in order to assist the pilot to the best of their abilities (...)"

- Point 2.3.3.5 Mitigating the risk of loss of visual reference during flight - "THE LOSS OF VISUAL REFERENCE DURING A VFR FLIGHT REMAINS ONE OF THE MAJOR CONTRIBUTORS TO FATAL ACCIDENTS IN HEMS (...)"

- Point 2.3.3.6 HEMS crew member training and checking - "THE HEMS TECHNICAL CREW MEMBER IS CONSIDERED TO BE ESSENTIAL TO THE SAFETY OF SINGLE-PILOT OPERATIONS."

Therefore it is felt that the introduction made in the NPA and reported in the points above, are not sufficiently addressed in the proposed NPA, allowing peculiarities that will increase the risks which are not sufficiently addressed and mitigated therein. Thus, it is suggested to reconsider the following points:

- require the IFR rating, with the required recurrent IFR training, for all HEMS pilots, especially for night operations. The allowance of reduced visibility and cloud base/ceiling, both during day and night flights, will definitely increase the risk of inadvertent IMC with catastrophic consequences, due to the low altitude and reduced space and time to recover from the unwanted situation.

There have been several accidents in HEMS for inadvertent IMC, where one of the contributing factor was the inability to timely recover from the entrance in IMC (e.g. HEMS accident in Italy on January 24, 2017, to a HEMS AW139 EC-KJT at Monte Cefalone, Lucoli (AQ), with 6 fatalities - Investigation file attached).

The present comment is supported by the Finnish AltMoC to SPA.HEMS.130(e)(2)(ii) (file attached).

- The HEMS flights should always have two persons in the front seats, reducing to the minimum the allowance for the sole pilot. The search for a HEMS landing site and the first landing in a new landing site can be extremely demanding for the pilot, so there could be no alleviations. Subsequent support flights and the return flight to hospital continue to maintain a high level of risk, due to the external pressure, time limitation, presence of obstacles, possible adverse meteorological conditions and the other typical peculiarities of the HEMS operations. Therefore, the allowance of the Technical Crew Member in the back seats shall be compensated by adequate mitigations, as a minimum those required for normal CAT heli ambulance, i.e. no HEMS (part SPA.HEMS) alleviations.

response Not accepted  
Please refer to topic 'Flight crew training' and 'Crew composition'.

comment 174 comment by: *Elilombarda*  
SPA.HEMS.130 Crew requirements  
(...)  
(de) Crew composition  
(...)



	<p>(2) Night flight. The minimum crew by night shall be:</p> <ul style="list-style-type: none"> <li>(i) two pilots; or</li> <li>(ii) one pilot and one HEMS technical crew member in specific geographical areas defined by the operator in the operations manual; or</li> <li>(iii) one pilot, if the medical passenger requires the assistance of the HEMS technical crew member during the flight from the HEMS operating site to the <u>hospital</u>.</li> </ul> <p>If, especially at night, the Technical Crew Member is in the back seats, it is suggested to increase the minima to the basic SERA, for similarity with the preceding point "SPA.HEMS.130 - (de) - (1) - (ii)" related to the Day Flight. Thus, it is suggested to insert:</p> <p>"(iv) In the cases described in (iii), the operational minima shall be as defined by the applicable airspace requirements; the HEMS operating minima contained in Table 1 of SPA.HEMS.120 shall not be used."</p>
response	<p>Noted Please refer to topic 'VFR minima'.</p>
comment	<p>175 <span style="float: right;">comment by: <i>Elilombarda</i></span></p> <p>SPA.HEMS.130 Crew requirements (...) (de) Crew composition (1) <i>Day flight</i>. The minimum crew by day shall be one pilot and one HEMS technical crew member. (...) <del>(iii) Only in the case described in (i)(A) may the commander land at a HEMS operating site without the technical crew member assisting from the front seat.</del></p> <p>It is suggested to keep the point (iii) (deleted in the proposed NPA). The point should be changed in:</p> <p>(iii) Only in the case described in (i)(A) AND (i)(D) may the commander land at a HEMS operating site without the technical crew member assisting from the front seat.</p> <p>"AMC1 SPA.HEMS.130(e) Crew requirements - <u>HEMS TECHNICAL CREW MEMBER - (a)</u>" should be reviewed accordingly (see comment to the AMC).</p>
response	<p>Not accepted Please refer to topic 'TCM seating'.</p>
comment	<p>177 <span style="float: right;">comment by: <i>Elilombarda</i></span></p> <p>SPA.HEMS.130 Crew requirements (...)</p>

	<p>(de) Crew composition</p> <p>(...)</p> <p>(2) Night flight. The minimum crew by night shall be:</p> <p>(...)</p> <p>(ii) one pilot and one HEMS technical crew member <del>in specific geographical areas defined by the operator in the operations manual.</del></p> <p>It is suggested to keep the point (ii) (partially deleted in the proposed NPA) in its entirety. It should be left to the local Authority and to the Operator to define a specific area where to allow the flight with a Technical Crew Member, in consideration of the knowledge of the area by the crew and for the limit of the required Area Qualification training.</p> <p>In case of deletion the "GM1 SPA.HEMS.130(e)(2)(ii) Crew requirements" should be revised or deleted.</p>
response	<p>Partially accepted. GM1 SPA.HEMS.130(e)(2)(ii) has been deleted.</p>
comment	<p>192 <span style="float: right;">comment by: <i>Swiss Air-Ambulance Rega</i></span></p> <p>SPA.HEMS.110(d)(9) "(9) hypoxia training for all pilots involved;"</p> <p>We do not expect that high altitude chamber testing is necessary to achieve the necessary competency. Therefore, we propose the following amendment:</p> <p>"(9) <b>Theoretical</b> hypoxia training for all pilots involved;"</p>
response	<p>Not accepted Please refer to topic 'Oxygen 3'.</p>
comment	<p>193 <span style="float: right;">comment by: <i>Swiss Air-Ambulance Rega</i></span></p> <p>SPA.HEMS.120(c)</p> <p>The decision should be at the discretion of the PIC. Especially critically ill/injured patients could not be flown from the HEMS operating site to a medical centre if the patient requires both doctor and THCM in the cabin for the treatment. Also, HHO/HEC operations would not be possible after the THCM changed to the hoist operator or HEC position/seat.</p> <p>We propose the following amendment: "(c) For single-pilot operations, the ceiling and visibility minima defined in point SERA.5005 shall apply unless the technical crew member is seated in the front seat and is suitably qualified. Any deviation from the requirement of the technical crew member being seated in the front seat due to specific medical or operational reasons is at the discretion of the PIC."</p>

response Noted  
Please refer to topic 'TCM seating'.

comment 198 comment by: ELILOMBARDA

**SPA.HEMS.110 (e)**

Allowing a single-pilot operations at night with helicopters without a suitable stability augmentation system or autopilot for a period of 5 years would significantly maintain a high operational risk. It is suggested to include a mitigation requiring to comply with the basic SERA for cloud and visibility conditions (i.e., the HEMS operating minima contained in Table 1 of SPA.HEMS.120 shall not be used).

**Add:** for operations in Mountain area the helicopter shall be equipped with the LIDAR system to increase the situational awareness for the pilot during HHO or HEC operations near the mountain.

response Not accepted  
Please refer to topics 'Autopilots', 'VFR minima', and 'Other recommendations'.

comment 199 comment by: ELILOMBARDA

**SPA.HEMS.130 Crew requirements**

It is not felt sufficiently safe to have a pilot with a simple training by sole reference to instruments when he is allowed to fly in low visibility, at night, with low ceiling/cloud base and in a helicopter that will be allowed not to have an augmented stabilisation system for the next 5 years.

Additionally the pilot is allowed to fly without a Technical Crew Member in the front seats in certain situations (that could become a routine - see comment to "AMC1 SPA.HEMS.130(a) Crew requirements" - "HEMS TECHNICAL CREW MEMBER" - point (a).

In the "2. In summary — why and what" of this NPA, it is defined the safety objectives of the proposed regulation change, in particular:

- Point 2.1 - Page 7 - Other than mountain HEMS operations - "The available accident data supports the idea that HEMS OPERATIONS AT NIGHT OR IN MARGINAL WEATHER CONDITIONS CAN BE IMPROVED".

- Point 2.2 What we want to achieve — objectives - "MAINTAIN A HIGH AVIATION SAFETY LEVEL by reviewing the requirements related to HEMS flights by day or night, regarding equipment, TRAINING, minima, and operating/hospital site illumination.

- Point 2.3.2.3 Seating of the HEMS technical crew member - "IT IS RECOGNISED THAT THE HEMS TECHNICAL CREW MEMBER SHOULD BE SITTING AT THE FRONT in order to assist the pilot to the best of their abilities (...)"





- Point 2.3.3.5 Mitigating the risk of loss of visual reference during flight - "THE LOSS OF VISUAL REFERENCE DURING A VFR FLIGHT REMAINS ONE OF THE MAJOR CONTRIBUTORS TO FATAL ACCIDENTS IN HEMS (...)"

- Point 2.3.3.6 HEMS crew member training and checking - "THE HEMS TECHNICAL CREW MEMBER IS CONSIDERED TO BE ESSENTIAL TO THE SAFETY OF SINGLE-PILOT OPERATIONS."

Therefore it is felt that the introduction made in the NPA and reported in the points above, are not sufficiently addressed in the proposed NPA, allowing peculiarities that will increase the risks which are not sufficiently addressed and mitigated therein. Thus, it is suggested to reconsider the following points:

- require the IFR rating, with the required recurrent IFR training, for all HEMS pilots, especially for night operations. The allowance of reduced visibility and cloud base/ceiling, both during day and night flights, will definitely increase the risk of inadvertent IMC with catastrophic consequences, due to the low altitude and reduced space and time to recover from the unwanted situation.

There have been several accidents in HEMS for inadvertent IMC, where one of the contributing factor was the inability to timely recover from the entrance in IMC

- The HEMS flights should always have two persons in the front seats, reducing to the minimum the allowance for the sole pilot. The search for a HEMS landing site and the first landing in a new landing site can be extremely demanding for the pilot, so there could be no alleviations. Subsequent support flights and the return flight to hospital continue to maintain a high level of risk, due to the external pressure, time limitation, presence of obstacles, possible adverse meteorological conditions and the other typical peculiarities of the HEMS operations. Therefore, the allowance of the Technical Crew Member in the back seats shall be compensated by adequate mitigations, as a minimum those required for normal CAT heli ambulance, i.e. no HEMS (part SPA.HEMS) alleviations.

response Not accepted  
Please refer to topics 'Flight crew training' and 'Crew composition'.

comment 200 comment by: ELILOMBARDA

#### **SPA.HEMS.130 (e) Crew composition**

It is not acceptable the reduction of the safety with the Technical Crew Member seating in the passenger cabin. see the comments on page 7 "why e what" and in AMC1 SPA.HEMS.130(e)

It is suggested to maintain the old requirements and **Add a new point to increase the safety during the operations in the mountain area as follow:**



	<ul style="list-style-type: none"> <li>• <b>For day and Night for HEMS-HHO operations and/or HEMS-HEC operations the minimum crew shall be two pilots and one HHO-HEC Technical Crew Member seating in the passenger cabin or one pilot and one HEMS technical crew member seating in the copilot seat and one HHO-HEC Technical crew member seating in the passenger cabin.</b></li> </ul>
response	<p>Not accepted Please refer to topic 'TCM seating'.</p>
comment	<p>216 <span style="float: right;">comment by: DRF-Luftrettung</span></p> <p><b>SPA.HEMS.110 (c) (d) Oxygen requirements</b></p> <p>We welcome the proposal of the EASA to simplify the rules for oxygen requirements. This brings us to the point, to appreciative acknowledge, that the EASA finally recognized, that HEMS-Missions cannot be planned and compared with normal CAT-Operations.</p> <p>On the other hand, we have to ask, why only in this specific field of equipment alleviation is given to regulations concerning CAT-Operations.</p> <p>There are many more fields, where alleviation is nessesary, to conduct HEMS-Missions in deviation to the existing rules. One example for instance is the Flight of the HEMS-Pilot alone to a hospital, because the HEMS-TC and the medical physician have to accompany the patient by ground based medical service.</p> <p><b>We therefore would like to point your interest to our comment regarding AMC1 SPA.HEMS.130(e)</b></p>
response	<p>Noted Please refer to the response to your comments #224, #228 and #229 regarding AMC1 SPA.HEMS.130(e).</p>
comment	<p>217 <span style="float: right;">comment by: DRF-Luftrettung</span></p> <p><b>SPA.HEMS.130(d)(1)(i)(A)</b></p> <p><b>Night flight. The minimum crew by night shall be: (ii) one pilot and one HEMS technical crew member</b></p> <p>With the omission of the specified area it is now possible, to fly permanently with one pilot and one HEMS-TC at night.</p> <p>This jeopardizes all efforts of responsible and safety-oriented HEMS-Operators, which changed not only their fleet but also invested in the hiring and training of additional pilots, to perform a safe HEMS-Mission at night. Especially CFIT, unusual attitude recovery and flying with the help of instruments in night conditions without</p>

	<p>visible horizon, are safety risks, where a HEMS-TC is more or less overwhelmed with work or overstrain</p> <p>We consider, that small operators will stick to a crew concept of one pilot and HEMS-TC, while the large operators will stay with their safe execution of HEMS Night mission with two pilots. The economical outcome can only be guessed, but our experience is, that the present tenders for health services are based mainly on a cost based level.</p> <p>The EASA therefore jeopardize all efforts in establishing a level playing field for all operators.</p> <p><b>Please rethink this new proposal.</b></p>
response	<p>Noted</p> <p>Please refer to topic 'Crew composition'.</p>

comment	<p>218 <span style="float: right;">comment by: DRF-Luftrettung</span></p> <p><b>SPA.HEMS.130(d)(2)</b></p> <p><b>Night flight. The minimum crew by night shall be:</b>  <b>(iii) one pilot, if the medical passenger requires the assistance of the HEMS technical crew member during the flight from the HEMS operating site to the hospital</b></p> <p>This new paragraph implements, that up to 2022 an operator with helicopters not equipped with SAS or autopilot can fly HEMS-Mission with one single pilot without assistance of the HEMS-TC.</p> <p>Please re-evaluate the safety risks and come up with a new, more safety relevant proposal.</p> <p><b>We suggest, to specify, that this flights can only be performed, with a functional autopilot with at least heading and altitude hold.</b></p>
response	<p>Partially accepted</p> <p>Please refer to topic 'Autopilots'.</p>

comment	<p>236 <span style="float: right;">comment by: Finnish Transport Safety Agency</span></p> <p>SPA.HEMS.100</p> <p>Strongly supported</p>
response	<p>Noted</p> <p>Thank you</p>

comment	<p>237 <span style="float: right;">comment by: Finnish Transport Safety Agency</span></p> <p>SPA.HEMS.110(b)</p>
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response	<p>SPA.HEMS.110 is generally supported, however the requirement in point (b) should be extended to all HEMS operations, not only for night flights. The device is an important safety tool at daytime in restricted visibility as it helps the pilot significantly with the situational awareness.</p> <p>Proposal: <del>For night flights, t</del>The helicopter shall be equipped...</p>
	<p>Accepted Please refer to topic 'Moving maps'.</p>
comment	<p>238 <span style="float: right;">comment by: <i>Finnish Transport Safety Agency</i></span></p> <p>SPA.HEMS.110(e)</p> <p>The proposal is supported, however the three axis autopilot should be required in all single-pilot operations. Autopilot with proper use of upper modes is essential tool to decrease workload both at night time and at daytime, especially in restricted visibility.</p> <p>Proposal: <i>For single-pilot operations <del>at night</del>, the helicopter shall be equipped, within 5 years following the date of publication of the amending regulation, with <del>a suitable stability augmentation system or three axis</del> autopilot.</i></p>
response	<p>Partially accepted Please refer to topic 'Autopilots'.</p>
comment	<p>256 <span style="float: right;">comment by: <i>OEAMTC</i></span></p> <p><i>SPA.HEMS.130 Crew requirements</i></p> <p>...</p> <p><i>(d) Crew composition</i></p> <p><i>(1) Day flight. The minimum crew by day shall be one pilot and one HEMS technical crew member.</i></p> <p><i>(i) This may be reduced to one pilot only if one of the situations below occur:</i></p> <p><i>(A) at a HEMS operating site the commander is required to fetch additional medical supplies, refuel, or reposition. In such case, the HEMS technical crew member may be left to give assistance to ill or injured persons while the commander undertakes this flight;</i></p> <p>Suggestion: delete <b>at a HEMS operating site</b> to enable the commander to also to undertake a flight from a hospital (while the TCM is handing over the patient at the hospital) without leaving the "HEMS regulations"</p>
response	<p>Partially accepted Please refer to topic 'Crew composition'.</p>
comment	<p>260 <span style="float: right;">comment by: <i>Babcock Mission Critical Services Limited</i></span></p>

response	<p>SPA.HEMS.100: Babcock fully supports these new minima for night operations.</p> <p>Noted Thank you</p>
comment	<p>261 <span style="float: right;">comment by: <i>Babcock Mission Critical Services Limited</i></span></p> <p><b>SPA.HEMS.110</b> In the discussion of Option 3 on page 14, the intention was to align oxygen requirements for a MOPSC of 6 or less. In the draft proposal this is indicated as a MOPSC of 9 or less. It is not clear or substantiated which is intended, but we suggest the rules should encourage the use of the most capable helicopters in high altitude HEMS operations. Hence we support the proposed wording (in SPA.HEMS.110) that relaxes the oxygen requirements for helicopters with a MOPSC of 9 or less.</p>
response	<p>Accepted Please refer to topic 'Oxygen 1'.</p>
comment	<p>262 <span style="float: right;">comment by: <i>Babcock Mission Critical Services Limited</i></span></p> <p><b>Issue</b></p> <p>SPA.HEMS.120 Further to our comments on AMC SPA.HEMS.120, we do not feel the HEMS Operating Minima in Table 1 should be transferred from the Regulation to the AMC.</p> <p><b>Why?</b></p> <p>Transferring to AMC implies that alternative minima may be approved via an AltMoC. We do not believe there are any occasions where alternative minima could be accepted.</p> <p><b>Suggested alternative:</b></p> <p>Retain simplified Table 1 HEMS Operating Minima in SPA.HEMS.120.</p>
response	<p>Not accepted Please refer to topic 'VFR minima'.</p>
comment	<p>263 <span style="float: right;">comment by: <i>Babcock Mission Critical Services Limited</i></span></p> <p><b>Issue</b></p> <p>SPA.HEMS.120 (c) For single-pilot operations, the ceiling and visibility minima defined in point SERA.5005 shall apply unless the technical crew member is seated in the front seat and is suitably qualified.</p> <p><b>Why?</b></p>

response	<p>In some helicopter types the TCM may be seated in a front seat but facing the rear to assist the medical crew in their duties. In this scenario, the TCM is not able to support the single pilot in their duties.</p> <p><b>Suggested alternative:</b></p> <p>"(c) For single-pilot operations, the ceiling and visibility minima defined in point SERA.5005 shall apply unless the technical crew member is seated in the front seat facing forward, engaged in duties supporting the pilot and is suitably qualified.</p>
comment	<p>264 <span style="float: right;">comment by: <i>Babcock Mission Critical Services Limited</i></span></p> <p><b>Issue</b></p> <p>SPA.HEMS.125</p> <p>Further to the our (and UK CAA) comments made about the changes to CAT.POL.H.420 on Page 25, paragraph 3.7, sub-paragraph (b)(2), it is recommended that the text of SPA.HEMS.125(a) be amended to provide for PC3 operations over a hostile environment above 10,000 ft with Cat A helicopters. At sub-paragraph (b) a derogation against CAT.POL.H.400(d)(2) is already proposed and sets a suitable precedent. By introducing a derogation here, the HEMS approval will in effect provide the necessary approval otherwise required under CAT.POL.H.420.</p> <p><b>Why?</b></p> <p>Placing a derogation in this section provides the necessary control on the alleviated performance requirements in an appropriate context.</p> <p><b>Suggested alternative:</b></p> <p>Revise paragraph (a) as follows: "(a) <b>By way of derogation from CAT.POL.H.420(b)(2)</b>, Performance class 3 operations ... Agency."</p>
response	<p>Not accepted</p> <p>Please refer to topic 'Performance'.</p>
comment	<p>265 <span style="float: right;">comment by: <i>Babcock Mission Critical Services Limited</i></span></p> <p><b>SPA.HEMS.130</b></p> <p>Babcock fully supports the revised instrument flight training requirements at point (c).</p>
response	<p>Noted</p> <p>Thank you</p>
comment	<p>266 <span style="float: right;">comment by: <i>Babcock Mission Critical Services Limited</i></span></p>

	<p><b>Issue</b></p> <p>SPA.HEMS.125 (3) Unless performance class 3 criteria can be used in accordance with (a) above, helicopters conducting operations to/from a HEMS operating site located in a hostile environment shall be operated in accordance with performance class 2 and be exempt from the approval required by CAT.POL.H.305(a), provided compliance is shown with CAT.POL.H.305(b)(2) and (b)(3).</p> <p><b>Why?</b></p> <p>Editorial omission appears to preclude PC1 operations where these are possible. It may be possible to carry out PC1 operations at some HEMS operating sites which are pre-surveyed, documented and of suitable size, e.g. football pitches which are regularly used.</p> <p><b>Suggested alternative:</b></p> <p>(3) Unless performance class 3 criteria can be used in accordance with (a) above, helicopters conducting operations to/from a HEMS operating site located in a hostile environment shall be operated in accordance with <b>performance class 1</b> or performance class 2 and be exempt from the approval required by CAT.POL.H.305(a), provided compliance is shown with CAT.POL.H.305(b)(2) and (b)(3).</p>
response	<p>Not accepted</p> <p>Point (3) applies only in a hostile environment. In PC1, a safe landing is always possible. A hostile environment implies that PC1 criteria are not met.</p>
comment	<p>267 <span style="float: right;">comment by: <i>Babcock Mission Critical Services Limited</i></span></p> <p><b>Issue</b></p> <p>SPA.HEMS.130 "(d) Crew composition ... (ii) In the cases described in (i), the operational minima shall be as defined by the applicable airspace requirements; the HEMS operating minima contained in <u>Table 1 of SPA.HEMS.120</u> shall not be used."</p> <p><b>Why?</b></p> <p>SPA.HEMS.120 Table 1 is deleted as per this NPA.</p> <p><b>Suggested alternative:</b></p> <p>"(d) Crew composition ... (ii) In the cases described in (i), the operational minima shall be as defined by the applicable airspace requirements; the HEMS operating minima contained in Table 1 of <b>AMC1</b> SPA.HEMS.120(a) shall not be used."</p> <p>NB A regulatory requirement should not refer to an AMC. Our comment 262 suggests this Table should be retained in its simplified form in the regulation (SPA.HEMS.130). In which case thi scomment may be disregarded.</p>



response	Partially accepted
comment	<p>268 <span style="float: right;">comment by: <i>Babcock Mission Critical Services Limited</i></span></p> <p><b>Issue</b></p> <p>SPA.HEMS.130  "(d) Crew composition ... (ii) In the cases described in (i), the operational minima shall be as defined by the applicable airspace requirements; the HEMS operating minima contained in Table 1 of AMC1 SPA.HEMS.120(a) shall not be used."</p> <p><b>Why?</b></p> <p>The removal of the HEMS weather derogations in favour of the airspace limits to mitigate a single unaccompanied pilot in the above reference is ineffective as at 300ft the airspace limit may be more generous than the HEMS limit. The airspace limits are predicated on an aircraft that must operate at 500ft or above (SERA.5005(f)), which may be derogated for medical flights under SERA.3105.</p> <p><b>Suggested alternative:</b></p> <p>The choice of operational minima should be revised so as to preclude the potential adoption of more lenient, and hence less safe, minima.</p>
response	<p>Noted  Please refer to topic 'VFR minima'.</p>
comment	<p>287 <span style="float: right;">comment by: <i>Stephanie Selim</i></span></p> <p>3.9.1 SPA.HEMS.100 (c) (p29)</p> <p>DGAC is not in favour of the mandatory nature of this type of equipment, which should remain optional.</p> <p>On one hand, up to now, French regulations classify these equipment as war material and it is very difficult or impossible for private companies (such as HEMS operators in France) to have access to it. The Ministry of the Interior and the Ministry of Defence are working with DGAC on possible easing of the ban on the use of NVIS, but this work has not yet been completed.</p> <p>On the other hand, even if French regulations were to evolve favourably on the holding of NVIS, France wishes to maintain flexibility in the use of this equipment. DGAC considers that it is up to the operator to decide whether such equipment is useful for the achievement of its mission. In addition, NVIS are not very useful in brightly lit urban areas.</p> <p>DGAC is in favour of defining differentiated minima according to the use or not of NVIS.</p>
response	<p>Noted  The alternative to NVIS is the use of pre-surveyed sites. Please refer to topic 'NVIS'.</p>





comment	<p>288 <span style="float: right;">comment by: <i>Stephanie Selim</i></span></p> <p>3.9.2 SPA.HEMS.105 (b)(1) (p29)</p> <p>SPA.HEMS.105: (b) (1) Very few equipment is certified by EASA today and it would be desirable for more of this equipment to be certified. In addition, DGAC would like to know if it's also possible to use the AMC SPO.SPEC.105 b) to be compliant : if so, DGAC agrees with this proposal.</p>
response	<p>Accepted Please refer to topic 'HEMS HEC'.</p>
comment	<p>289 <span style="float: right;">comment by: <i>Stephanie Selim</i></span></p> <p>3.9.3 SPA.HEMS.110 (b) (p29)</p> <p>This new requirement seems too onerous. Few helicopters are equipped with HTAWS and an EFB cannot currently perform this function, see comments on AMC1 SPA.HEMS.110(b). In addition, the systems should be compatible with NVIS.</p>
response	<p>Noted Please refer to topic 'Moving maps'.</p>
comment	<p>290 <span style="float: right;">comment by: <i>Stephanie Selim</i></span></p> <p>3.9.3 SPA.HEMS.110 (d) (p29)</p> <p>DGAC is in favour of introducing this flexibility but questions the criteria on which the approval will be based (points (6) and (7)).</p> <p>For points (9) and (10), the MCT should also be involved. DGAC suggests replacing "pilots" by "crew".</p> <p>Could this flexibility be extended to CAT operations?</p>
response	<p>Accepted Please refer to topic 'Oxygen 3'.</p>
comment	<p>291 <span style="float: right;">comment by: <i>Stephanie Selim</i></span></p> <p>3.9.5 SPA.HEMS.122 (p31)</p> <p>These new requirements seem a little too demanding and we wonder if they are suitable for helicopters.</p> <p>For example: (b) 2 hours: this is not realistic for a short flight as HEMS flights often are. DGAC proposes either to reduce it to 1 hour or to write as b) 1) of CAT.OP.MPA.181, referring only to "the estimated time of arrival at the planned landing site". (c) too constraining for the helicopter.</p>



response	Noted Please refer to topic 'Destination alternates'.
comment	292 <span style="float: right;">comment by: <i>Stephanie Selim</i></span> 3.9.5 SPA.HEMS.122 (b) (p31)  Replace "and" with « : » at the end of the first paragraph.
response	Noted Please refer to topic 'Destination alternates'.
comment	293 <span style="float: right;">comment by: <i>Stephanie Selim</i></span> 3.9.5 SPA.HEMS.125 (a) (p31)  The proposed wording would mean banning single-engine aircraft, which currently provide rescue missions in mountains, more efficiently and at lower cost than twin-engine aircraft while providing a high level of safety. DGAC recommends to try to find a formulation consistent with the current division of tasks between single and twin-engine aircraft.  Indeed, in many mountain rescue operations, the high-performance light single-engine aircraft (of the Ecureuil AS350 B3 type) is much more efficient than a twin-engine aircraft. In addition, the 10.000ft criterion is very arbitrary and too restrictive to set the altitude from which CP3 exploitation in hostile environment is possible. DGAC suggests deleting the part "and with a helicopter certified as Category A or equivalent as determined by the Agency", and recommends to seek a wording that authorises the use of single-engine aircraft for mountain rescue operations, particularly when human life is at stake, and to seek a criterion more in line with operational reality to allow CP3 on multi-engine aircraft. In France, as it is well know, there is a huge mountain activity, both in summer and winter. Thus there is a huge need of rescue services, possibly by helicopter. These rescue operations cover a wide spectrum, from very simple operations like bringing back people in difficulty, to more complex operations, as follow. When a ski lift (chairlift, cable car) breaks down, jams and all people have to be evacuated quickly before nightfall to prevent them from freezing to death, all available helicopters in the area, regardless of whether they are single or twin-engine, are used in performance class 1, 2 or 3, provided that the rescue operation is carried out quickly and efficiently.
response	Partially accepted Please refer to topic 'Performance'.
comment	294 <span style="float: right;">comment by: <i>Stephanie Selim</i></span> 3.9.5 SPA.HEMS.130 (p32)  (d) (1) (ii) the reference has become incorrect: it is no longer the SPA.HEMS.120 point but its AMC, the table in question having been downgraded from IR to AMC.

response	<p>3) The generalisation of SPA.HEMS.130(d)(3) provision to all HEMS flights regardless of crew composition and conditions day or night and regardless of a defined geographical area makes difficult to understand the requirements related to the listed points.</p> <p>In addition, it should be made clear what is exactly meant by the term "taken into account": should all items be taken into account or is compliance with the general scheme of the list sufficient? Moreover, does it mean that, if these items are contained in the MEL, they may not be in working order?</p> <p>3) v) What does "continuity of a crew concept" mean?</p>
	<p>Partially accepted Please refer to topic 'HEMS risk assessments'.</p>
comment	<p>295 <span style="float: right;">comment by: <i>Stephanie Selim</i></span></p> <p>3.10.1 GM1 SPA.HEMS.100(a) (p34)</p> <p>(a) DGAC would like the last paragraph on crisis situations to be removed. As these situations are not defined, and a definition is difficult to develop, this paragraph is likely to lead to further confusion.</p> <p>This GM should also recall the definition of SAR in order to clarify what falls under the BR and what is excluded from it. The following sentences (see page 7 of the NPA) could be added to the GM :</p> <p>"It should be noted that SAR operations are clearly not within the remit of EASA as they fall outside the scope of the Basic Regulation. ICAO defines SAR operations as follows:</p> <ul style="list-style-type: none"> <li>- search: an operation, normally coordinated by a rescue coordination centre or rescue sub-centre, using available personnel and facilities to locate persons in distress.</li> <li>- rescue: an operation to retrieve persons in distress, provide for their initial medical or other needs and deliver them to a place of safety.</li> </ul> <p>It is an institutional service coordinated by rescue centres, mainly for the purpose of providing assistance to aircraft." (See comment about HEMS definition)</p>
response	<p>Partially accepted Please refer to topic 'GM1 SPA.HEMS.100'.</p>
comment	<p>310 <span style="float: right;">comment by: <i>Garmin International</i></span></p> <p>SPA.HEMS.110(e) Page 30:</p> <p>The term suitable is ambiguous in the following requirement: "For single-pilot operations at night, the helicopter shall be equipped...with a suitable stability augmentation system or autopilot."</p> <p>Suggest changing to: "For single-pilot operations at night, the helicopter shall be equipped...with a stability augmentation system or autopilot meeting the requirements of AMC1 SPA.HEMS.110(e)".</p>

response	Noted
comment	<p>323 <span style="float: right;">comment by: <i>NOLAS</i></span></p> <p><b>SPA.HEMS.100 Helicopter emergency medical service (HEMS) operations (c)</b> This is a welcomed and relevant change. We fully agree that NVIS, when properly used by appropriately trained crew members in a crew concept, is considered to greatly assist in maintaining situational awareness and in managing risks during night operations.</p>
response	Noted Thank you
comment	<p>324 <span style="float: right;">comment by: <i>NOLAS</i></span></p> <p><b>SPA.HEMS.110 Equipment requirements for HEMS operations</b> These are very relevant changes. We agree with all added points. Points (a), (b), (e) and (f) are already complied with. Point (c) is a welcomed change. It has not made any sense to operate EC135/H135 type of helicopters and EC145/H145 type of helicopters with identical crew concept and patient carrying capacity but with different oxygen requirements. While point (d) is not relevant for us, we do support this as sensible measure in countries with high mountains with acclimatized crews.</p>
response	Noted Thank you
comment	<p>325 <span style="float: right;">comment by: <i>NOLAS</i></span></p> <p><b>SPA.HEMS.120 HEMS operating minima</b> A welcomed and relevant change. The new table in <b>AMC1 SPA.HEMS.120(a) HEMS operating minima</b> is much more practical and there was never any need to make a distinction between two-pilot and single-pilot operations with a sufficiently trained HEMS technical crew member. Rather than elaborating too much, we fully support the rationale as described in <b>2.3.3.3 Simplification of the HEMS operating minima</b>.</p>
response	Noted Thank you
comment	<p>326 <span style="float: right;">comment by: <i>NOLAS</i></span></p> <p><b>SPA.HEMS.122 Destination alternate aerodromes</b> A welcomed and relevant change. This will ensure that safe(r) IFR operations (for operators performing IFR operations) is conducted rather than (less safe) visual operation in marginal conditions at HEMS operating minima. Rather than elaborating too much, we fully support the rationale as described in <b>2.3.3.3 Simplification of the HEMS operating minima</b>.</p>
response	Noted Please refer to topic 'Destination alternates'.

comment	<p>327</p> <p>comment by: NOLAS</p> <p><b>SPA.HEMS.130 Crew requirements, (d) Crew composition, (2) Night flight, (III).</b></p> <p><b><u>Regulation</u></b></p> <p><i>(2) Night flight. The minimum crew by night shall be: (i) two pilots; or (ii) one pilot and one HEMS technical crew member; or (iii) one pilot, if the medical passenger requires the assistance of the HEMS technical crew member during the flight from the HEMS operating site to the hospital.</i></p> <p><b><u>Concern</u></b></p> <p>The requirement in <b>SPA.HEMS.120 HEMS operating minima</b>: “(c) For single-pilot operations, the ceiling and visibility minima defined in point SERA.5005 shall apply unless the technical crew member is seated in the front seat and is suitably qualified.” Is not a sufficient safety barrier for night operations with only the (one) pilot in the cockpit. Furthermore, it only pertains to operating minima and not landing. HEMS flying is by nature time critical with little time for preparation. When carrying a patient onboard there is a high risk for diverting to other hospitals or landing at sites that have not been pre-surveyed for patient treatment (in those cases where treatment of the patient cannot be done in the air) or to meet other units. While having the HEMS technical crew member in the back might be acceptable during the day, we believe that it is not acceptable during night.</p> <p>If two pilots or one pilot and a HEMS technical crew member is required for landing at a HEMS operating site, the same crew composition should be available for landing also when carrying a patient for night operations.</p> <p>We understand that it could be acceptable if flying only in the vicinity of metropolitan, well lit, areas with ample of pre-surveyed landing sites or large areas without obstacles/wires. For that reason, we do not oppose the change as such and it is always up to us to operate under stricter regime.</p> <p><b><u>Suggestion</u></b></p> <p>The text “(iii) In the cases described in (ii), the operational minima shall be as defined by the applicable airspace requirements; the HEMS operating minima contained in Table 1 of SPA.HEMS.120 shall not be used.” should be added as a clarification to be congruent with paragraph (ii) to (d) Crew Composition (1) <i>Day flight</i>.</p>
response	<p>Noted</p> <p>Please refer to topic ‘VFR minima’.</p>
comment	<p>339</p> <p>comment by: ADAC Luftrettung gGmbH</p> <p><i>SPA.HEMS.130 (d) (1) (i) (D) Page 33</i></p>

"conducting HEMS HEC operations"  
delete: "...with the cargo sling" or add "...with hoist operation or the cargo sling"

It is incomprehensible why HEMS operations with a cargo sling are privileged over hoist operations. While the exemption for cargo slings is part of the binding code, the exemption for hoist operations is dependent upon many conditions and placed into the non-binding AMC1.SPA.HEMS.130 (e) (page 44), which is prone to change any time.

Especially in high-mountain terrain hoist-missions, we operate with a four-person aeromedical crew in order to provide the best emergency medical services to our patient possible. In high mountain, rough, hostile terrain the medical passenger (doctor) requires assistance by the paramedic on the ground notably to prepare infusions, intubation, syringes and other equipment or to relocate and handle the patient. A third person (HHO-TC) needs to remain in the cabin of the helicopter to operate the hoist.

In such setups, **direct approaches for mountain-rescue** with a doctor, paramedic and a HHO-TC in the cabin are often the best course of action from a tactical point of view to save the patient. A landing at an intermediate site would sacrifice the **speed advantage a hoist offers**. These cases should therefore allow single-pilot crews during flights from the base to the operating site.

response

Noted

Please refer to topics 'Crew composition' and 'TCM seating'.

comment

359

comment by: *Vereinigung Cockpit***SPA.HEMS.130 Crew requirements,****(d) Crew composition****+ (2) Night flight, (III).**

[page 32 and 33 in the NPA]

HEMS flying is by nature time critical with little or no time for preparation. When carrying a patient onboard there is a high risk for unplanned landings, diverting to other hospitals or landing at sites that have not been reconnoissanced properly beforehand to treat the patient (treatment that cannot be done in the air) or to meet other units.

Germany has a highly used airspace and lots of controlled airspace in the lower airspace. It is therefore necessary to be very active on the radios. E.g. when starting a HEMS mission at a base like Hamburg, the crew has to communicate and listen to 3 radios at the same time. (Hamburg tower, glider site located next to the base plus tactical radio). In addition have the tactical navigation and communication very unfortunate man / machine interfaces as well as bad displays – but are the only ones certified.

This altogether is drawing very much attention of the flight crew into the cockpit. The airspace is in many areas crowded beside our natural colleagues the birds, there are a lot of other airspace users, which will have to be reconnoissanced: like military low lying traffic, other VFR traffic approaching / departing traffic of the airports (EDDH plus EDHI), balloons (massive ascends of toy balloons) and more and more drones.



VC is convinced, that for HEMS operation the level of safety is remarkably lowered, if the operation is performed with only one Pilot in the cockpit.

For night operation it is even an unacceptable risk.

Therefore VC requests EASA to change the rule:jj

**Strike out:**

~~(d) (1) (i) (B) after arriving at the HEMS operating site, the installation of the stretcher precludes the HEMS technical crew member from occupying the front seat;~~

Because this is low level standard and should not be performed anymore – because it is forcing the HEMS technical crew member to leave the seat in the cockpit even it is medically unnecessary

**Change:**

*(d) (1) (i) (C) the medical passenger requires the assistance of the HEMS technical crew member in flight.;*

In a way which clearly states, that under normal circumstances the HEMS technical crew member is an important part of the flight crew, even if the patient is on board and should only assist in the cabin if his assistance is indispensable. From our experience it is a question of medical training. Some of our medical passengers nearly never need the assistance, other demand the HEMS technical crew member to be in the cabin any time a patient is on board. This is not the sense of this regulation und should be clearly put out.

**Delete:**

~~(2) (iii) one pilot, if the medical passenger requires the assistance of the HEMS technical crew member during the flight from the HEMS operating site to the hospital.~~

At night we consider this operation (Single Pilot, no HEMS in Cockpit) as unacceptably unsafe. Therefore this kind of operation is e.g. not allowed by the major German HEMS-Operators – to our knowledge. Especially during landing as well as take off / while starting a flight it is to our strongest believe necessary to have two trained crew member in the cockpit. Lot`s of mission will take the HEMS Crew to unknown or barely know landing sites, which are not certified. This is to our opinion not unsafe, as long as there are two crew member in the cockpit; we can not imagine, how a diversion to a different than the planned landing site will be replanned in flight in an acceptably safe manner, if there is only one flight crew member in the cockpit at night.

response Partially accepted  
Please refer to topics 'Crew composition' and 'TCM seating'.

comment 367 comment by: OEAMTC  
*SPA.HEMS.130 Crew requirements*  
...  
*d) Crew composition*  
*(1) Day flight. The minimum crew by day shall be one pilot and one HEMS technical crew member.*



(i) This may be reduced to one pilot only if one of the situations below occur:

(A) at a HEMS operating site the commander is required to fetch additional medical supplies, refuel, or reposition. In such case, the HEMS technical crew member may be left to give assistance to ill or injured persons while the commander undertakes this flight;

(B) after arriving at the HEMS operating site, the installation of the stretcher precludes the HEMS technical crew member from occupying the front seat; or

(C) the medical passenger requires the assistance of the HEMS technical crew member in flight.;

(D) conducting HEMS HEC operations with the cargo sling.

(ii) In the cases described in (i), the operational minima shall be as defined by the applicable airspace requirements; the HEMS operating minima contained in Table 1 of SPA.HEMS.120 shall not be used.

It is not understood why the operational minima contained in Table 1 of SPA.HEMS.120 apply to the exception described in AMC1 SPA.HEMS.130(e) Crew requirements HEMS TECHNICAL CREW MEMBER under (a) i.e. when the the HEMS technical crew member is also the HHO technical crew member.

Suggestion:

Add

(E) when the HEMS technical crew member/HHO technical crew member is performing duties from the cabin.

response

Noted

Please refer to topics 'Crew composition' and 'TCM seating'.

comment

377

comment by: *European Cockpit Association*

Commented text:

**SPA.HEMS.100 Helicopter emergency medical service (HEMS) operations paragraph (c)**

ECA's comment:

This is a welcomed and relevant change. We fully agree that NVIS, when properly used by appropriately trained crew members in a crew concept, is considered to greatly assist in maintaining situational awareness and in managing risks during night operations.

response

Noted

Thank you

comment

378

comment by: *European Cockpit Association*

Commented text:

**SPA.HEMS.110 Equipment requirements for HEMS operations**

ECA's comment:





	<p>Relevant changes. We agree with all added points. Points (a), (b), (e) and (f) are already complied with. Point (c) is a welcomed change. It has not made any sense to operate EC135/H135 type of helicopters and EC145/H145 type of helicopters with identical crew concept and patient carrying capacity but with different oxygen requirements. While point (d) is of no direct relevant for us, we do support this as sensible measure in countries with high mountains.</p>
response	<p>Noted Thank you</p>

comment	<p>379</p> <p>comment by: <i>European Cockpit Association</i></p> <p>Commented text: <b>SPA.HEMS.130 Crew requirements, (d) Crew composition, (2) Night flight, (III).</b></p> <p>ECA's comment: As found by EASA and written at page 18 of the NPA under 2.3.3.6. <b>“The HEMS technical crew member is considered to be essential to the safety of single-pilot operation.”</b></p> <p>HEMS operation is by its nature unpredictable, demanding, characterized by unplanned stops or changes in flight planning, often in areas with bad weather reports or unreliable weather forecasts and conducted in heights where conflicts with birds or drones as well as other VFR traffic is to be expected. It is to the opinion of ECA that it is therefore essential, that the HEMS technical crew member is in the cockpit and be able to assist the pilot in airspace surveillance and flight planning during en-route phase.</p> <p>The requirement in <b>SPA.HEMS.120 HEMS operating minima</b>: <i>“(c) For single-pilot operations, the ceiling and visibility minima defined in point SERA.5005 shall apply unless the technical crew member is seated in the front seat and is suitably qualified.”</i> Is not a sufficient safety barrier as it only pertains to operating minima and not landing. If two pilots or one pilot and a HEMS technical crew member is required for landing at a HEMS operating site, the same crew composition should be available for landing also when carrying a patient. Especially for night operation. For night operations it is to our strong believe even absolutely essential, that the HEMS TC is seated in the cockpit under all circumstances, because night landings itself are more difficult and re-planning in case of diverting to a different hospital or for weather reasons or else make assistance in the cockpit vital.</p> <p><b>Therefore, the ECA doesn't agree with the on page 13 mentioned “more performance based approach to the seating of the HEMS technical crew member”</b></p> <p>The stretcher replacing the Co-Pilot seat is not up-to-date equipment, requiring the HEMS technical crew member to leave the cockpit without any medical reason, just by the nature of the configuration. Such an operation should be avoided due to the above given reasoning.</p> <p><b>Regulation:</b> <i>(d) Crew composition</i> <i>(1) Day flight. The minimum crew by day shall be one pilot and one HEMS technical crew member.</i></p>
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(i) This may be reduced to one pilot only if one of the situations below occur:  
 (A) at a HEMS operating site the commander is required to fetch additional medical supplies, refuel, or reposition. In such case, the HEMS technical crew member may be left to give assistance to ill or injured persons while the commander undertakes this flight;  
 (B) after arriving at the HEMS operating site, the installation of the stretcher precludes the HEMS technical crew member from occupying the front seat;  
 or  
 (C) the medical passenger requires the assistance of the HEMS technical crew member in flight.;  
 (D) conducting HEMS HEC operations with the cargo sling.  
 (ii) In the cases described in (i), the operational minima shall be as defined by the applicable airspace requirements; the HEMS operating minima contained in Table 1 of SPA.HEMS.120 shall not be used.

(2) Night flight. The minimum crew by night shall be:

- (i) two pilots; or
- (ii) one pilot and one HEMS technical crew member ; or
- (iii) one pilot, if the medical passenger requires the assistance of the HEMS technical crew member during the flight from the HEMS operating site to the hospital.

**Suggestion:**

**Delete:**

(d) (1) (i) (B)  
~~after arriving at the HEMS operating site, the installation of the stretcher precludes the HEMS technical crew member from occupying the front seat;~~

**Change:**

(d) (1) (i) (C) **if the medical condition of the patient necessitates the assistance of the HEMS technical crew member in flight.;**

**Delete:**

(2) (iii) ~~one pilot, if the medical passenger requires the assistance of the HEMS technical crew member during the flight from the HEMS operating site to the hospital.~~

**For all night operations.**

**Add a clarification / recommendation like:**

The HEMS technical crew member is considered to be essential to the safety of single-pilot operation. The flight operation with HEMS technical crew member not in the cockpit should be reduced to the absolute minimum. Operators shall take provisions by training the medical crew that way, that in the majority of the cases the HEMS TC is not needed for patient treatment during flight.

If for night operations a second medical crew member in the cabin is required, the operator shall staff the helicopter with additional medical crew for single pilot operations.

**Further explanation/resoning:**

Some operators / at some bases require the HEMS technical crew member to be in the cabin, at any patient transport – even with during uncritical transports. It is the opinion of the ECA an unnecessary risk for the flight operation and should be avoided.

response Partially accepted



Please refer to topics 'Crew composition' and 'TCM seating'.

comment	<p style="text-align: right;">394 <span style="float: right;">comment by: <i>Garmin International</i></span></p> <p>AMC1 SPA.HEMS.110(e) Page 29:</p> <p>The proposed requirements for a "Suitable Stability Augmentation System (SAS) or Autopilot" are insufficient to achieve the proposed safety objective. It is suggested that the following requirements be added:</p> <ol style="list-style-type: none"> <li>1. The SAS shall be approved for operation from liftoff to set down and all operations intended to be conducted</li> <li>2. (d) Altitude hold</li> </ol>
response	<p>Partially accepted Please refer to topic 'Autopilots'.</p>

comment	<p style="text-align: right;">395 <span style="float: right;">comment by: <i>Garmin International</i></span></p> <p>AMC1 SPA.HEMS.110(b) Page 29:</p> <p>The decision to accept EFB applications for use in Obstacle Awareness and Avoidance applications should not be allowed; see Garmin comment #309 for reasons. Additionally, the requirement for the moving map display is not sufficiently explicit to ensure capabilities necessary to meet the safety objective. The requirement should be clarified as follows:</p> <p>"A moving map and obstacle display may be any of the following</p> <ol style="list-style-type: none"> <li>(a) An HTAWS</li> <li>(b) A display integrated in the cockpit environment</li> <li><del>(c) An EFB software application</del></li> </ol> <p>The moving map and obstacle display must be capable of displaying ownship position as well as the following data to the extent that such data is included in the database:</p> <ol style="list-style-type: none"> <li>(a) Terrain elevation including elevation of terrain relative to the present helicopter altitude</li> <li>(b) Obstacle elevation including elevation of obstacles relative to the present helicopter altitude</li> <li>(c) Powerline elevation including elevation of powerlines relative to the present helicopter altitude" </li></ol>
response	<p>Not accepted</p>



Please refer to topic 'Moving maps'.

comment

400

comment by: *Mario Tortorici*

1. We do NOT agree with proposed wording of item (D) in SPA.HEMS.130 (d)(1)(i) , i.e. the provision to conduct HEMS HEC operations with cargo sling with a minimum crew of 1 pilot and no other member. This wording could be understood as the legal possibility to take off for an HEMS HEC flight with only one pilot on board and it is not consistent with the summary of the NPA (see page 7).

W We propose this wording:

" *"this may be reduced to one pilot only when:*

...

*(D) after the in flight reconnaissance of the HEMS operating site the HEMS technical crew member is required to disembark from the helicopter in a nearby landing site to deal with the sling and supervise an HEC operation from outside the helicopter "*

response

Accepted

Please refer to topic 'Crew composition'.

comment

401

comment by: *Mario Tortorici*

Attachment [#5](#)

Proposed text in SPA-HEMS.130(d)(1)(ii), for day flights only, seems to be redundant given the new requirement in SPA.HEMS.120(d)

In any case the limitation to use normal (non HEMS) operating minima if the commander is not assisted by another pilot or a qualified technical crew member in a front seat shall clearly cover both day and night flights. We cannot accept the use of degraded minima without mitigating factors.

Please note the content of attached Safety Recommendation n. ANSV-2/66-17/2/A/18 by Italian Agency for Air accident investigation

This is even more necessary in night flights since it is obvious that night flights are more challenging than day flights.

response

Accepted

comment

402

comment by: *Mario Tortorici*

in SPA.HEMS.130(d) (3) the wording shall be changed into:

*"All the following shall be taken into account for both day and night operations when deciding if a second pilot is needed instead of an HEMS technical crew member, and other crew requirements"*



response	<p>otherwise this requirement becomes not understandable now that in the proposed text it is no more linked to the definition of specific geographical areas where two pilots are not mandatory.</p> <p>Partially accepted Please refer to topics 'Crew composition' and 'HEMS risk assessments'.</p>
comment	<p>403 <span style="float: right;">comment by: <i>Mario Tortorici</i></span></p> <p>In SPA.HEMS.130(d)(1), to be consistent with the new wording of SPA.HEMS.130(d)(2) the wording shall be:</p> <p><i>(1) Day flight. The minimum crew by day shall be:</i>  <i>(i) two pilots; or</i>  <i>(ii) one pilot and one HEMS technical crew member</i>  ... </p>
response	<p>Accepted</p>
comment	<p>407 <span style="float: right;">comment by: <i>Mario Tortorici</i></span></p> <p>Given the flight safety issues typical of HEMS, we think appropriate to insert a new requirement equivalent to SPA.HOFO.145 to mandate a FDM also to HEMS operators for helicopters equipped with FDR..</p>
response	<p>Not accepted Please refer to topic 'Other additional equipment'.</p>
comment	<p>408 <span style="float: right;">comment by: <i>Mario Tortorici</i></span></p> <p>We fully support that in SPA.HEMS.125(a) the requirement for CAT A Helicopter, or equivalent, has been maintained, given the addition safety margins due to engine and systems redundancy in such helicopters.</p>
response	<p>Noted Please refer to topic 'Performance'.</p>
comment	<p>414 <span style="float: right;">comment by: <i>FNAM/SNEH</i></span></p> <p>SPA.HEMS.100  FNAM and SNEH are favourable to the use of NVIS. The use of this device remains impossible in France because of a regulation of the French government. However, we do not consider it necessary to make the use of NVIS for night operations on an unrecognized operating site mandatory.  French helicopter operators' techniques developed for a long time in cooperation with the ground rescue services make these operations reliable and safe. Additional constraints would lead to hinder those operations.  Indeed, during HEMS operations in France, especially on an accident scene, ground rescue services provide care to the patient before requesting the intervention of a helicopter to perform the transfer to a hospital. French operators are therefore working in cooperation with the ground rescue services to carry out the</p>

response	<p>reconnaissance and the securing of the operating site (markings, illumination) before helicopter landing.</p> <p>EASA must take into account national specificities such as French system ones. Indeed, unlike some other European countries, French helicopter operators are rarely first to the operating sites since they are mostly intended for hospital transfers. Moreover, operating site reconnaissance in flight before landing is systematically made while regular reconnaissance on the ground is impossible to set up and in some cases inefficient due to the impossibility of mastering the environment.</p> <p>The proposed amendment to the HEMS regulation is not adapted to hospital transfer operations. FNAM and SNEH therefore recommend to sustain the current HEMS regulation.</p> <p>Noted Please refer to topic 'NVIS'.</p>
comment	<p>426 <span style="float: right;">comment by: SAF</span></p> <p>SPA.HEMS.100</p> <p>SAF is favourable to the use of NVIS. The use of this device remains impossible in France because of a regulation of the French government. However, we do not consider it necessary to make the use of NVIS for night operations on an unrecognized operating site mandatory.</p> <p>French helicopter operators' techniques developed for a long time in cooperation with the ground rescue services make these operations reliable and safe. Additional constraints would lead to hinder those operations.</p> <p>Indeed, during HEMS operations in France, especially on an accident scene, ground rescue services provide care to the patient before requesting the intervention of a helicopter to perform the transfer to a hospital. French operators are therefore working in cooperation with the ground rescue services to carry out the reconnaissance and the securing of the operating site (markings, illumination) before helicopter landing.</p> <p>EASA must take into account national specificities such as French system ones. Indeed, unlike some other European countries, French helicopter operators are rarely first to the operating sites since they are mostly intended for hospital transfers.</p>
response	<p>Noted Please refer to topic 'NVIS'.</p>
comment	<p>438 <span style="float: right;">comment by: MBH SAMU</span></p> <p>SPA.HEMS.100</p> <p>HBG is favourable to the use of NVIS. The use of this device remains impossible in France because of a regulation of the French government. However, we do not consider it necessary to make the use of NVIS for night operations on an unrecognized operating site mandatory.</p> <p>French helicopter operators' techniques developed for a long time in cooperation with the ground rescue services make these operations reliable and safe. Additional constraints would lead to hinder those operations.</p> <p>Indeed, during HEMS operations in France, especially on an accident scene, ground rescue services provide care to the patient before requesting the intervention of a helicopter to perform the transfer to a hospital. French operators are therefore</p>



response	<p>working in cooperation with the ground rescue services to carry out the reconnaissance and the securing of the operating site (markings, illumination) before helicopter landing.</p> <p>EASA must take into account national specificities such as French system ones. Indeed, unlike some other European countries, French helicopter operators are rarely first to the operating sites since they are mostly intended for hospital transfers. Moreover, operating site reconnaissance in flight before landing is systematically made while regular reconnaissance on the ground is impossible to set up and in some cases inefficient due to the impossibility of mastering the environment.</p> <p>The proposed amendment to the HEMS regulation is not adapted to hospital transfer operations. HBG therefore recommends to sustain the current HEMS regulation.</p> <p>Noted Please refer to topic 'NVIS'.</p>
comment	<p>450 <span style="float: right;">comment by: <i>Oya Vendée Hélicoptères</i></span></p> <p>SPA.HEMS.100</p> <p>OYA is favourable to the use of NVIS. The use of this device remains impossible in France because of a regulation of the French government. However, we do not consider it necessary to make the use of NVIS for night operations on an unrecognized operating site mandatory.</p> <p>French helicopter operators' techniques developed for a long time in cooperation with the ground rescue services make these operations reliable and safe. Additional constraints would lead to hinder those operations.</p> <p>Indeed, during HEMS operations in France, especially on an accident scene, ground rescue services provide care to the patient before requesting the intervention of a helicopter to perform the transfer to a hospital. French operators are therefore working in cooperation with the ground rescue services to carry out the reconnaissance and the securing of the operating site (markings, illumination) before helicopter landing.</p> <p>EASA must take into account national specificities such as French system ones. Indeed, unlike some other European countries, French helicopter operators are rarely first to the operating sites since they are mostly intended for hospital transfers.</p> <p>Moreover, operating site reconnaissance in flight before landing is systematically made while regular reconnaissance on the ground is impossible to set up and in some cases inefficient due to the impossibility of mastering the environment.</p> <p>The proposed amendment to the HEMS regulation is not adapted to hospital transfer operations. OYA therefore recommends to sustain the current HEMS regulation.</p>
response	<p>Noted Please refer to topic 'NVIS'.</p>
comment	<p>470 <span style="float: right;">comment by: <i>Mario Tortorici</i></span></p> <p>in SPA.HEMS.130(d) (3), since the list is not linked anymore to the selection of specific geographical area and to avoid the misunderstanding that even if AFM requires two pilots you could fly HEMS operations with only one pilot and one technical crew member, new points (ix) and (x) shall be added:</p>



	<p>(ix) AFM limitations (x) helicopter features</p>
response	<p>Noted Compliance with the AFM limitations is mandated by Regulation (EU) 1139/2018 (the Basic Regulation) and does not need to be repeated in its implementing rules. Please refer also to topics 'Autopilots' and 'HEMS risk assessments'.</p>
comment	<p>471 <span style="float: right;">comment by: <i>Civil Aviation Authority of Norway</i></span> The proposed change to SPA.HEMS.100 (c) is supported.</p>
response	<p>Noted Thank you</p>
comment	<p>472 <span style="float: right;">comment by: <i>Civil Aviation Authority of Norway</i></span> Comment to SPA.HEMS.110: (d)(9) and (10) does not address the entire cockpit crew, the HEMS Technical Crewmember should also be subject to these conditions. Other crewmembers, if critical for flight safety, such as someone acting as hoist operator during hoisting, should be included.  Proposed text: (9) hypoxia training for all <del>pilots</del> <b>cockpit crew members</b> involved; (10) the absence of a medical condition that could lead to hypoxia, for the <del>pilots</del> <b>cockpit crew members</b> involved.</p>
response	<p>Accepted Please refer to topic 'Oxygen 3'.</p>
comment	<p>473 <span style="float: right;">comment by: <i>Civil Aviation Authority of Norway</i></span> Comment to SPA.HEMS.120: HEMS operating minima SPA.HEMS.120 (a)calls up the "HEMS specific weather minima". These are now in AMC. Is this an intentional change to allow operators and authorities to change them with AltMoCs?  (b) There appears to be no explanation or justification for the removal of additional limits for PC 3.</p>
response	<p>Noted Please refer to topics 'VFR minima' and 'Performance'.</p>
comment	<p>474 <span style="float: right;">comment by: <i>Civil Aviation Authority of Norway</i></span> Comment to SPA.HEMS.122:</p>





response	The proposal is supported in principle, but there is no explanation of why the SPO solution (+400'/1500m) was chosen over the HOFO one, the latter has been used in several states for decades.
response	Noted Please refer to topic 'Destination alternates'.
comment	476 <span style="float: right;">comment by: <i>Civil Aviation Authority of Norway</i></span> The proposed changes in SPA.HEMS.130 needs to be explained and justified.
response	Noted
comment	477 <span style="float: right;">comment by: <i>Civil Aviation Authority of Norway</i></span> Comment to SPA.HEMS. 130 (d)(1)(i)(B): The point should be removed.  Justification: Installation of strecher should not prevent HTCM from assisting the the pilot. This inappropriate configuration of the helicopter will lead to the removal of on of the most important measures for improving safety, namely a second crew member in the cockpit. This will significantly reduce the safetylevel.
response	Accepted
comment	478 <span style="float: right;">comment by: <i>Civil Aviation Authority of Norway</i></span> Editorial comment: The table referred to in SPA.HEMS.130 (d)(1)(ii) is deleted or moved.
response	Accepted Please refer to topic 'VFR minima'.
comment	479 <span style="float: right;">comment by: <i>Civil Aviation Authority of Norway</i></span> Comment to SPA.HEMS.130(d)(2)(iii): (TC not required in the cockpit for night flight) It is noted that the NPA proposes that care for the patient should take precedence over flight safety also for night flights. Whilst the partient care is important, it is the purpose of aviation safety regulation to reduce risk. And the text leaves the impression that the decision is taken by the medical passenger, not the Commander, which is unacceptable. There may always be the "commercial" pressure to assist in the cabin, but there should be no opening for allowing this as a normal practice at night or in IMC.  This is also not consistent with the guidelines in GM2 SPA.NVIS.130(e), item (c)
response	Accepted Please refer to topic 'Crew composition'.
comment	480 <span style="float: right;">comment by: <i>Mario Tortorici</i></span>



in SPA.HEMS.120(c) the reference to SERA.5005 seems not appropriate when dealing with operations in third countries since HEMS operations could be conducted also out of the European Union in accordance with the approved area of operations specified in the AOC Operations Specifications.

The current wording for a similar requirement in SPA.HEMS.130(e)(ii) (current Reg. 965/2912 text) use the wording "*applicable airspace requirements*".

Art. 1 of Part SERA states that SERA Regulation shall apply in particular to airspace users and aircraft engaged in general air traffic bearing the nationality and registration marks of a Member State of the Union, and operating in any airspace to the extent that they do not conflict with the rules published by the country having jurisdiction over the territory overflown.

It is not clear how the conflict shall be solved, both when the operator shall use HEMS minima and when it shall use the minima defined in SERA.5005.

We propose to clarify that in any case if local minima are more restrictive they shall be used.

response Accepted  
Please refer to topic 'VFR minima'.

comment 481 comment by: *Civil Aviation Authority of Norway*

Comment to SPA.HEMS.130(d)(3)(ii):  
The change to new terminology using 'flight tracking' has left out two vital elements of a flight following system. It is represented in the definition of an 'aircraft tracking system' as: "identify abnormal flight behaviour and provide alert". This needs to be included.

response Accepted

comment 496 comment by: *Mario Tortorici*

in SPA.HEMS.120(a) and in SPA.HEMS.120(c), the use of terms "*weather minima*" and "*ceiling and visibility minima*" is not consistent with the title of the requirement and with AMC1 SPA.HEMS.120(a) that deals also with separation from obstacles.

Therefore the term "*operating minima*" shall be used in both points.

Otherwise the AMC1 SPA.HEMS.120(a) would have no legal basis when dealing with separation from obstacles and night VFR flights with a very low separation from obstacles would be not mitigated by the presence of a second pilot or a qualified technical crew member.

Please note also that in the AMC the term "*shall*" is used while normally in AMC only "*should*" is used.

response Partially accepted  
Please refer to topic 'VFR minima'.



comment	498	comment by: <i>Bell Helicopter Textron Inc</i>
	Sub-item "(e)" on page 30: Per the wording, what would make a stability augmentation system or AFCS " <u>unsuitable</u> " for single-pilot operations at night ?	
response	Noted Please refer to AMC1 SPA.HEMS.130(e). It defines the suitability of the stability augmentation system or AFCS.	
comment	499	comment by: <i>Bell Helicopter Textron Inc</i>
	Sub-item "7.(cd)" on page 32: Previous wording of requirement seemed OK ... Concept of " <u>prior</u> " training is now very vague. What is the intent ?	
response	Accepted	
comment	500	comment by: <i>Bell Helicopter Textron Inc</i>
	Sub-item "7.(de)(1)(ii)" on page 33: The reference to Table 1 of <b>SPA.HEPS.120</b> is odd considering that this table is planned to be removed (see pages 30 & 31). But a new & similar proposed Table 1 is shown on page 40, under <b>AMC1 SPA.HEMS.120(a)</b> ... (along with proposed Tables 2 and 3).	
response	Accepted	
comment	530	comment by: <i>DHV e.V.</i>
	SPA.HEMS.110(d)(9) "(9) hypoxia training for all pilots involved;"  We do not expect that high altitude chamber testing is necessary to achieve the necessary competency. Therefore, we propose the following amendment:  "(9) <u>Theoretical</u> hypoxia training for all pilots involved;"	
response	Not accepted Please refer to topic 'Oxygen 3'.	
comment	531	comment by: <i>DHV e.V.</i>
	SPA.HEMS.120(c)  The decision should be at the discretion of the PIC. Especially critically ill/injured patients could not be flown from the HEMS operating site to a medical centre if the patient requires both doctor and THCM in the cabin for the treatment. Also, HHO/HEC operations would not be possible after the THCM changed to the hoist operator or HEC position/seat.  We propose the following amendment:	



response	<p>"(c) For single-pilot operations, the ceiling and visibility minima defined in point SERA.5005 shall apply unless the technical crew member is seated in the front seat and is suitably qualified. Any deviation from the requirement of the technical crew member being seated in the front seat due to specific medical or operational reasons is at the discretion of the PIC."</p> <p>Noted Please refer to topic 'TCM seating'.</p>
comment	<p>536 <span style="float: right;">comment by: <i>Civil Aviation Authority of Norway</i></span></p> <p>Comment to a new SPA.HEMS.105 See our general comment.</p> <p>We propose not to include this as a HEMS operation. That does not preclude such operations being performed by a properly equipped and trained HEMS helicopter and crew. But not as HEMS.</p> <p>There may possibly not be anything materially wrong with these requirements, but that has not been much discussed in the NPA. The competence and equipment, in the context of a HEMS operation, is different from a SPO.HEC context where underslung operations are a daily routine and the crews are normally highly experienced in this or similar operations.</p> <p>We maintain that this should be kept as a SAR operation for now, until the time when this has been thoroughly assessed and mitigated so that HEC operations perhaps could be considered CAT, and perhaps added as a SPA.HEC similar to SPA.HHO.</p> <p>Proposal: Delete the new SPA.HEC.105 (and associated AMC and other references to HEMS HEC)</p>
response	<p>Noted Please refer to topic 'Definition and scope of HEMS and HEMS HEC'.</p>
comment	<p>537 <span style="float: right;">comment by: <i>Civil Aviation Authority of Norway</i></span></p> <p>Comment to SPA.HEMS.110(e): The requirement to fit stability augmentation system or autopilot for single pilot night operations is supported. It should be considered if this should not be lifted to become a requirement for all types of SP night operations, by including 'night' in the scope of CAT.IDE.H.135.</p>
response	<p>Not accepted Please refer to topic 'Autopilots'.</p>
comment	<p>539 <span style="float: right;">comment by: <i>Civil Aviation Authority of Norway</i></span></p> <p>Comment to SPA.HEMS.110: The variations for oxygen requirements have been much discussed over the years. What has been missing, and which is also not very prevalent in this NPA, is medical</p>



	evidence and guidance to support these, very possibly sensible, adjusted requirements
response	Noted Please refer to topic 'Oxygen 3'.

**3. Proposed amendments and rationale in detail — 3.10. Draft acceptable means of compliance and guidance material to Part-SPA (draft EASA decision)**

p. 34-55

comment	15	comment by: <i>FOCA Helicopter Operations</i>
	<p><b>3.10. Draft acceptable means of compliance and guidance material to Part-SPA (draft EASA decision)</b></p> <p><b>7. AMC1 SPA.HEMS.120(a) is added as follows: AMC1 SPA.HEMS.120(a) HEMS operating minima, Table 1, page 40</b>  <i>"(...) visibility reduced to 3000m when operating with NVIS."</i></p> <p><b>Disagreement:</b> Due to the possible failure of pilot's NVIS equipment, operations shall not be conducted below the VFR weather minima.</p> <p><b>Proposal:</b> No change to the actual requirements regarding the NVIS operating minima.</p>	
response	Noted The NPA did not propose any change to the NVIS minima; it only proposed the increase of the non-NVIS minima. Please refer to topics 'VFR minima' and 'NVIS'.	
comment	17	comment by: <i>FinnHEMS Oy</i>
	<p>FinnHEMS proposes a new chapter to be added to enable the use of predetermined and surveyed VFR-night low level routes to be used when the helicopter is properly equipped and crew trained:</p> <p><b>REDUCED VFR MINIMA TO BE USED WHEN FLYING VFR LOW LEVEL ROUTES</b></p> <p>The operator may define Night (NVIS) HEMS operating minimas as low as ceiling 800ft and visibility 3000m when flying predetermined and surveyed VFR low level routes. These PinS-routes must be loudable directly from FMS and they must be flown coupled to autopilot.</p> <p>The applicable minima, the flight crew training and the methods for continuous survey of the obstacles along the route shall be published in the operations manual.</p>	
response	Not accepted Please refer to topic 'VFR minima'.	
comment	28	comment by: <i>FOCA Helicopter Operations</i>
	GM 1 SPA.HEMS.100(a): It is unclear what a "crisis situation" is (state of emergency?).	



response	Noted Please refer to topic 'GM1 SPA.HEMS.100'.
comment	29 <span style="float: right;">comment by: FOCA Helicopter Operations</span> (d) Additional mountain-specific considerations  Paragraph 2:  As mentioned in previous comments: In general not proportional nor in the public interest.
response	Noted Please refer to topics 'GM1 SPA.HEMS.100' and 'Performance'.
comment	30 <span style="float: right;">comment by: FOCA Helicopter Operations</span> (d) Additional mountain-specific considerations  Paragraph 3:  As mentioned in previous comments: In general not proportional nor in the public interest.
response	Noted Please refer to topics 'GM1 SPA.HEMS.100' and 'Performance'.
comment	34 <span style="float: right;">comment by: AIRBUS HELICOPTERS</span> <u>GM1 SPA.HEMS.100(a) HEMS operations - THE HEMS PHILOSOPHY:</u>  <u>§ (d) Additional mountain-specific considerations:</u>  It is proposed the following modifications:  <i>In order to enable HEMS operations at all altitudes, HEMS operations under performance class 3 have been authorised under the following conditions: operations over a hostile environment should only be conducted when a HEMS operating site used for take-off, landing or HEMS HEC operations is located above 10 000 ft density altitude <del>and with a helicopter certified as category A or equivalent as defined by the Agency</del>, in order to attract the same CAT <del>HEMS</del> alleviations at the HEMS operating site.</i>  <i><del>The use of category A or equivalent helicopters improves safety during the entire mission, not only in respect of risk of engine failure, but also because of the available system redundancies. Moreover, such helicopters are more suitable for equipment such as HTAWS, autopilot, flight director, IFR capabilities, etc., that are important mitigations measures to reduce the risk of loss of reference, collision with obstacles, and loss of control in flight.</del></i>  <u>New proposed text:</u>

***In addition these HEMS operations under performance class 3 at high altitudes should either use a helicopter certified as category A (or equivalent to category A as defined by the Agency) in accordance with AMC SPA.HEMS.125(a) or other types of helicopters (as single-engined helicopters) provided the State has defined an alternate Means of Compliance.***

Rationale:

- 1) consistency with Airbus Helicopters's comments n° 32 on SPA.HEMS.125(a), and with comment n° 33.
- 2) 'CAT HEMS' regulations do not exist but only 'SPA HEMS'; moreover we understand that referred alleviations are the ones in CAT.POL.H.400 (c) (operations without an assured safe forced landing capability).

response

Noted  
Please refer to topics 'GM1 SPA.HEMS.100' and 'Performance'.

comment

35 comment by: AIRBUS HELICOPTERS  
GM1 SPA.HEMS.100(a) HEMS operations - THE HEMS PHILOSOPHY:

§ (e) Air ambulance:

It should be clearer to write: '**Regarding rescue operations other than SAR**' rather than '*Regarding other than SAR rescue operations*', which could be read as '*Regarding other than (SAR rescue operations)*'. Indeed it is important to clearly understand that the HEMS concept is extended, but deals with rescue operations.

response

Noted  
Please refer to topic 'GM1 SPA.HEMS.100'.

comment

46 comment by: Luxembourg Air Ambulance

AMC1	SPA.HEMS.130(a)	Crew	requirements
HEMS	COMMANDER	MINIMUM	EXPERIENCE

The minimum experience level for the commander who conducts HEMS flights should not be less than:

.....  
(c) for pilots engaged in night operations, ~~50 hours-~~ 30 hours of VMC at night or 30 hours of IMC day or night according to IR including 20 hours as pilot-in-command/commander of VMC at night or of IMC day or night according to IR on a helicopter or in an FSTD.

**Justification:** In the past HEMS operators were able to recruit night experienced pilots from military services. This source will run almost dry in the future. Pilots with a civilian background very often do not have a chance to build up 50 hours of night VMC/VFR experience as the majority of helicopter operations is still day operation. Out of past experience we believe that our proposal above will not lower the safety margin. Advantage should be taken out of night training in FSTD.



response Partially accepted  
Please refer to topic 'Flight crew training'.

comment 47 comment by: Luxembourg Air Ambulance

**AMC1 SPA.HEMS.130(d) Crew requirements**  
REGENCY

.....

(g) The instrument flight training may take place in a helicopter using vision-limiting devices such as goggles or screens, or in an FSTD, which does not need to be type specific. The helicopter used for the training should be the helicopter type used in the HEMS operation. The helicopter is not required to be certified for IFR operations.

**Justification:** FSTDs are not available for all types of HEMS helicopters. But experience proves that a thorough IMC training in any type of certified FSTD (not type specific) is more effective than just using vision limiting devices in a helicopter for the training.

response Partially accepted  
Please refer to topic 'Flight crew training'.

comment 49 comment by: Luxembourg Air Ambulance

AMC1 SPA.HEMS.105 HEMS HEC operations

*(f) A pilot involved in HEMS HEC operations should be trained and experienced as defined in paragraphs (b) and (d) of AMC1 SPO.SPEC.HEC.100.*

You may have received the same comment from Norsk Luftambulanse AS, Andreas Hjert.

**AMC1 SPO.SPEC.HEC.100, (d) (2) (ii) (C)** requires HESLO type 1 or 2 completed before completing training. To the best of our knowledge, most operators/crews that are presently performing HEC would have to meet the requirements for HESLO 2 given the typical length of the cargo sling. To do that, the combined hours and HESLO cycles of flight instruction would be 7 (5 hours for HESLO 1, 2 hours for HESLO 2) and 70 cycles (50 cycles for HESLO 1 and 20 cycles for HESLO 2). In addition, before acting unsupervised, the pilot must have (under supervision) 13 hours (8 hours for HESLO 1 and 5 hours for HESLO 2) and 130 cycles (80 HESLO cycles for HESLO 1 and 50 cycles for HESLO 2). This totals 20 hours and 200 cycles of training and supervision. On top of that, there must be 10 HESLO missions (5 for HESLO 1 and 5 for HESLO 2).

**AMC1 SPO.SPEC.HEC.100, (d) (2) (iii) (C) (iii)** requires that the flight instruction and supervision is performed by a HESLO instructor and that it should take place during HESLO missions. Here it must be noted that the following text is included:

*"For the purpose of this AMC, a HESLO mission is defined as a flight or series of flights from point A to point B on a particular day and for commercial specialized operations, for a particular client."*





This would then preclude that the necessary HESLO missions could be simulated.

**AMC1 SPO.SPEC.HEC.100, (d) (5) (ii) (C)** sets requirements on the HEMS HEC instructor, and those requirements are not problematic, we believe, but the requirements for a HESLO instructor **AMC1 SPO.SPEC.HESLO.100 (f) (i)** are.

The minimum experience level for a HESLO instructor are among other things 500 hours of HESLO and to have attended the 'teaching and learning' part of the flight instructor or type rating instructor training, or have prior experience as an aerial work instructor subject to national rules. The teaching and learning part is not an issue, but the 500 hours of HESLO experience can be very difficult to meet for, we believe, the bulk of the European HEMS operators apart from operators from alpine countries (i.e. Switzerland and Austria) where helicopters are used en masse for sling load and pilots with ample sling load experience are easy to come by.

### Concern

Given these requirements, and provided that our interpretation and assumptions are correct, it may be quite difficult for many HEMS operators in Europe that presently also perform rescue operation by means of HEC Cargo Sling Operations, to (1) recruit suitable personnel that are also experienced enough for HEC and when not (2) to train them within a realistic personnel resource and economic framework. Furthermore, we do believe that many HEMS operators would struggle to find instructors that have 500 hours of HESLO experience. Again, the latter probably does not apply to countries where sling load operation is performed en masse. While the requirements make very good sense for countries with complex environment and mission profiles, my concern is that the requirements are too high for countries where the nature of the activity is rather simple and have rather low complexity.

The issue could have a safety implication as some operators might not be able to recruit/employ the most suitable pilots for their (HEMS) operation. This could example be that rather than employing pilots with the right experience in IFR, NVIS, SAR or other relevant experience for HEMS as preferred by the operator, are forced to recruit pilots with the sufficient underslung operation experience (to meet the new regulation) instead.

### Small example from NLA

NLA in Norway have performed underslung rescue operation since 1978 and performed HEC Cargo Sling Operations since 2008. The HEC Cargo Sling Operations is performed during day (i.e. not darkness) only. The nature and complexity of the activity is rather simple and have a low complexity. The initial and recurrent training program and requirements, that has served NLA well over the years, is not small but not close to the new requirements (considering HESLO 1 and HELSO 2 training, supervision and instructor requirements). While most crews typically practice 25-50 minutes/5-10 cycles every work week, the live missions are very few. The typical average live HEC Cargo Sling Operations mission for an NLA pilot is 0.6 missions per year. Given the 'live' missions part of the supervision (if my interpretation is correct), and if employing a pilot with very little or no underslung/HESLO 1/HESLO 2 experience (say some one recruited from the Air force or the offshore industry), that pilot would have to be in NLA for roughly 15 years before he/she could be left



unsupervised... Or to be sent to an SPO operator and get training through their organization (and perhaps type of helicopter) to meet the requirement... I am not sure that all this is necessary for a safe operation.

**Suggestion**

We suggest the following:

- That the HESLO mission defined, **AMC1 SPO.SPEC.HEC.100, (d) (2) (iii) (C) (iii)** can be performed on representative simulated missions.
- That for HEMS HEC, the experience, training, supervision and instructor experience requirements for HESLO 1 and HELSO 2 is not necessary and that the experience, training, supervision and instructor experience should be based on the nature and complexity of the activity.

Obviously, risk analysis by the operator and approval by the authority would anyhow be required. If there needs to be minimum flight training requirements included in the suggestion, we suggest recommended minimum of 7 hours of flight training including certain subjects/task as below, however you may have better suggestions (regardless, these are minimum recommended requirements):

Item	Subject Area (as applicable)	Subject Details	Rec Time
1	Choosing a reference points	<ul style="list-style-type: none"> <li>• Steady over selected point</li> <li>• Different heights</li> <li>• 360-degree pedal turns</li> <li>• Climb/descend</li> </ul>	1 hour
2	Walking the helicopter – 1	<ul style="list-style-type: none"> <li>• Level field</li> <li>• Technical crew member moves at walking speed and predetermined track holding the line</li> <li>• Incline and decline</li> <li>• Delivering load opening in forrest/woods/foilage</li> </ul>	1 hour
3	Experiencing others (instructor)	Occupy co-pilot seat during HEC Cargo Sling Operations	1 hour
4	Practicing the approach angle	Different rope lengths	1 hour
5-7	Flying with human cargo	Open Field High Trees Improved Precision	1 hour
		Mountain Ledge	1 hour



		Water	1 hour
	<b>TOTAL TRAINING TIME</b>		<b>7 hours</b>
	<ul style="list-style-type: none"> <li>Regardless, a clarification whether the HEMS HEC instructor must meet the minimum experience level for a HESLO in <b>AMC1 SPO.SPEC.HESLO.100 (f) (i)</b> or if the instructor requirements required in <b>AMC1 SPO.SPEC.HEC.100, (d) (5) (ii) (C)</b> when performing training to qualify a pilot for HESLO 1 and HESLO 2.</li> </ul>		
response	Not accepted Please refer to topic 'HEMS HEC'.		

comment	69	comment by: <i>Aersud Elicotteri</i>
	Please add to AMC1 SPA.HEMS.120(d) "(e) Crew Resource Management CRM training"  This training is really important if well performed and with all the people involved in the mission. A well performed CRM course is able to improve the skills of the crew. So is really important to improve CRM courses, not allowing an "easy" online training and involving all the crew: pilot, HEMS technical member, medical crew, hoist operator.	
response	Noted Please refer to topic 'TCM training'. Refer also to EASA Opinion No 02/2021 <sup>15</sup> .	

comment	70	comment by: <i>Aersud Elicotteri</i>
	AMC1 SPA.HEMS.130(e) (a) (3)  Proposed modification:  (3) "the flight is conducted to or from a HEMS operating site <u>located at short distance</u> ;"  as reported by Italian National Aviation Authority ENAC in NI-2018-005, art. 5.	

<sup>15</sup> Opinion 02/2021 *All-weather operations and review of crew training requirements* (<https://www.easa.europa.eu/document-library/opinions/opinion-022021>).



	<p>Who assist the pilot in the cockpit from the base to the HEMS or HHO site? It's necessary to specify that the HEMS Technical Crew Member may be seated in the cabin for HHO operation only after the helicopters arrived to the HEMS operating site. During the flight from the base, the HEMS technical crew member shall assist the pilot as specify in the other points of the AMC.</p> <p>Only after the helicopter arrived to the operating site the HEMS Technical Crew Member can move to the cabin to perform the hoist operation.</p> <p>When the helicopter leaves the operating site with the patient on board, the HEMS Technical Crew Member must be in the cockpit in order to assist again the pilot. This is important in particular in case of low visibility flight.</p> <p>The reconfiguration of the aircraft can be done with a base camp near the Hems operating site.</p>
response	<p>Noted</p> <p>Please refer to topics 'VFR minima' and 'TCM seating'.</p>
comment	<p>96 <span style="float: right;">comment by: UK CAA</span></p> <p><b>Page No:</b> 39</p> <p><b>Paragraph No:</b> 3.10, sub-paragraph 3(g)</p> <p><b>Comment:</b> It is not clear why the HEMS HEC check should be done every 2 years instead of annually. We recommend this check should be aligned with other checks in accordance with ORO.FC.230.</p> <p><b>Justification:</b> Alignment of checks and proficiency.</p> <p><b>Proposed Text:</b></p> <p>(g) A pilot involved in HEMS HEC operations should complete a flight check at least <del>every 2 years</del> <b>annually</b> to demonstrate competence in carrying out HEMS HEC operations. The checking may be combined with the line check or with a HEC training flight.</p>
response	<p>Accepted</p>
comment	<p>97 <span style="float: right;">comment by: UK CAA</span></p> <p><b>Page No:</b> 39</p> <p><b>Paragraph No:</b> 3.10, sub-paragraph 4</p> <p><b>Comment:</b> An editorial suggestion is proposed below to provide an appropriate level of compliance.</p> <p><b>Justification:</b> Proportionality</p> <p><b>Proposed Text:</b></p>

response	<p>MOVING MAP DISPLAYS A moving map display may be <b>at least</b> any of the following:</p> <p>Not accepted Not needed. Please refer also to topic 'Moving maps'.</p>
comment	<p>98 <span style="float: right;">comment by: UK CAA</span></p> <p><b>Page No:</b> 39</p> <p><b>Paragraph No:</b> 3.10, sub-paragraph 5</p> <p><b>Comment:</b> It is considered that the operator should seek expert medical guidance when determining conditions and limitations for individuals to fly at high altitudes without supplementary oxygen.</p> <p><b>Justification:</b> Safety of operations and personnel.</p> <p><b>Proposed Text:</b></p> <p>SHORT EXCURSIONS ABOVE 13 000 FT WITHOUT OXYGEN If the operator or an individual crew member has no experience in flying without oxygen above 13 000 ft, then the operator should set, based on a risk assessment, operating conditions or individual limitations for crew members to progressively gain experience and adapt to altitude. <b>The operator should seek appropriate expert medical guidance when setting such conditions or limitations</b></p>
response	<p>Noted Medical aspects are already part of the risk assessment and the initial training. Please refer also to topic 'Oxygen 3'.</p>
comment	<p>99 <span style="float: right;">comment by: UK CAA</span></p> <p><b>Page No:</b> 39</p> <p><b>Paragraph No:</b> 3.10, sub-paragraph 6</p> <p><b>Comment:</b> The CAA supports the intention to require suitable SAS or autopilot equipment for single-pilot night operations, but as previously commented against paragraph 3.9, 3(e) believes this should be achieved by amending CAT.IDE.H.135 to include both IFR and night conditions. This would enhance the safety of all CAT operations and reflects that which has been required by the UK for public transport operations (including JAR-OPS 3 operations) for over 15 years following fatal accident safety recommendations.</p> <p><b>Justification:</b> Improvement in safety standards for all CAT single-pilot IFR and night operations and standardisation of equipment.</p>
response	<p>Not accepted Please refer to topic 'Autopilots'.</p>

comment	<p>100</p> <p style="text-align: right;">comment by: UK CAA</p> <p><b>Page No:</b> 39/40</p> <p><b>Paragraph No:</b> 3.10, sub-paragraph 7</p> <p><b>Comment:</b> As has been commented on previously, we believe the “HEMS operating minima” needs to be moved back under SPA.HEMS.120 as a rule and not AMC. These are specific minima which all operators should abide by in order to retain an acceptable level of safety performance whilst conducting HEMS, and are generally below the requirements set out in SERA.</p> <p><b>Justification:</b> The minima should be laid down in a rule and not left as AMC in operations already subject to wider alleviation than pure CAT and SERA.</p>
response	<p>Not accepted</p> <p>Please refer to topic ‘VFR minima’.</p>

comment	<p>101</p> <p style="text-align: right;">comment by: UK CAA</p> <p><b>Page No:</b> 40</p> <p><b>Paragraph No:</b> 3.10, sub-paragraph 7, Table 1</p> <p><b>Comment:</b> <u>Cloud ‘ceiling’ is defined in SERA as:</u></p> <p><i>‘Ceiling. Means the height above the ground or water of the base of the lowest layer of cloud below 6 000 metres (20 000 feet) covering more than half the sky.’</i></p> <p>It should be recognised that, with any ceiling there exists a probability that there will be cloud below the forecast, or observed, level and it will not be possible to sustain the specified in-flight visibility unless ‘clear of cloud’. This is accounted for in SERA.5001 by the stipulation that the aircraft remains ‘clear of cloud and with the surface in sight’. It might be necessary to add a ‘note’ to the visibility column making this stipulation.</p> <p>The ceiling is a dispatch criteria for the departure site (arrival site). Unless the departure site exists on a hill, the en-route VFR operating minima (established below) of 300ft will not be met. There should be a note in the AMC indicating that observance of the minimum levels of flight would be difficult, in the required visibility. (This is especially the case when the en-route ceiling is given with reference to AMSL.)</p> <p>NVIS criteria is a matter for the NVIS SPA approval and might cause confusion here if not cross-referenced in SPA.NVIS.</p> <p><b>Justification:</b> Clarity of intent and purpose.</p>
response	<p>Partially accepted</p> <p>Please refer to topic ‘VFR minima’.</p>



comment	<p style="text-align: right;">comment by: UK CAA</p> <p><b>102</b></p> <p><b>Page No:</b> 40</p> <p><b>Paragraph No:</b> 3.10, sub-paragraph 7, Table 1, Day, Ceiling 499-300 ft</p> <p><b>Comment:</b> With the minimum separation height of 300 ft as proposed in HEMS VFR MINIMA: DISTANCE TO OBSTACLES, we believe this ceiling is too low. The minimum ceiling should be 500 ft to ensure the aircraft remains clear of cloud and in sight of the surface with the necessary visibility and separation.</p> <p><b>Justification:</b> Maintenance of adequate safety margins for CAT/HEMS in realistic situations.</p> <p><b>Proposed Text:</b></p> <p>Amend DAY Ceiling to two categories: Above 500 ft, and 500 ft.</p>
response	<p>Noted Please refer to topic 'VFR minima'.</p>
comment	<p style="text-align: right;">comment by: UK CAA</p> <p><b>103</b></p> <p><b>Page No:</b> 40</p> <p><b>Paragraph No:</b> 3.10, sub-paragraph 7, Table 1, Night</p> <p><b>Comment:</b> Whilst the introduction of NVIS and Non-NVIS minima here is understood, there is a possibility of confusion arising with SPA.NVIS and the various approvals. We recommend that this is reviewed and if necessary resolved.</p> <p>However, there should in fact be no difference between with and without NVIS, as no specific credit should be allowed for the use of NVIS as if a failure occurred, for instance, the pilot must be able to continue safely unaided. This anyway is part of the NVIS approval, not HEMS, and we believe deserves further consideration and justification.</p> <p><b>Justification:</b> Alignment with other regulations and clarity of purpose.</p>
response	<p>Noted Please refer to topics 'VFR minima' and 'NVIS'.</p>
comment	<p style="text-align: right;">comment by: UK CAA</p> <p><b>105</b></p> <p>Attachment <a href="#">#6</a></p> <p><b>Page No:</b> 40</p> <p><b>Paragraph No:</b> 3.10, sub-paragraph 7, Table 2</p> <p><b>Comment:</b> The table is not entirely clear with the intended distances and it is suggested that the presentation could be improved as proposed below.</p>

response	<p><b>Justification:</b> Clarity</p> <p><b>Proposed Text:</b> Please see the attached Pdf.</p> <p>Noted Please refer to topic 'VFR minima'.</p>
comment	<p>106 <span style="float: right;">comment by: UK CAA</span></p> <p>Attachment <a href="#">#7</a></p> <p><b>Page No:</b> 41</p> <p><b>Paragraph No:</b> 3.10, sub-paragraph 7, Table 3</p> <p><b>Comment:</b> Similarly to UK CAA comment on Table 2, it is suggested that Table 3 could be improved as proposed below.</p> <p><b>Justification:</b> Clarity</p> <p><b>Proposed Text:</b> Please see the attached Pdf.</p>
response	<p>Noted Please refer to topic 'VFR minima'.</p>
comment	<p>107 <span style="float: right;">comment by: UK CAA</span></p> <p><b>Page No:</b> 41</p> <p><b>Paragraph No:</b> 3.10, sub-paragraph 7 (a) &amp;(b), HEMS VFR MINIMA: DISTANCE TO OBSTACLES</p> <p><b>Comment:</b> Sub-paragraphs (a) and (b) both set prescribed minima and should be in the rule and not AMC; indeed, they state that operations "shall only be performed".</p> <p>Additionally, the text of sub-paragraph (a) reflects SERA.5005(f)(1) but is not quite the same, which could introduce confusion, and sub-paragraph (b) seems to conflict with SERA.5005(c)(5) with regards to State minima which is still applicable. Where a distance is mentioned in feet, it should also be referenced in metres for consistency (300 ft for instance). The safety requirements of SERA.3105 in respect of not permitting undue hazard are still applicable and in some States additional requirements such as not allowing take-offs or landings in a congested area without prior CA approval needs to be recognised.</p> <p>Maintaining continuous sight of the surface is also a necessary factor and should be highlighted.</p> <p>Another factor that should be captured, especially for this proposal, is operations in the mountains and any additional safety margins that should be applied. SERA.5005 again refers to mountain operations at (c) and these should be considered.</p>





response	<p><b>Justification:</b> Consistency and clarity.</p> <p>Noted Please refer to topic 'VFR minima'.</p>
comment	<p>108 <span style="float: right;">comment by: UK CAA</span></p> <p><b>Page No:</b> 42</p> <p><b>Paragraph No:</b> 3.10, sub-paragraph 11</p> <p><b>Comment:</b> The AMC reference needs alignment with the correct sub-paragraph of SPA.HERMS.125 and should be shown as '(c)(4)'.</p> <p>Sub-paragraph (a) as revised restates the safety objective of SPA.HERMS.125(c) and is considered not helpful. We believe the previous text should be retained and modified as shown below along with a new sub-paragraph (b) for NVIS operations. The illumination requirements listed on Page 45 should be added to this AMC as a sub-section of AMC1 SPA.HERMS.125(c)(4) and will be proposed separately.</p> <p><b>Justification:</b> Accuracy and improved means of compliance to ensure adequate levels of safety are maintained and not lost.</p> <p><b>Proposed Text:</b> Amend to:</p> <p><b>AMC1 SPA.HERMS.125(<del>bc</del>)(4) Performance requirements for HERMS operations</b></p> <p>HERMS OPERATING SITE DIMENSIONS</p> <p>(a) <b><i>When selecting a HERMS operating site, it should be of sufficient size, shape and clear of obstacles to provide for safe operations and have a minimum dimension of at least 2 x D (the largest dimensions of the helicopter when the rotors are turning).</i></b></p> <p>(b) <b><i>For night operations with NVIS, un-surveyed HERMS operating sites should have dimensions of at least 4 x D in length and 2 x D in width.</i></b></p> <p><del>(b) For night operations, the illumination may be either from the ground or from the helicopter.</del> Covered by new AMC/GM</p> <p><del>(c) For night operations without NVIS, the pre-surveyed HERMS operating site dimensions should be at least 2 x D. Incorporated in (a) already.</del></p>
response	<p>Partially accepted Please refer to topic 'HERMS operating site dimensions'.</p>
comment	<p>109 <span style="float: right;">comment by: UK CAA</span></p> <p><b>Page No:</b> 43</p>



**Paragraph No:** 3.10, sub-paragraph 14, Heading and (f)

**Comment:** The Heading does not refer to the correct regulation sub-paragraph number and should be amended as shown below.

We believe the sub-heading "REGENCY" is now redundant and should be deleted.

At sub-paragraph (f) it is suggested that a currency requirement for the IR is introduced to ensure appropriate qualification for meeting training standards.

**Justification:** Accuracy and necessary qualifications.

**Proposed Text:**

**AMC1 SPA.HEMS.130(d) Crew requirements**

~~REGENCY~~

(f) The instrument training should be conducted by a FI/TRI/SFI **holding a current IR** and should be sufficient for the pilot to demonstrate competence in the following manoeuvres:

response

Not accepted  
Please refer to topic 'Flight crew training'.

comment

110

comment by: UK CAA

**Page No:** 44

**Paragraph No:** 3.10, sub-paragraph 15, Heading and (a)(4) & (5)

**Comment:** The Heading does not refer to the correct regulation sub-paragraph number and should be amended as shown below.

At sub-paragraph (a)(4), it is not clear who is responsible for any "risk assessment" and it is recommended that this is clarified to ensure consistency and safety.

At sub-paragraph (a)(5) the statement "the commander decides so" is not a clear statement as such and it is recommended that the leading paragraph is revised as shown below, including other minor changes and sub-paragraph (5) is deleted.

**Justification:** Clarification and assignment of responsibilities to ensure safety performance is met.

**Proposed Text:**

**AMC1 SPA.HEMS.130(d) Crew requirements**

(a) When the crew is composed of one pilot and one HEMS technical crew member, the latter should be seated in the front seat (co-pilot seat) during the flight. However, the HEMS technical crew member may be seated in the cabin **at the**



**discretion of the commander, and in accordance with procedures in the operations manual** if all of the following conditions are met:

- (1) the HEMS technical crew member is also an HHO technical crew member;
  - (2) the helicopter is equipped with a hoist;
  - (3) the flight is conducted to or from a HEMS operating site; **and**
  - (4) a risk assessment (**by whom?**) determines that the technical crew member can carry out his or her primary tasks from the cabin; this risk assessment may determine that the rear door(s) needs (need) to remain open for better visibility **if the RFM permits such operation.**
- ~~(5) the commander decides so.~~

response Partially accepted  
The elements of the proposal that are a duplication of other regulations have not been accepted.

comment 111 comment by: UK CAA

**Page No:** 45

**Paragraph No:** 3.10, sub-paragraphs 17 and 18

**Comment:** It is not clear why the AMC and GM which refer to Illumination of HEMS operating sites are linked to SPA.HEMS.130 which is to do with Crew Requirements. This may be a formatting error but it is recommended that the two be aligned and suitably merged with AMC1 SPA.HEMS.125(c)(4) as previously mentioned. This then would bring together the lighting as indicated under SPA.HEMS.125(c)(4).

**Justification:** Correctness and consistency

response Partially accepted

comment 112 comment by: UK CAA

**Page No:** 47

**Paragraph No:** 3.10, sub-paragraph 20, Heading and references

**Comment:** The Heading does not refer to the correct regulation sub-paragraph numbers and should be amended as shown below. An amendment to the heading is also proposed.

**Justification:** Accuracy

**Proposed Text:** Amend to:

**HEMS TECHNICAL CREW MEMBER TRAINING AND CHECKING SYLLABUS**

**INITIAL AND RECURRENT TRAINING COVERING PRIMARY TASKS**



response	<i>(as defined in AMC2 1 SPA.HEMS.130(ed), paragraph (b), in SPA.HEMS.130(fe)(2) and in SPA.HEMS.155)</i>
response	Partially accepted
comment	<p>113</p> <p style="text-align: right;">comment by: UK CAA</p> <p><b>Page No:</b> 48</p> <p><b>Paragraph No:</b> 3.10, sub-paragraph 20(b)</p> <p><b>Comment:</b> An amendment to the reference is proposed below to correctly align the material.</p> <p><b>Justification:</b> Accuracy</p> <p><b>Proposed Text:</b></p> <p>NAVIGATION TRAINING <i>(as defined in AMC1 SPA.HEMS.130(ed), paragraph (b)(1) and (b)(2) (navigation))</i></p>
response	Partially accepted
comment	<p>114</p> <p style="text-align: right;">comment by: UK CAA</p> <p><b>Page No:</b> 49</p> <p><b>Paragraph No:</b> 3.10, sub-paragraph 20 (c)</p> <p><b>Comment:</b> Amendments to the references are proposed below to correctly align with the material. Additionally, it is suggested that reference might be made to the point that if the HTC is expected to communicate on the radio he/she may require a radio telephony licence.</p> <p><b>Justification:</b> Accuracy</p> <p><b>Proposed Text:</b></p> <p>COMMUNICATION TRAINING <i>(as defined in AMC1 SPA.HEMS.130(ed), paragraph (bc)(2) (communications))</i></p>
response	Partially accepted
comment	<p>115</p> <p style="text-align: right;">comment by: UK CAA</p> <p><b>Page No:</b> 50</p> <p><b>Paragraph No:</b> 3.10, sub-paragraph 20(i)(2)</p> <p><b>Comment:</b> A small editorial amendment is proposed below to improve readability</p>



response	<p><b>Justification:</b> Editorial</p> <p><b>Proposed Text:</b></p> <p>(2) Line flights under supervision provide the opportunity for a HEMS technical crew member to practice 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 <del>his or her</del> <b>the</b> flight operational duties assigned to him or her according to the procedures laid down in the operator's operations manual.</p>
comment	<p>116 <span style="float: right;">comment by: <i>Luxembourg Air Ambulance</i></span></p> <p>From AMC1 SPA.HEMS.130(f)(1)(m)</p> <p>(1) <del>The line check and</del> Line flying under supervision should be performed in the helicopter</p> <p>Add to AMC1 SPA.HEMS.130(f)(1)(k)(1):</p> <p>If an operator is satisfied that simulation devices are capable of providing the realistic experience of an operational HEMS flight from start to finish, then such FSTDs may be used for crew member Line Checks as an alternative to utilising the helicopter.”</p> <p><b>Justification:</b> It was recognised that simulation could provide a better experience for pilots when conducting Line Checks, particularly in the evaluation of captaincy during well-crafted HEMS scenarios. This would negate the necessity of generating a representative flight to conduct a Line Check which often happens in the HEMS industry due to the relatively low frequency of activations which occur.</p>
response	<p>Partially accepted</p> <p>Please refer to topic 'TCM training'.</p>
comment	<p>117 <span style="float: right;">comment by: <i>Luxembourg Air Ambulance</i></span></p> <p>Add to AMC1 SPA.HEMS.130(f)(1)(l) Operator Proficiency Check</p> <p><i>(7) If the Line Check and the Operator Proficiency Check are performed in an FSTD, both may be combined.</i></p> <p><b>Justification:</b> With regard to the OPC for the TCHEMS, AMC1 SPA.HEMS.130(f)(1)(m)(2) allows to all other training and checking in an FSTD. To our understanding this includes the OPC, if the FSTD is qualified. If we could do the Line Check in an FSTD too, as we proposed in AMC 1 SPA.HEMS.130(f)(1)(k)(1), then it should be possible to combine both Checks in one flight. This would show a realistic picture of the performance of the TCHEMS and the entire crew including the pilot.</p>

response	Not accepted Please refer to topic 'TCM training'.
comment	<p>119 <span style="float: right;">comment by: <i>European Helicopter Association (EHA)</i></span></p> <p><b>1. AMC2 SPA.HEMS.130(f)(1) page 47</b></p> <p>SPA.HEMS.130(f)(1) (k) &amp; (l) describe two separate TCM checks for OPCs and Line Checks. We suggest to incorporate it into a single check providing that all elements are appropriately covered, and additional text into the NPA is needed to permit this to happen.</p> <p>The NPA should permit all TCM may be wholly or partly conducted in a FSTD so long as the operator could satisfy themselves that all skills could be checked appropriately. Although combining OPCs/Line Checks for TCMs into a single "Proficiency Check" might be done on an annual basis, the frequency of checking for pilots would remain unaltered but operators could integrate these with TCMs to provide a more constructive training &amp; checking programme.</p> <p>From AMC1 SPA.HEMS.130(f)(1)(m)we suggest removing the words "<i>The line check and</i>" from beginning of the sentence (LIFUS should still be performed in the helicopter)</p>
response	Partially accepted Please refer to topic 'TCM training'.
comment	<p>120 <span style="float: right;">comment by: <i>European Helicopter Association (EHA)</i></span></p> <p><b>1. AMC1 SPA.HEMS.130(a)(c) page 43</b></p> <p>the increased night flying requirement for HEMS pilots (to 50 hours night VMC) would be acceptable, albeit that the additional 30 hours night experience detailed at AMC1 SPA.HEMS.130(a)(c) should include FTSD and/or instrument experience.</p> <p>Moreover, it is noted that there was discernible difference between flying at night to either a remote HEMS LS or conducting an inter-hospital transfer, but this shouldn't necessarily affect the intent of the change.</p>
response	Partially accepted Please refer to topic 'TCM training'.
comment	<p>121 <span style="float: right;">comment by: <i>European Helicopter Association (EHA)</i></span></p> <p><b>1. AMC1 SPA.HEMS.130(d)(g) page 43</b></p> <p>the wording in the text implies the utilisation of a type specific FSTD which would be difficult for some operators to accomplish. In order to meet all parties concerns, we suggest to change the wording as follows: "The instrument flight training may take place in an FSTD which is not type-specific"</p>
response	Partially accepted Please refer to topic 'Flight crew training'.



4. Individual comments and responses referring to the relevant discussion topics

comment	<p>123 <span style="float: right;">comment by: <i>European Helicopter Association (EHA)</i></span></p> <p><b>AMC1 SPO.SPEC.HEC.100 pag.39</b>                  We suggest that the HESLO mission defined <b>AMC1 SPO.SPEC.HEC.100, (d) (2) (iii) (C) (iii)</b> can be performed on representative simulated missions</p>
response	<p>Not accepted                  Please refer to topic 'HEMS HEC'.</p>

comment	<p>124 <span style="float: right;">comment by: <i>European Helicopter Association (EHA)</i></span></p> <p>We consider that that 500 hours of training for an instructor would be difficult to achieve. We think that for HEMS HEC, the experience, training, supervision and instructor experience requirements for HESLO 1 and HELSO 2 is not necessary and that the experience, training, supervision and instructor experience should be based on the nature and complexity of the activity. Obviously, risk analysis by the operator and approval by the authority would anyhow be required. If there needs to be minimum flight training requirements included in the suggestion, we suggest recommended minimum of 7 hours of flight training including certain subjects/task as below (these are the minimum recommended requirements):</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Item</th> <th style="text-align: left;">Subject Area (as applicable)</th> <th style="text-align: left;">Subject Details</th> <th style="text-align: left;">Rec Time</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td>Choosing a reference points</td> <td> <ul style="list-style-type: none"> <li>• Steady over selected point</li> <li>• Different heights</li> <li>• 360-degree pedal turns</li> <li>• Climb/descend</li> </ul> </td> <td style="text-align: center;">1 hour</td> </tr> <tr> <td style="text-align: center;">2</td> <td>Walking the helicopter – 1</td> <td> <ul style="list-style-type: none"> <li>• Level field</li> <li>• Technical crew member moves at walking speed and predetermined track holding the line</li> <li>• Incline and decline</li> <li>• Delivering load opening in forrest/woods/foilage</li> </ul> </td> <td style="text-align: center;">1 hour</td> </tr> <tr> <td style="text-align: center;">3</td> <td>Experiencing others (instructor)</td> <td>Occupy co-pilot seat during HEC Cargo Sling Operations</td> <td style="text-align: center;">1 hour</td> </tr> <tr> <td style="text-align: center;">4</td> <td>Practicing the approach angle</td> <td>Different rope lengths</td> <td style="text-align: center;">1 hour</td> </tr> <tr> <td style="text-align: center;">5-7</td> <td>Flying with human cargo</td> <td>Open Field High Trees Improved Precision</td> <td style="text-align: center;">1 hour</td> </tr> <tr> <td></td> <td></td> <td>Mountain Ledge</td> <td style="text-align: center;">1 hour</td> </tr> <tr> <td></td> <td></td> <td>Water</td> <td style="text-align: center;">1 hour</td> </tr> <tr> <td></td> <td><b>TOTAL TRAINING TIME</b></td> <td></td> <td style="text-align: center;"><b>7 hours</b></td> </tr> </tbody> </table>	Item	Subject Area (as applicable)	Subject Details	Rec Time	1	Choosing a reference points	<ul style="list-style-type: none"> <li>• Steady over selected point</li> <li>• Different heights</li> <li>• 360-degree pedal turns</li> <li>• Climb/descend</li> </ul>	1 hour	2	Walking the helicopter – 1	<ul style="list-style-type: none"> <li>• Level field</li> <li>• Technical crew member moves at walking speed and predetermined track holding the line</li> <li>• Incline and decline</li> <li>• Delivering load opening in forrest/woods/foilage</li> </ul>	1 hour	3	Experiencing others (instructor)	Occupy co-pilot seat during HEC Cargo Sling Operations	1 hour	4	Practicing the approach angle	Different rope lengths	1 hour	5-7	Flying with human cargo	Open Field High Trees Improved Precision	1 hour			Mountain Ledge	1 hour			Water	1 hour		<b>TOTAL TRAINING TIME</b>		<b>7 hours</b>
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response Not accepted  
Please refer to topic 'HEMS HEC'.

comment 125 comment by: *European Helicopter Association (EHA)*  
**AMC1 SPO.SPEC.HESLO.100 pag. 39**  
a clarification whether the HEMS HEC instructor must meet the minimum experience level for a HESLO in **AMC1 SPO.SPEC.HESLO.100 (f) (i)** or if the instructor requirements required in **AMC1 SPO.SPEC.HEC.100, (d) (5) (ii) (C)** when performing training to qualify a pilot for HESLO 1 and HESLO 2.

response Not accepted  
Please refer to topic 'HEMS HEC'.

comment 126 comment by: *European Helicopter Association (EHA)*  
in order to to accentuate the usage of FSTDs for Line Checks, we would suggest to add the following wording to AMC1 SPA.HEMS.130(f)(1)(k)(1):  
"If an operator is satisfied that simulation devices are capable of providing the realistic experience of an operational HEMS flight from start to finish, then such FSTDs may be used for crew member Line Checks as an alternative to utilising the helicopter."

response Partially accepted  
Please refer to topic 'TCM training'.

comment 127 comment by: *European Helicopter Association (EHA)*  
**Operator Proficiency Check pag. 52**  
we would propose to add to AMC1 SPA.HEMS.130(f)(1)(l) the following point:  
*(7) If the Line Check and the Operator Proficiency Check are performed in an FSTD, both may be combined in one flight*

response Not accepted  
Please refer to topic 'TCM training'.

comment 128 comment by: *European Helicopter Association (EHA)*  
**RECURRENT AIRCRAFT/FSTD TRAINING pag.51**  
The recurrent training (J) (1) shall be conducted for the following type of operations:  
(1) HEMS HEC underslung load operations;  
(2) Hoist operations;  
(3) NVIS;  
(4) IFR/PBN;  
(5) Night operations.





response	<p><b>Rational:</b> increase in cost and complexity on the management of Technical Crews that are not company employees</p> <p>Not accepted Not needed. The training for NVIS HHO and cargo sling operations is defined elsewhere. Please refer to topic 'TCM training'.</p>
comment	<p>129 <span style="float: right;">comment by: <i>European Helicopter Association (EHA)</i></span></p> <p><b>OPERATOR PROFICIENCY CHECKS pag.51</b> the Operator proficiency checks (I) (1) shall be conducted for the following type of operations: (1) HEMS HEC underslung load operations; (2) Hoist operations; (3) NVIS; (4) IFR/PBN; (5) Night operations</p> <p><b>Rational:</b> increase in cost and complexity on the management of Technical Crews that are not company employees</p>
response	<p>Not accepted Not needed. The training for NVIS HHO and cargo sling operations is defined elsewhere. Please refer to topic 'TCM training'.</p>
comment	<p>132 <span style="float: right;">comment by: <i>UKFSC</i></span></p> <p>There is no logic in the new restriction at HEMS.130(b)(4), which prevents HTC from reading checklists when seated in the cabin. The ability of a trained person to assist with the reading of checklists is not dependent on which seat they occupy. In the event of an emergency developing when an HTC is in the cabin, the priority for the crew will be the preservation of all lives, not just that of a casualty, so assistance with reading of checklists is arguably the best use of resources, in accordance with normal CRM principles.</p> <p>There is some tension between the provisions of SPA.HEMS.130(d)(2) and SPA.HEMS.130(e) over the acceptability of single pilot ops - the former permits HTC in the cabin at night, whereas the latter permits it only in exceptional circumstances. Which is correct? UK HEMS operators consider single pilot/HTC in cabin flights from an accident site to a hospital LS as normal business.</p>
response	<p>Noted Please refer to topic 'TCM training'.</p>
comment	<p>133 <span style="float: right;">comment by: <i>UKFSC</i></span></p> <p>130(f)(1)(m)(2) indicates a requirement to use an FSTD for 'all other training and checking' unless 'it is not reasonably practicable to gain access'. This needs further consideration, or at least some amplification of what is considered reasonable to ensure that operators are on an equal footing. HEMS operations are not always state-funded - in the UK, they are only supported by charitable donations from the</p>

	<p>public. The requirement to use FTSD for training will add considerably and needlessly to the costs of maintaining a HEMS capability; with the paucity of FSTD in Europe, it will also add considerably to the time taken for training, with a consequent impact on delivery of a HEMS capability.</p> <p>The para should therefore be amended to read: "...performed in an FSTD or an aircraft of the same type or in the case of emergency and safety equipment..."</p>
response	<p>Not accepted Please refer to topic 'TCM training'.</p>
comment	<p>138 <span style="float: right;">comment by: <i>Luftfahrt-Bundesamt</i></span></p> <p><u>AMC2 SPA.HEMS.130(f)(1), lit. (k) &amp; (l)</u></p> <p>Two separate checks are described: Line checks and operator proficiency checks. It should be made clear that it would be possible to incorporate them into one single check provided that the elements of both checks - line check and OPC - are appropriately covered. Therefore an additional text would be needed for clarification.</p>
response	<p>Not accepted Please refer to topic 'TCM training'.</p>
comment	<p>139 <span style="float: right;">comment by: <i>Luftfahrt-Bundesamt</i></span></p> <p><u>AMC2 SPA.HEMS.130(f)(1), lit. (m)</u></p> <p>If a type-specific simulator was capable of providing a realistic experience of an operational HEMS flight from start to finish, then it should be possible to use it for line checks as an alternative to the helicopter.</p>
response	<p>Not accepted Please refer to topic 'TCM training'.</p>
comment	<p>140 <span style="float: right;">comment by: <i>Luftfahrt-Bundesamt</i></span></p> <p><u>AMC1 SPA.HEMS.130(a), lit. (c)</u></p> <p>We are concerned that the night flying requirement for HEMS pilots (50 hours of VMC at night) may be difficult to achieve and that it could be supplemented by IFR experience instead. In the past, HEMS operators were able to recruit night experienced pilots from military services. This source will run almost dry in the future. Pilots with a civilian background very often do not have a chance to gain experience of 50 hours of VMC at night as the majority of helicopter operations is still day operation.</p>
response	<p>Not accepted Please refer to topic 'Flight crew training'.</p>
comment	<p>141 <span style="float: right;">comment by: <i>Luftfahrt-Bundesamt</i></span></p> <p><u>AMC1 SPA.HEMS.130(d), lit. (g)</u></p>

	The proposed wording is unclear on whether the FSTD would necessarily be type-specific or not. Therefore an additional text would be needed for clarification.
response	Noted Please refer to topic 'Flight crew training'.
comment	<p>145 <span style="float: right;">comment by: AIR ZERMATT AG</span></p> <p><b>GM1 SPA.HELMS.100(a)</b> (d) Additional mountain-specific considerations It was considered necessary to enable sling load operations under HELMS, in addition to the hoist. Environmental, equipment or organisational conditions may lead operators to choose either the external hoist or cargo hook operation, based on a risk assessment. In order to enable HELMS operations at all altitudes, HELMS operations under performance class 3 have been authorised under the following conditions: operations over a hostile environment should only be conducted when a HELMS operating site used for take-off, landing or HELMS HEC operations <b>is located above 10 000 ft density altitude</b> and with a helicopter certified as category A or equivalent as defined by the Agency, in order to attract the same CAT HELMS alleviations at the HELMS operating site.</p> <ul style="list-style-type: none"> <li>• <i>Delete <b>is located above 10 000 ft density altitude</b></i></li> <li>• <i>From what arguments/data were the 10'000ft concluded? Arbitrary, hence delete!</i></li> <li>• <i>Also include Category B helicopters. Why? SE helicopters are a reliable alternative and have way more excessive power than Cat A helicopters. Additionally, during peaks the available resources can be deployed in order to meet the "Golden Hour<sup>[1]</sup>" target.</i></li> </ul> <p>Recommendations of the JAA TGL 42 should be implemented: For mountain rescue where environmental conditions of high altitude and high temperature - in excess of ISA – exists at the HELMS Operating Site such that adequate reserves of performance are not available to meet the requirements for PC2, provided AEO HOGE is available, the requirement for PC2 may be disregarded or additional resources, not meeting the requirements of Appendix 1 to JAR-OPS 3.005(d), may be employed. For mountain rescue where the number of requests for HELMS missions is such that the target response time (with the appropriately established resources) is certain to be exceeded, additional resources, not meeting the requirements of Appendix 1 to JAR-OPS 3.005(d), may be employed. Seasonal peaks not considered, "Golden Hour" The European HELMS model (and that for most other regions in the world) is based upon meeting the golden hour target – i.e. base response, site arrival, site departure and arrival at the hospital all within one hour. To achieve this, operational areas are defined which will permit all the phases of a HELMS mission to be completed and the casualty delivered to the hospital within the golden hour.</p> <p><b>AMC1 SPA.HELMS.105</b></p>

(g) A pilot involved in HEMS HEC operations should complete a flight check at least every 2 years to demonstrate competence in carrying out HEMS HEC operations. The checking may be combined with the line check or with a HEC training flight.

*Cross crediting not taken into account: pilots conducting more than 200 HESLO cycles a year, the experience should be credited and only a theoretical refresher is necessary.*

#### **AMC1 SPA.HEMS.130(a) Crew requirements**

(c) for pilots engaged in night operations, 50 hours of VMC at night including 20 hours as pilot-in- command/commander on a helicopter.

- · Replace 50 by 20 hours VMC at night
- · Replace 20 by 15 hours PIC

First over all hardly achievable, every operator trains their pilots in order to minimize the risks of incidents/accidents. Humans are different, the req. training needed differs from pilot to pilot. Companies, flight instructors respectively must have a freedom of action in order to do tailor-made training for the respective applicant.

#### **AMC1 SPA.HEMS.130(d) Crew requirements**

REGENCY

~~This recency may be obtained in a visual flight rules (VFR) helicopter using vision limiting devices such as goggles or screens, or in an FSTD.~~

INSTRUMENT FLIGHT TRAINING

(a) The instrument flight training should include training as pilot flying with sole reference to instruments.

(b) The training should take place at least every 6 months.

(c) The training duration should be at least 45 minutes.

Comment:

*(b) the training should take place at least every 12 months*

*(c) the training duration should be at least 30 minutes.*

(g) The operator should consider that a HEMS technical crew member, following completion of an initial conversion course and the associated line flying under supervision, is inexperienced until he or she has completed 50 HEMS missions.

Comment:

- *Replace 50 by 20*

#### **AMC1 SPA.HEMS.130(f)(1) Crew requirements**

(b) Single-pilot operations

(1) The flight crew training syllabus should include helicopter/FSTD training focusing on crew cooperation with the technical crew member.

(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 1178/20119; or



(ii) the pilot has at least 350 hours in either multi-pilot operations or single-pilot operations with a HEMS or equivalent technical crew member, or a combination of these.

(3) The training described in (1) and (2) above should be organised with a crew composition of one pilot and one technical crew member.

(4) The training described in (3) should be conducted by a suitably qualified commander with a minimum experience of 500 hours in either multi-pilot operations or single-pilot operations with a HEMS technical crew member, or a combination of these.

- Delete FSTD requirement for technical crew members, this makes initial training costs explode. The training can be simulated in an appropriate setup in a training room.
- AZ completes rescues since over 50 years in a demanding environment. There is no need and no benefit to increase the technical crew member on that basis. For each competency needed a flight crew member is assigned. Assisting the pilot indeed needs some initial training. But there should not be a minimum flight instruction in order to allow performance-based instructions based on applicant's previous experience and personal learning progress.

#### **AMC2 SPA.HEMS.130(f)(1) Crew requirements**

##### TECHNICAL CREW MEMBER TRAINING AND CHECKING SYLLABUS

##### INITIAL AND RECURRENT TRAINING COVERING PRIMARY TASKS (*as defined in AMC2 SPA.HEMS.130(e), paragraph (b), in SPA.HEMS.130(f)(2) and in SPA.HEMS.155*)

(a) HEMS technical crew member initial and recurrent training and checking syllabus should include the following items:

- (1) duties in the HEMS role;
- (2) stowage, security and use of on-board medical equipment;
- (3) practice of response to HEMS call-out;
- (4) map reading, including:
  - (i) ability to keep track with helicopter position on map;
  - (ii) ability to detect conflicting terrain/obstacles on a given route, and at a given altitude;
  - (iii) use of moving maps, as required;
- (8) HEMS operating site selection and use;
- (9) basic understanding of the helicopter type in terms of location and design of normal and emergency systems and equipment, including all helicopter lights and operation of doors, and including knowledge of helicopter systems and understanding of terminology used in checklists;
- (10) the dangers of rotor running helicopters;
- (11) outside lookout during the flight;
- (12) crew coordination with in-flight call-outs, with emphasis on crew coordination regarding the basic tasks of the HEMS crew member, including checklist initiation, interruptions, and termination;
- (13) techniques for handling patients, the medical consequences of air transport on patients, and some knowledge of hospital casualty reception, and techniques for loading patients in helicopters;
- (14) warnings, and use of normal, abnormal and emergency checklists assisting the pilot as required;
- (15) the use of the helicopter intercommunications system;



- (16) dangerous goods (DGs), as relevant to cabin crew members;
- (17) security;
- (18) HEMS philosophy and HEMS rules;
- ~~(19) basic helicopter performance principles, including the definitions of Category A certification, performance class 1, performance class 2, performance class 3 (if applicable), and public interest sites (PISS);~~
- (20) operational control and supervision;
- (21) meteorology;

*Comment*

- *(19) delete*
- *Delete (22): PIC's responsibility*

~~(4) applicable parts of SERA;~~

(5) airspace, restricted areas, and noise-abatement procedures.

COMMUNICATION TRAINING *(as defined in AMC1 SPA.HEMS.130(e), paragraph (b)(2) (communications))*

(c) If the HEMS technical crew member is tasked to provide assistance in radio communications, the initial and recurrent training and checking syllabus should also include the following items:

- (1) operation of radio equipment;
- (2) crew coordination with in-flight call-outs, with emphasis on radio communication issues.

MONITORING TRAINING *(as defined in AMC1 SPA.HEMS.130(e), paragraph (b)(4))*

(d) **If the HEMS technical crew member is tasked to provide assistance in monitoring the flight path and instruments,** the initial and recurrent training and checking syllabus should also include the following items:

- (1) basic understanding of the helicopter type, including knowledge of any limitations to the parameters the HEMS crew member is tasked to monitor, and knowledge of the basic principles of flight;
- (2) instrument reading;
- (3) inside monitoring during the flight;
  - (i) aircraft state/cockpit cross-check;
  - (ii) automation philosophy and autopilot status monitoring, as relevant;
  - (iii) FMS, as relevant;
- (4) crew coordination with in-flight call-outs, with emphasis on call-outs and actions resulting from the monitoring process; and
- (5) flight path monitoring.

GROUND CREW TRAINING *(as defined in AMC1 SPA.HEMS.130(e), paragraph (c))*

(e) If the HEMS technical crew member is tasked to provide assistance to the helicopter on the ground, the initial and recurrent training and checking syllabus should also include the following items:

- (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 running;
- ~~(5) marshalling signals;~~



- (6) safety on the aerodrome/operating site, including fire prevention and ramp safety areas; and  
 (7) towing of helicopter/trolley.

*Comments:*

- *Delete (5) marshalling signs, PIC's responsibility*

ADDITIONAL TRAINING (AS APPROPRIATE)

(f) The initial and recurrent training and checking syllabus should also include the following items as relevant to the operations:

- (1) HEMS HEC underslung load operations;
- (2) hoist operations;
- (3) NVIS;
- (4) IFR/PBN.

CONVERSION COURSE GROUND TRAINING AND CHECKING WHEN CHANGING HELICOPTER TYPES

(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.

INITIAL AIRCRAFT/**FSTD TRAINING**

(h) 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 described in (1) should be supervised by a HEMS pilot with a minimum experience of 500 hours in either multi-pilot operations or single-pilot operations with a HEMS technical crew member or a combination of these.~~

(4) The training may be combined with the line flying under supervision.

LINE FLYING UNDER SUPERVISION

(i) 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 practice 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 his or her flight operational duties assigned to him or her according to the procedures laid down in the operator's operations manual.

(3) Line flying under supervision should be conducted by a suitably qualified HEMS technical crew member or **commander nominated by the operator**.

(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



*Comments:*

- *Delete FSTD*
- *(3) delete, instructors are properly trained*
- *That commander can conduct LIFUS of HEMS technical crew member is a good thing*

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~~

(j) Recurrent helicopter/FSTD training

(1) The recurrent training should focus on crew cooperation and **contain 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 (h) above.

LINE CHECKS

(k) 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) During the line check, the HEMS technical crew member should demonstrate competence in carrying out normal line operations described in the operator's operations manual.

(3) 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.

(4) The validity period of the line check should be 12 calendar months. The validity period should be counted from the end of the month when the check was performed.

(5) When the line check is undertaken within the last 3 months of the validity period, the new validity period should be counted from the original expiry date.

*Comments:*

- *Delete FSTD*
- *No flight training should be required since the recurrent training can be conducted in a suitable office location with a training setup*
- *Conducting an LC and OPC with HEMS technical crew members adds too much complexity to an already very complex environment. LC should be enough and may be conducted by a suitably qualified commander*

~~(4) The validity period of the operator proficiency check should be 12 calendar months. The validity period should be counted from the end of the month when the check was performed.~~

~~(5) When the operator proficiency check is undertaken within the last 3 months of the validity period, the new validity period shall be counted from the original expiry date.~~

~~(6) The operator proficiency check should be conducted by a suitably qualified instructor nominated by the operator to conduct flight crew operator proficiency checks.~~

TRAINING AND CHECKING DEVICES





	<p>(m) Use of FSTDs</p> <p><del>(1) The line check and line flying under supervision should be performed in the helicopter.</del></p> <p><del>(2) All other training and checking should be performed in an FSTD or, if it is not reasonably practicable to gain access to such devices, in an aircraft of the same type or in the case of emergency and safety equipment training, in a representative training device. 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 flight crew member.</del></p> <p>Comment:</p> <ul style="list-style-type: none"> <li>delete</li> </ul> <p><b>GM1 SPA.HEMS.130(f)(1)</b></p> <p><i>Even though this is only GM, hence no binding suggestions, we don't see the benefit in this suggestion. Either it's a two pilot or single pilot ops, but something in between could lead to situations where responsibilities are not clear among the crew members, which may lead to disputes during flight and critical flight situations. In such situations basically, a multi-pilot training must be conducted in order to regulate responsibilities. Hence, we're again in a multi-pilot ops. We don't think a third concept in between is helpful. Either single pilot ops with assistance (for that the educational effort is way too high) or a multi-pilot operation.</i></p>
response	<p>Partially accepted</p> <p>Please refer to the following topics:</p> <ul style="list-style-type: none"> <li>GM1 SPA.HEMS.100</li> <li>Performance</li> <li>HEMS HEC</li> <li>Flight crew training</li> <li>TCM training</li> </ul>

comment	<p>154 <span style="float: right;">comment by: London's Air Ambulance</span></p> <p>Page 40</p> <p>Table 1 AMC1 SPA.HEMS.120(a) HEMS operating minima</p> <p>The previous table 1 gave alleviation for operating minima at night (Non-NVIS) for 2 pilot operation with a cloud base/ceiling not lower than 1200 feet. The required visibility was not less than 2500m. The proposed change raises this to 5000m. This is considered to be an operational restriction where the operation, for safety purposes, has adopted a 2 pilot policy regardless of flight conditions especially in a congested hostile environment. London's Air ambulance asks that this be revisited and criteria for 2 pilot operations under VFR be reinstated especially as more HEMS operators in the UK are moving to 2 pilot operations for enhanced safety. It is considered that the rationale stated in para 2.3.3.3 is biased towards the use of Technical Crewmen and does not consider the possibility of 2-pilot operation. It is also suggested that the argument expressed in 2.3.3.3 should be expanded to consider the enhanced safety margin the 2-pilot operation gives.</p>
response	<p>Noted</p> <p>Please refer to the following topics:</p>



VFR minima  
Crew composition  
Flight crew training  
TCM training  
Autopilots

comment

160

comment by: Devon AA

AMC2 SPA.HEMS.130 (f) (l) - The whole AMC has implications for operators as it prescribes an increase in training for HTC's which will have rostering and financial effects. Sub para (l) Now describes the requirement for a HTC to complete an OPC which is new to us but achievable. However, sub para (m) (2) States that 'all other training should be performed in an FSTD' this would include an OPC. There is no definition of 'if it is not reasonably practical to gain access to such devices'. Would an FSTD in Oslo be deemed 'practical' to access from the UK? If yes, then then financial implications of putting 18 HTC's through such an FSTD would be a huge burden to a charity funded organisation.

response

Noted  
Please refer to topic 'TCM training'.

comment

162

comment by: AIRBUS HELICOPTERS

**It is proposed to create a new 'AMC to SPA.HEMS.125 (a)'**

**AMC to SPA.HEMS.125 (a)**

***PERFORMANCE CLASS 3 HEMS OPERATIONS OVER A HOSTILE ENVIRONMENT  
Operations in accordance with SPA.HEMS.125 (a) should be made with a helicopter certified as Category A or equivalent as determined by the Agency.***

Rationale: consistency with proposal defined and explained in Airbus Helicopters' comment n° 32.

response

Partially accepted  
Please refer to topic 'Performance'.

comment

170

comment by: Elilombarda

AMC1 SPA.HEMS.120(a) HEMS operating minima

**Table 1**

In particular cases, when flying at night, it is not possible to see or recognise the clouds. In these cases the pilot is not capable to maintain himself out of clouds, even if the clouds are scattered or few.

In some cases (e.g. mountains) the pilot could depart from an area with few or scattered cloud coverage, to end up in a more dense cloud coverage with no previous indications from the available weather report sytem (lack of available coverage, spread out in the whole territory). The only thing the pilot can be aware of is the base of the clouds, no matter if they are few or overcast (if staying in a limited area, generally the cloud base does not change, but the coverage can be much different



	<p>from point to point - e.g. close to the mountain/hill side compared to those you can find in a valley or in a nearby flat area). It is suggested to maintain the minimum clouds height as "CLOUD BASE", not "ceiling", at least at night.</p>
response	<p>Partially accepted Please refer to topic 'VFR minima'.</p>
comment	<p>176 <span style="float: right;">comment by: <i>Elilombarda</i></span></p> <p>AMC1 SPA.HERMS.130(e) Crew requirement</p> <p><u>HERMS TECHNICAL CREW MEMBER</u></p> <p>(a) (a) When the crew is composed of one pilot and one HERMS technical crew member, the latter should be seated in the front seat (co-pilot seat) during the flight. However, the HERMS technical crew member may be seated in the cabin if all of the following conditions are met:</p> <ol style="list-style-type: none"> <li>(1) the HERMS technical crew member is also a HHO technical crew member;</li> <li>(2) the helicopter is equipped with a hoist;</li> <li>(3) <u>THE FLIGHT IS CONDUCTED TO OR FROM A HERMS OPERATING SITE;</u></li> <li>(4) A risk assessment determines that the technical crew member can carry out his or her primary tasks from the cabin; this risk assessment may determine that the rear door(s) needs (need) to remain open for better visibility;</li> <li>(5) The commander decides so.</li> </ol> <p>Unless the flight is an ambulance flight, every flight could call for the use of the winch, because the pilot does not know in advance what environment and local situation he will face with. Moreover, it is a normal situation to have a change of dispatch when in flight, often requiring the use of the winch in the new mission. In these situations, the Commander may elect to always have the Technical Crew Member in the back seats.</p> <p>Allowing point (a) above will induce and permit to always take-off with the Technical Crew Member in the back seats, making it a routine, not a specific case.</p> <p>Thus, the flight with a single pilot and no TCM in the front seat could become a standard way to fly HERMS.</p> <p>This point is in contrast with the intentions set forth by:</p> <p>- GM1 SPA.HERMS.100(a) Helicopter emergency medical service (HERMS) operations (...) (c) Risk management (...) (2) (...)</p> <p>In mitigation against these additional and considered risks, experience levels are set, specialist training is required (such as instrument training to compensate for the increased risk of inadvertent entry into cloud) and <u>OPERATION WITH TWO CREW (TWO PILOTS, OR ONE PILOT AND A HERMS TECHNICAL CREW MEMBER) IS MANDATED.</u> (HERMS crews and medical passengers are also expected to operate in accordance with good crew resource management (CRM) principles.)</p>



	<p>- Point 2.1 - Page 7 - Other than mountain HEMS operations - "The available accident data supports the idea that <u>HEMS OPERATIONS AT NIGHT OR IN MARGINAL WEATHER CONDITIONS CAN BE IMPROVED</u>".</p> <p>In consideration of:</p> <ul style="list-style-type: none"> <li>- the willing to increase the safety of the HEMS operations,</li> <li>- the understanding that in the past accidnts one of the contributing factor was the presence of the sole pilot in the flight cabin,</li> <li>- the allowance of more critical flight situations for HEMS operations (night, lower ceiling/visibility, single pilot),</li> </ul> <p>it is suggested to keep two persons in the flight cabin as much as possible. See also comment (no. 173) to:</p> <p><b>SPA.HEMS.130 Crew requirements</b> (..) (cd)</p>
response	<p>Noted</p> <p>Please refer to the following topics:</p> <ul style="list-style-type: none"> <li>Crew composition</li> <li>TCM training</li> <li>VFR minima</li> </ul>

comment	<p><b>180</b> <span style="float: right;">comment by: <i>Elilombarda</i></span></p> <p><b>AMC1 SPA.HEMS.120(a) HEMS operating minima</b></p> <p>HEMS VFR MINIMA : CEILING AND VISIBILITY <b>Table 1</b></p> <p>DAY - Ceiling 499 - 300ft - <u>Visibility 1 500m</u></p> <p>The NPA point "2.3.3.3 Simplification of the HEMS operating minima", on page 16, row 14 says: "By day, the VFR minimum visibility <u>IS AVERAGED OUT AT 1 500 m</u> for dispatch, starting from values of 1 000, 2 000 and 3 000 m." In the table in the AMC, the VFR minimum visibility is reported as 1 500 m. Because the allowed ceiling is as low as 300 ft (the cloud base could be lower than that) it is suggested to use a better average of <u>2 000 m</u>.</p>
response	<p>Not accepted</p> <p>Please refer to topic 'VFR minima'.</p>

comment	<p><b>194</b> <span style="float: right;">comment by: <i>Swiss Air-Ambulance Rega</i></span></p> <p><b>GM1 SPA.HEMS.100(e) Air ambulance</b></p> <p>We appreciate the intention by EASA to assume all unclear situations of patients shall result in a HEMS rescue operation. Certainly, some condition might be known, but not always the presented, available and assessable information is comprehensive enough. The flight back to the HEMS base should be possible under</p>
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response	<p>the HEMS definition, even when a transport of the patient by the helicopter was not indicated after a medical assessment at the scene.</p> <p>Therefore, we propose the following amendment:</p> <p>"When the medical condition of the person is not known <b>comprehensively</b> in advance, in a situation of time pressure, then this rescue operation is part of the definition of HEMS, <b>also including if the helicopter had to return to the base without a patient transport after a medical assessment of the patient at the scene.</b>"</p>
	<p>Not accepted</p> <p>Not needed as it is already the case. Please refer also to topic 'Definition and scope of HEMS operations'.</p>
comment	<p>195 <span style="float: right;">comment by: <i>Swiss Air-Ambulance Rega</i></span></p> <p>AMC1.SPA.HEMS.120(a) Table 2</p> <p>There is no reason for higher VFR day minima for 'proceed VFR' flights after an IFR segment than for VFR day flights without a preceding IFR segment according to table 1.</p> <p>We propose the following amendment:</p> <p>"Reduced HEMS operating minima when instructed to 'proceed VFR' <b>in night flights following an instrument approach; visibility minima for proceed VFR day according to table 1</b>"</p>
response	<p>Noted</p> <p>Please refer to topic 'VFR minima'.</p>
comment	<p>201 <span style="float: right;">comment by: <i>ELILOMBARDA</i></span></p> <p><b>AMC1 SPA.HEMS.120(a) HEMS operating minima</b> <b>Table 1</b></p> <p>In particular cases, when flying at night, it is not possible to see or recognise the clouds. In these cases the pilot is not capable to maintain himself out of clouds, even if the clouds are scattered or few.</p> <p>In some cases (e.g. mountains) the pilot could depart from an area with few or scattered cloud coverage, to end up in a more dense cloud coverage with no previous indications from the available weather report sytem (lack of available coverage, spread out in the whole territory). The only thing the pilot can be aware of is the base of the clouds, no matter if they are few or overcast (if staying in a limited area, generally the cloud base does not change, but the coverage can be much different from point to point - e.g. close to the mountain/hill side compared to those you can find in a valley or in a nearby flat area).</p> <p>It is suggested to maintain the minimum clouds height as "CLOUD BASE", not "ceiling", at least at night.</p>
response	<p>Partially accepted</p> <p>Please refer to topic 'VFR minima'.</p>



comment

202

comment by: ELILOMBARDA

**AMC1 SPA.HEMS.130(e) Crew requirements**HEMS TECHNICAL CREW MEMBER

(a) (a) When the crew is composed of one pilot and one HEMS technical crew member, the latter should be seated in the front seat (co-pilot seat) during the flight. However, the HEMS technical crew member may be seated in the cabin if all of the following conditions are met:

- (1) the HEMS technical crew member is also a HHO technical crew member;
- (2) the helicopter is equipped with a hoist;
- (3) THE FLIGHT IS CONDUCTED TO OR FROM A HEMS OPERATING SITE;
- (4) A risk assessment determines that the technical crew member can carry out his or her primary tasks from the cabin; this risk assessment may determine that the rear door(s) needs (need) to remain open for better visibility;
- (5) The commander decides so.

**The above point is a REDUCTION OF SAFETY. The real reason of this emendament is for economical reduction only, and this in contrast with the intentions set forth by:**

- GM1 SPA.HEMS.100(a) Helicopter emergency medical service (HEMS) operations  
(...)

(c) Risk management

(...)

(2)

(...)

In mitigation against these additional and considered risks, experience levels are set, specialist training is required (such as instrument training to compensate for the increased risk of inadvertent entry into cloud) and **OPERATION WITH TWO CREW (TWO PILOTS, OR ONE PILOT AND A HEMS TECHNICAL CREW MEMBER) IS MANDATED.** (HEMS crews and medical passengers are also expected to operate in accordance with good crew resource management (CRM) principles.)

- Point 2.1 - Page 7 - Other than mountain HEMS operations - "**The available accident data supports the idea that HEMS OPERATIONS AT NIGHT OR IN MARGINAL WEATHER CONDITIONS CAN BE IMPROVED.**"

Unless the flight is an ambulance flight, every flight could call for the use of the winch, because the pilot does not know in advance what environment and local situation he will face with. Moreover, it is a normal situation to have a change of dispatch when in flight often requiring the use of the winch in the new mission. In these situations, the Commander may elect to always have the Technical Crew Member in the back seats. Allowing point (a) above will induce and permit to always take-off with the Technical Crew Member in the back seats, making it a routine, not a specific case.

Thus, the flight with a single pilot and no TCM in the front seat could become a standard way to fly HEMS.



	<p>In consideration of:</p> <ul style="list-style-type: none"> <li>- the willing to increase the safety of the HEMS operations,</li> <li>- the understanding that in the past accidnts one of the contributing factor was the presence of the sole pilot in the flight cabin,</li> <li>- the allowance of more critical flight situations for HEMS operations (night, lower ceiling/visibility, single pilot),</li> </ul> <p><b>It is suggested to keep two persons in the flight cabin as much as possible. See also comment (no. 200) to:</b></p> <p><b>SPA.HEMS.130 Crew requirements</b></p>
response	<p>Noted</p> <p>Please refer to the following topics:</p> <ul style="list-style-type: none"> <li>Crew composition</li> <li>TCM training</li> <li>VFR minima</li> </ul>
comment	<p>203 <span style="float: right;">comment by: <i>ELILOMBARDA</i></span></p> <p><b>AMC1 SPA.HEMS.120(a) HEMS operating minima</b></p> <p>HEMS VFR MINIMA : CEILING AND VISIBILITY</p> <p><b>Table 1</b></p> <p>DAY - Ceiling 499 - 300ft - <u>Visibility 1 500m</u></p> <p>The NPA point "2.3.3.3 Simplification of the HEMS operating minima", on page 16, row 14 says: "By day, the VFR minimum visibility is averaged out at 1 500 m for dispatch, starting from values of 1 000, 2 000 and 3 000 m." In the table in the AMC, the VFR minimum visibility is reported as 1 500 m. Because the allowed ceiling is as low as 300 ft (the cloud base could be lower than that) it is suggested to use a better average of <u>2 000 m</u>.</p>
response	<p>Not accepted</p> <p>Please refer to topic 'VFR minima'.</p>
comment	<p>219 <span style="float: right;">comment by: <i>DRF-Luftrettung</i></span></p> <p><b>AMC1 SPA.HEMS.120(a)</b></p> <p><b>Table: HEMS Operation minima</b></p> <p>We have recognized with astonishment, that you transferred the operating minima from the implementation rules to the AMC material. Did you consider, that now, all operators can file ALTMOC's to bypass the existing rules. Again this would greatly influence tenders and disturb all efforts for al level european playing field.</p> <p>This is enhanced due to the fact, that you do not distinguish anymore between operations with two or one pilot.</p>



response	<p><b>We suggest, to bring the new proposals back to the implementation rules to provide a level playing field for all operators.</b></p> <p>Not accepted Please refer to topic 'VFR minima'.</p>
comment	<p>220 <span style="float: right;">comment by: DRF-Luftrettung</span></p> <p><b>AMC1 SPA.HEMS.120(a)</b> <b>Table: HEMS Operation minima</b></p> <p>We agree with the fact, that NVIS Missions nowadays are more safe and the operating minima can be reduced.</p> <p><b>We therefore suggest to lower the minimum for the cloud base to generally 1000 ft AGL</b></p>
response	<p>Not accepted Please refer to topic 'VFR minima'.</p>
comment	<p>221 <span style="float: right;">comment by: DRF-Luftrettung</span></p> <p><b>AMC1 SPA.HEMS.120(a)</b> <b>HEMS VFR MINIMA: DISTANCE TO OBSTACLES</b> <b>(a) Except when necessary for take-off or landing, a HEMS flight in VFR shall only be performed:</b> <b>(2) elsewhere than as specified in (1), at a height equal to or above 300 ft above the ground or water, or 300 ft above the highest obstacle within a radius of 150 m (500 ft) from the aircraft.</b></p> <p>When flying VFR, Pilots always fly below the cloud base. Normally this is done at least 100ft below the base, due to the fact, that the cloud bases are not totally level.</p> <p>While in the table of the operating minima in AMC1 SPA.HEMS120(a) the EASA specifies the lowest cloud base of 300ft above ground, here the EASA states, that HEMS-Missions shall only be performed at a height equal or greater than 300ft GND.</p> <p>This is not practically. Please change the proposal to a feasible value.</p> <p><b>We suggest to change the text to read:</b> <b>At a height below the lowest cloud layer, where the ground is visible, or 300 ft above the highest obstacle within a radius of 150m from the aircraft</b></p>
response	<p>Partially accepted Please refer to topic 'VFR minima'.</p>
comment	<p>222 <span style="float: right;">comment by: DRF-Luftrettung</span></p> <p><b>GM2 SPA.HEMS.120 HEMS TRAINING MINIMA</b> <b>When conducting a HEMS training flight, the HEMS operating minima are applicable.</b></p>





We consider training flights with new pilots or HEMS-TC as a high challenge to the commander. Not only, that he has the responsibility for the helicopter and the crew, he also has the task of a good and understandable training. Therefore it may be necessary, to advice the trainee in flight and check, if the trainee performs his tasks in a correct manner. This will lead automatically to a reduced monitoring of airspace.

Your proposals are not harmonized, because you grant a training flight with HEMS-minima, but an experienced HEMS-Pilot is not allowed to use these minima when flying alone to refuel or catch medical supply.

**Please harmonize these regulations**

response

Not accepted  
Please refer to topic 'VFR minima'.

comment

223

comment by: DRF-Luftrettung

**AMC1 SPA.HEMS.125(b)(4) HEMS OPERATING SITE DIMENSIONS**

**(a) When selecting a HEMS operating site, it should be of sufficient size, shape and clear of obstacles to provide for safe operations**

Your new proposal leaves it to the operators or the pilots, to judge, if a HEMS Operating site is of sufficient size and shape.

This is a totally unnecessary burden for the pilots.

**We expect the EASA, to lay down minimum requirements for operating sites at:**

- **day**
- **night with one pilot on not presurveyed sites with /without NVIS**
- **night with two pilots on not presurveyed sites with /without NVIS**

response

Partially accepted  
Please refer to topic 'HEMS operating site dimensions'.

comment

224

comment by: DRF-Luftrettung

**AMC1 SPA.HEMS.130(e) Crew requirements (g) und(h)**

**When an inexperienced HEMS technical crew member is part of the crew, the following should apply:**

- (1) 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**
- (2) the pilot has achieved 100 flight hours on the type since the completion of the operator's conversion course on the type.**

"Inexperienced Crew member" is a fixed expression of Regulation (EU) 965-2012 and affects only multi pilot operation. The role of the HEMS-TC is not to fly the aircraft, but to assist the Commander according to his tasks. The commander in a HEMS-mission is experienced (minimum 500 flight hours in similar operational environment acc. AMC 1 SPA.HEMS.130 (a) (b)).



	<p>If a pilot has passed all training and checks acc. to the regulation, he is able to perform his duty regardless, if the HEMS-TC has less or more than 50 missions. We do not see the point of an increase in safety, to transfer 965-2012 Rules for multi Pilot Operation rules to HEMS Operations with a technical crew member.</p> <p><b>Please delete the AMC1 SPA.HEMS.130€ in total</b></p>
response	<p>Not accepted Please refer to topic 'TCM training'.</p>
comment	<p>225 <span style="float: right;">comment by: DRF-Luftrettung</span></p> <p><b>AMC1 SPA.HEMS.130 (d) Crew Requirements</b> <b>The instrument training should be conducted by a FI/TRI/SFI and should be sufficient for the pilot to demonstrate competence in the following manoeuvres</b></p> <p>In the current regulation the recency can be obtained with 30min flying with sole reference to the instruments without an FI/TRI/SFI. The explicate wording „instrument flight training“ –as suggested in the new proposal – is a fixed expression in regulation (EU) 1178-2011. It implements, that this training can be done only, if the trainer has a valid IR-rating, otherwise he is not authorized for instrument flight training according AMC2 to Annex 6 of 1178-2011.</p> <p><b>We therefore suggest, to use the present wording „flying with sole reference to instruments“</b></p>
response	<p>Accepted Please refer to topic 'Flight crew training'.</p>
comment	<p>226 <span style="float: right;">comment by: DRF-Luftrettung</span></p> <p><b>AMC1 SPA.HEMS.130 (d) Crew Requirements</b> <b>The instrument training should be conducted by a FI/TRI/SFI and should be sufficient for the pilot to demonstrate competence in the following manoeuvres</b></p> <p>Since there is no need for a HEMS-Pilot to hold a valid IR-rating the training should focus on flying with sole reference to instruments. The pilot should be able to recover from inadvertent IMC and not to continue a flight in IMC. There's a high risk that training of basic IR-skills for pilots, who do not hold an instrument rating, could lead to a wrong decision making since a VFR Pilot might feel safe in an challenging instrumental flight environment.</p> <p>Please state this fact very clear in the AMC.</p> <p><b>We suggest to delete the wording “ to demonstrate Competence” with “ to regain a level attitude and leave IMC Conditions in case of inadvertent IMC”</b></p>
response	<p>Accepted Please refer to topic 'Flight crew training'.</p>
comment	<p>227 <span style="float: right;">comment by: DRF-Luftrettung</span></p>



	<p><b>AMC1 SPA.HEMS.130 (d) Crew Requirements</b>  <b>(g) The helicopter used for the training should be the helicopter type used in the HEMS operation.</b></p> <p>A training of basic scan technics in combination with climbing and descending turns can be done in each type of helicopter. Pilots, who are flying more types of helicopter in the HEMS-Role are urged to perform these training on each type / variant.</p> <p>But the mentioned skills are not based on helicopter type and can be performed in every helicopter.</p> <p><b>We suggest to change the text to:</b>  <b>The helicopter used for the training should be one of the helicopter types used in the HEMS-Operation</b></p>
response	<p>Accepted  Please refer to topic 'Flight crew training'.</p>
comment	<p>228 <span style="float: right;">comment by: DRF-Luftrettung</span></p> <p><b>AMC1.SPA.HEMS.130(e) Crew Requirements – HEMS Technical Crew Member (a)</b></p> <p>In the new NPA the point SPA.HEMS.130e has moved to SPA.HEMS.130 (d)</p> <p><b>Please adjust the headline</b></p>
response	<p>Partially accepted</p>
comment	<p>229 <span style="float: right;">comment by: DRF-Luftrettung</span></p> <p><b>AMC1 SPA.HEMS.130(e)</b>  <b>(e)There may be exceptional circumstances when it is not possible for the HEMS technical crew member to carry out his or her primary task as defined under (a).</b></p> <p>The primary task of a HEMS-TC are defined in paragraph (b).</p> <p><b>Please change the reference from (a) to (b)</b></p>
response	<p>Accepted</p>
comment	<p>230 <span style="float: right;">comment by: DRF-Luftrettung</span></p> <p><b>AMC 1 SPA.HEMS.130(f)(1)(b)(4), AMC 2 SPA.HEMS130(f)(1)(h)(4)</b>  <b>The training described ) should be conducted by a suitably qualified commander with a minimum experience of 500 hours in either multi-pilot operations or single-pilot operations with a HEMS technical crew member, or a combination of these.</b></p> <p>500 hrs experience in the HEMS environment does not give any certainty about the educational quality required for the training. As well should the trainers be standardised in a recurrent training.</p>

response	<p><b>We ask you to define the qualification of the commander more in detail and leave flight training to FI/TRI/SFI or supervision commanders.</b></p> <p>Not accepted Please refer to topics 'Flight crew training' and 'TCM training'.</p>
comment	<p>231 <span style="float: right;">comment by: DRF-Luftrettung</span></p> <p><b>AMC 2 SPA.HEMS.130(f)(1)</b></p> <p><b>(m)(1) The line check and line flying under supervision should be performed in the helicopter</b></p> <p>When performing line checks the TRI / commander acts as an additional crew member to check the performance of the HEMS-TC together with the HEMS Pilot. Especially in summer times with high temperature this will decrease the flight performance drastically due to the decrease in fuel, allowed to carry.</p> <p>In chapter (k)(1) you also specify, that a representative flight may be performed.</p> <p>Normal line operations can also be checked in a certified Simulator</p> <p><b>Please amend the text to read:</b></p> <p><b>(m)(1) The line check and line flying under supervision should be performed either in the helicopter or in a FSTD.</b>  <b>If it is performed in a FSTD, an actual HEMS activity has to be simulated.</b>  <b>If the Line Check and the Operator Proficiency Check are performed in an FSTD, both may be combined in one flight.</b></p>
response	<p>Not accepted Please refer to topic 'TCM training'.</p>
comment	<p>239 <span style="float: right;">comment by: Finnish Transport Safety Agency</span></p> <p>AMC1 SPA.HEMS.110(e)</p> <p>As Trafi commented in point SPA.HEMS.110(e), the three axis autopilot should be required for all single-pilot operations.</p> <p>Proposal:</p> <p><del>SUITABLE STABILITY AUGMENTATION SYSTEM (SAS) OR AUTOPILOT</del>  <i>The SAS or autopilot should at least have the following functions:</i>  <i>(a) pitch rate damping and attitude hold;</i>  <i>(b) roll rate damping and attitude hold; and</i>  <i>(c) yaw damping.</i></p> <p><b>AUTOPILOT</b>  <i>The autopilot should have minimum three axis control and upper modes.</i></p>
response	<p>Partially accepted</p>



comment	<p>240 <span style="float: right;">comment by: <i>Finnish Transport Safety Agency</i></span></p> <p>AMC1 SPA.HERMS.120(a)</p> <p>In Trafi's opinion the HEMS operating minima at night should be cloud base instead of ceiling. There might be several 4/8 cloud layers below ceiling, which in practice creates the situation where IFR capability is needed.</p> <p>In NVIS operations minimum cloud base could be lowered from 1200 ft to 1000 ft, and during the en-route to 800 ft for short periods.</p> <p>Proposal:</p> <p>Replace 'ceiling' with 'cloud base' in the Table 1 for HEMS operating minima at night</p> <p>Modify the footnote (***) as follows:</p> <p><i>During the en-route phase, ceiling cloud base may be reduced to 1 000 ft for short periods, and in NVIS operations to 800 ft for short periods.</i></p>
response	<p>Partially accepted Please refer to topic 'VFR minima'.</p>
comment	<p>241 <span style="float: right;">comment by: <i>Finnish Transport Safety Agency</i></span></p> <p>AMC1 SPA.HERMS.130(d)</p> <p>Trafi supports the proposal, however the duration of training is too short and number of manoeuvres limited.</p> <p>In point (f) a new manoeuvre should be added: a transition to closest adequate aerodrome + instrument approach. This would prepare pilot to cover safely the situation in case of unintended flight into the bad weather.</p> <p>Proposal:</p> <p>-- (c) <i>The training duration should be at least <del>45 minutes</del> 2 hours.</i></p> <p>-- (f) -- (8) <i>transition to closest adequate aerodrome followed by at least one instrument approach.</i></p>
response	<p>Partially accepted Please refer to topic 'Flight crew training'.</p>
comment	<p>242 <span style="float: right;">comment by: <i>Finnish Transport Safety Agency</i></span></p> <p>AMC1 SPA.HERMS.130(f)(1) point (b)(4)</p>

response	<p>In Trafi's opinion the training should be conducted by suitable qualified instructor. The instructor competencies are essential in this kind of demanding training.</p> <p>Proposal:</p> <p><i>(b)(4) The training described in (3) should be conducted by a suitably qualified <del>commander</del> instructor (TRI/SFI) with a minimum experience of 500 hours in either multi-pilot operations or single-pilot operations with a HEMS technical crew member, or a combination of these.</i></p>
	<p>Not accepted Please refer to topic 'TCM training'.</p>
comment	<p>243 <span style="float: right;">comment by: Finnish Transport Safety Agency</span></p> <p>AMC2 SPA.HEMS.130(f)(1) points (h)(3) and (l)(6)</p> <p>The proposal is supported by Trafi, however initial training should be conducted by a qualified instructor and OPCs should be conducted by an qualified examiner.</p> <p>Instructor and examiner competencies are essential in this kind of demanding training and checking.</p> <p>Point (l)(6) should also be in line with AMC1 ORO.FC.230 point (b)(1)(iv) regarding recurrent training.</p> <p>Proposal:</p> <p><i>(h)(3)</i> <i>The training described in (1) should be <del>supervised by a HEMS pilot</del> conducted by a suitably qualified instructor (TRI/SFI) with a minimum experience of 500 hours in either multi-pilot operations or single-pilot operations with a HEMS technical crew member or a combination of these</i></p> <p><i>(l)(6)</i> <i>The operator proficiency check should be conducted by a suitably qualified <del>instructor</del> examiner (TRE/SFE) nominated by the operator to conduct flight crew operator proficiency checks.</i></p>
response	<p>Not accepted Please refer to topic 'TCM training'.</p>
comment	<p>246 <span style="float: right;">comment by: Babcock MCS RW Italia</span></p> <p>3. AMC1 SPA.HEMS.105 is added as follows: AMC1 SPA.HEMS.105 HEMS HEC operations HEMS HEC CARGO SLING OPERATIONS. The AMC does not mention any recency for that type of operation.</p> <p>We consider the HEC operations as sensitive as at least the HHO operations. For that reason we suggest to considerate the same level of recency</p>



response	<p><b>Suggested alternative text(s)</b></p> <p>(i) Recency. All pilots and HEC crew members conducting HEC operations shall have completed in the last 90 days; (1) when operating by day: any combination of three day or night HEC cycles, each of which shall include a transition to and from the hover; (2) when operating by night: three night HEC cycles, each of which shall include a transition to the hover.</p> <p>Accepted Please refer to topic 'HEMS HEC'.</p>												
comment	<p>247 <span style="float: right;">comment by: <i>Babcock MCS RW Italia</i></span></p> <p><i>4. AMC1 SPA.HEMS.110(b) is added as follows: AMC1 SPA.HEMS.110(b) Equipment requirements for HEMS operations MOVING MAP DISPLAYS.</i></p> <p>There are not enough technical details in order to specify the minimum requirements as performances, dimensions available charts etc.</p> <p>It is possible to fulfill the AMC with a non professional GPS not useful in order to increase the situational awareness.</p> <p><b>Suggested alternative text(s)</b> TBD a minimum standard</p>												
response	<p>Not accepted Please refer to topic 'Moving maps'.</p>												
comment	<p>248 <span style="float: right;">comment by: <i>Babcock MCS RW Italia</i></span></p> <p><i>AMC1 SPA.HEMS.130(d) Crew requirements RECENCY</i></p> <p>One of the major causes of CFT is not taken into account, as the incorrect management of accidental entry into IMC.</p> <p>We think we should train the flight crews how to manage the inadvertent IMC conditions. inadvertent entry into IMC is the major cause of CFT in HEMS operations.</p> <p><b>Suggested alternative text(s)</b></p> <table border="0" style="width: 100%;"> <tr> <td style="width: 33%;">INSTRUMENT</td> <td style="width: 33%;">FLIGHT</td> <td style="width: 33%;">TRAINING</td> </tr> <tr> <td>(...)</td> <td></td> <td></td> </tr> <tr> <td colspan="3">. (7) use of the autopilot including upper modes, if fitted.</td> </tr> <tr> <td colspan="3">. (8) Recovery from /management of (risk included) inadvertent entry into IMC conditions</td> </tr> </table>	INSTRUMENT	FLIGHT	TRAINING	(...)			. (7) use of the autopilot including upper modes, if fitted.			. (8) Recovery from /management of (risk included) inadvertent entry into IMC conditions		
INSTRUMENT	FLIGHT	TRAINING											
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response	<p>Partially accepted Please refer to topic 'Flight crew training'.</p>												
comment	<p>249 <span style="float: right;">comment by: <i>Babcock MCS RW Italia</i></span></p> <p><i>AMC1 SPA.HEMS.130(e) Crew requirements (a) When the crew is composed of one pilot and one HEMS technical crew member, the latter should be seated in the front seat (co-pilot seat) during the flight. However, the HEMS technical crew member may be seated in the cabin if all of the following conditions are met: (1) the HEMS technical crew member is also an HHO technical crew member; (2) the helicopter is equipped</i></p>												

with a hoist; (3) the flight is conducted to or from a HEMS operating site; (4) a risk assessment determines that the technical crew member can carry out his or her primary tasks from the cabin; this risk assessment may determine that the rear door(s) needs (need) to remain open for better visibility; (5) the commander decides so.

HEMS TECHNICAL CREW MEMBER.

The exception, HCM not seated in the front seat during singol pilot operations, must be reduced to the minimum as possible.

We think it is appropriate to reinforce the prescription, because exceptions are allowed under specific conditions. It's an exception and it must be clearly perceived by the pilots.

#### Suggested alternative text(s)

HEMS TECHNICAL CREW MEMBER

(a)When the crew is composed of one pilot and one HEMS technical crew member, the latter ~~should~~ shall be seated in the front seat (co-pilot seat) during the flight. However, the HEMS technical crew member may be seated in the cabin if all of the following conditions are met:

(1)The HEMS technical crew member ia also an HHO technical crew member

(2)The helicopter is equipped with a hoist

(3)It has been determined that a hoist operation is to be performed at ~~the flight is conducted to or from~~ a HEMS operating site

(4)A risk assessment determines that the technical crew member can carry out his or her primary tasks from the cabin; this risk assessment may determine that the rear door(s) needs (need) to remain open for better visibility

(5)The commander decides so

(...)

(e) There may be exceptional circumstances when it is not possible for the HEMS technical crew member to carry out his or her ~~his/her~~ primary task as defined under (a)(5).

This is to be regarded as exceptional and is only to be conducted at the discretion of the commander, following a risk assessment which is taking into account the dimensions and environment of the HEMS operating site

(...)

response

Noted

Please refer to topic 'TCM seating'.

comment

250

comment by: *Babcock MCS RW Italia*

*AMC1 SPA.HEMS.130(f)(1) Crew requirements FLIGHT CREW TRAINING AND CHECKING SYLLABUS .....*

*(bc) The flight crew checking syllabus should include: (1) proficiency checks, which should include landing and take-off profiles likely to be used at*

*HEMS operating sites; and (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;	
	<p>Each selection / choice process (decision making) is preceded and supported by a phase of information collection (problem setting) and analysis / evaluation (problem solving) of the same. In the case of choice, an HEMS Operating Site must evaluate both the ability to observe and collect information, and to analyze the data collected and evaluate the related options.</p> <p>The regulation plays the role of "Software" in the SHELL scheme which describes the interactions of the human element with the other elements of the operating environment. I believe that every aspect, on which the process being assessed is based, must be emphasized in the legislation.</p>	
	<p><b>Suggested alternative text(s)</b>                  AMC1SPA.HEMS.130(f)(1) Crew requirements                  (...) The flight crew checking syllabus should include:                  . (...) SEP                  . (2) line checks, with special emphasis on all of the following:                  (...) (iv) the observation, evaluation and selection from the air of HEMS operating sites;                  SEP                  (...)</p>	
response	Not accepted Please refer also to topic 'TCM training'.	

comment	251	comment by: Babcock MCS RW Italia
	<p><b>AMC2 SPA.HEMS.130(f)(1) Crew requirements TECHNICAL CREW MEMBER TRAINING AND CHECKING SYLLABUS</b></p> <p>Each selection / choice process (decision making) is preceded and supported by a phase of information collection (problem setting) and analysis / evaluation (problem solving) of the same. In the case of choice, an HEMS Operating Site must evaluate both the ability to observe and collect information, and to analyze the data collected and evaluate the related options.</p> <p>The regulation plays the role of "Software" in the SHELL scheme which describes the interactions of the human element with the other elements of the operating environment. I believe that every aspect, on which the process being assessed is based, must be emphasized in the legislation.</p>	
	<p><b>Suggested alternative text(s)</b>                  AMC2SPA.HEMS.130(f)(1) Crew requirements                  TECHNICAL CREW MEMBER TRAINING AND CHECKING SYLLABUS                  (...) (a) HEMS technical crew member initial and recurrent training and checking syllabus should include the following it</p>	



response	<p>(...) (8) HEMS operating site <b>observation, evaluation</b> and selection and use;</p> <p>Not accepted Please refer also to topic 'TCM training'.</p>
comment	<p>252 <span style="float: right;">comment by: <i>Babcock MCS RW Italia</i></span></p> <p><i>AMC2 SPA.HEMS.130(f)(1) Crew requirements TECHNICAL CREW MEMBER TRAINING AND SYLLABUS CHECKING LI NE CHECK OPERATOR PROFICIENCY CHECKS</i></p> <p>The introduction of line and proficiency checks increase in cost and complexity the management of Technical Crews that are not company employees, (we employ nurses as Hems Crew Member on VFR day operations).</p> <p>We think we should introduce Line and Proficiency checks step by step starting with the most sensitive operations as Night Ops, NVIS Ops, IFR/PBN, HEC Ops.</p> <p><b>Suggested alternative text(s)</b> LINE CHECKS and PROFICIENCY CHECKS shall be conducted for the following type of operations: (1) HEMS HEC underslung load operations; (2) Hoist operations; (3) NVIS; (4) IFR/PBN; (5) Night operations</p>
response	<p>Not accepted Not needed. The training for NVIS HHO and cargo sling operations is defined elsewhere. Please refer to topic 'TCM training'.</p>
comment	<p>253 <span style="float: right;">comment by: <i>OEAMTC</i></span></p> <p><i>AMC1 SPA.HEMS.120(a) HEMS operating minima</i></p> <p><i>HEMS VFR MINIMA: DISTANCE TO OBSTACLES</i></p> <p><i>(a) Except when necessary for take-off or landing, a HEMS flight in VFR shall only be performed:</i> <i>(1) over the congested areas of cities, towns or settlements or over an open-air assembly of persons at a height equal to or above 300 m (1 000 ft) above the highest obstacle within a radius of 600 m from the aircraft;</i> <i>(2) elsewhere than as specified in (1), at a height equal to or above 300 ft above the ground or water, or 300 ft above the highest obstacle within a radius of 150 m (500 ft) from the aircraft.</i></p> <p>please delete (a)(1) limitations and rephrase (2) as current operations in congested areas could not be continued in following situations:</p>



response	<ol style="list-style-type: none"> <li>1. Worst weather conditions according Table 1;</li> <li>2. At the request of ATC;</li> <li>3. If patient condition dictates.</li> </ol> <p>please allow for 300 ft above the highest obstacle within a radius of 150 m (500 ft) from the aircraft also in congested areas</p>
	<p>Partially accepted Please refer to topic 'VFR minima'.</p>
comment	<p>254 <span style="float: right;">comment by: OEAMTC</span></p> <p><i>AMC1 SPA.HEMS.110(e) Equipment requirements for HEMS operations</i></p> <p><i>SUITABLE STABILITY AUGMENTATION SYSTEM (SAS) OR AUTOPILOT</i></p> <p><i>The SAS or autopilot should at least have the following functions:</i></p> <p><i>(a) pitch rate damping and attitude hold;</i></p> <p><i>(b) roll rate damping and attitude hold; and</i></p> <p><i>(c) yaw damping.</i></p> <p>It is understood and supported that night VFR flights shall only take place in helicopters with some kind of stabilization. SAS typically do not provide attitude hold (mode) but attitude and attitude rate stabilization. Please change <b>attitude hold</b> to read : attitude/attitude rate stabilization</p>
response	<p>Accepted Please refer to topic 'Autopilots'.</p>
comment	<p>255 <span style="float: right;">comment by: OEAMTC</span></p> <p><i>AMC1 SPA.HEMS.130(a) Crew requirements</i></p> <p><i>HEMS COMMANDER MINIMUM EXPERIENCE</i></p> <p><i>The minimum experience level for the commander who conducts HEMS flights should not be less than</i></p> <p><i>...</i></p> <p><i>c) for pilots engaged in night operations, 50 hours of VMC at night including 20 hours as pilot-in- command/commander on a helicopter.</i></p> <p>The need to increase safety during HEMS night operations is understood and supported. Since not all MS allow Night VFR (except HEMS, police and Military) gaining the 50 experience might be difficult under these conditions.</p> <p>Suggestion: In many MS interhospital missions are flown under a HEMS Approval (mostly called secondary missions). Allow these secondary missions with a minimum experience of 20 hrs VMC at night as PIC in order to allow pilots to gain the required 50 hrs needed for HEMS primary missions/outside landings to unsurveyed HEMS operating sites.</p>

response	Noted Please refer to topic 'Flight crew training'.
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comment	269 <span style="float: right;">comment by: <i>Babcock Mission Critical Services Limited</i></span>
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**Issue**

AMC1 SPA.HEMS.105

The proposed text does not mention any recency for that type of operation.

**Why?**

We consider the HEC operations are at least as sensitive as HHO operations. Crews therefore should have similar levels of recency.

**Suggested alternative:**

Insert additional paragraph (into SPO.SPEC.HEC or SPA.HEC.105) as follows: "(i) Recency. All pilots and HEC crew members conducting HEC operations shall have completed in the last 90 days: (1) when operating by day: any combination of three day or night HEC cycles, each of which shall include a transition to and from the hover; (2) when operating by night: three night HEC cycles, each of which shall include a transition to the hover."

response	Accepted Please refer to topic 'HEMS HEC'.
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comment	270 <span style="float: right;">comment by: <i>Babcock Mission Critical Services Limited</i></span>
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**Issue**

AMC1 SPA.HEMS.120(a)

Babcock welcomes the simplification of the weather minima (tables, etc.). However:

(1) The more lenient limits are too lenient and increase overall risk, e.g for a single pilot by day with a 300ft ceiling the visibility minimum has now reduced from 3000m to 800m and combined with the change from cloud base to ceiling, there now may be 3 oktas of cloud beneath the aircraft;

(2) The rationale for reduced minima is related to improved TCM training and involvement, but this is not the case on the return from a HEMS operating site when the TCM may be in the cabin (SPA.HEMS.130), as may also be the case under the proposal for HEC in HEMS; and

(3) The transfer of the table and associated minima from the Regulation to the AMC should be reversed.

**Why?**

Significantly increased safety risk due to lower weather minima, without the benefit of a supporting TCM in some operations.



response	<p><b>Suggested alternative:</b></p> <p>EASA should reconsider the impact of Table 1 note (*) and the revised SPA.HERMS.130 requirements. One or both should be revised in conjunction with each other.</p> <p>Weather minima tables should remain in the Regulation.</p> <p>Noted Please refer to topic 'VFR minima'.</p>
comment	<p>271 <span style="float: right;">comment by: <i>Babcock Mission Critical Services Limited</i></span></p> <p><b>Issue</b></p> <p>AMC1 SPA.HERMS.105 It is not clear why the HERMS HEC check should be done every 2 years instead of annually. In common with UK CAA, we recommend this check should be aligned with other checks in accordance with ORO.FC.230/SPA.HHO.130.</p> <p><b>Why?</b></p> <p>No alignment of checks and proficiency with SPA.HHO.130.</p> <p><b>Suggested alternative:</b></p> <p>"(g) A pilot involved in HERMS HEC operations should complete a flight check at least annually to demonstrate competence in carrying out HERMS HEC operations. The checking may be combined with the line check or with a HEC training flight."</p>
response	<p>Accepted Please refer to topic 'HERMS HEC'.</p>
comment	<p>272 <span style="float: right;">comment by: <i>Babcock Mission Critical Services Limited</i></span></p> <p><b>Issue</b></p> <p>AMC1 SPA.HERMS.125(b)(4) Deletion of 2D separation minima for day operations and the use of 2D for night operations.</p> <p><b>Why?</b></p> <p>The original 2D is a reasonable way of preventing tip strikes; Babcock considers removing it in favour of the operator's judgement of what is safe to represent a reduction in safety.</p> <p>Babcock also considers 2D to be inadequate for night operations.</p> <p><b>Suggested alternative:</b></p> <p>A minimum separation criteria is suggested, e.g. 20ft clearance all round for day operations and 30ft for night operations.</p>

response	Partially accepted Please refer to topic 'HEMS operating site dimensions'.
comment	273 <span style="float: right;">comment by: <i>Babcock Mission Critical Services Limited</i></span> <b>AMC1 SPA.HEMS.130</b>  Babcock fully supports the increased night experience requirements at point (c).
response	Noted Please refer to topic 'Flight crew training'.
comment	274 <span style="float: right;">comment by: <i>Babcock Mission Critical Services Limited</i></span> <b>Issue</b>  AMC1 SPA.HEMS.130(e) (h) When an inexperienced HEMS technical crew member is part of the crew, the following should apply: (1) 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 (2) the pilot has achieved 100 flight hours on the type since the completion of the operator's conversion course on the type.  <b>Why?</b>  Babcock considers the inexperienced crew requirements as a positive enhancement to safety, however the proposed limitations are not proportionate due to rostering requirements at individual bases, and hence represent a disproportionate burden on operators.  <b>Suggested alternative:</b>  EASA should reconsider the pilot experience requirements, to ensure proportionality and practicality under current crew rostering practices.
response	Noted Please refer to topic 'TCM training'.
comment	296 <span style="float: right;">comment by: <i>Stephanie Selim</i></span> <b>3.10.4 AMC1 SPA.HEMS.110 (b) (p39)</b>  Please coordinate with the EASA EFB experts to be in line with the EFB requirements (in particular those for own-ship position).  In accordance with the comments recently sent to EASA on the IP about own-ship position, here are our comments: - The EFB could be a solution to comply with the requirement of displaying « moving map » and « own-ship position » described in AMC1 SPA.HEMS.110(b) only if used in accordance with the SPA.EFB.



response	<p>- To comply with the future CAT.GEN.MPA.141(b), an EFB cannot replace a HTAWS for avoiding obstacles in-flight (extract of the paragraph describing the applications that cannot be eligible for EFB application – “forbidden applications”):</p> <p>Noted Please refer to topic ‘Moving maps’.</p>
comment	<p>297 <span style="float: right;">comment by: <i>Stephanie Selim</i></span></p> <p>3.10.7 AMC1 SPA.HEMS.120(a) HEMS VFR MINIMA: DISTANCE TO OBSTACLES (p41)</p> <p>a) 2) DGAC agrees with 300 ft but the daytime ceiling in Table 1 on page 40 also gives a ceiling between 499 and 300 ft : DGAC wonders if the whole is consistent. A ceiling between 499 and 350 (or 400 ft) would be more appropriate.</p>
response	<p>Partially accepted Please refer to topic ‘VFR minima’.</p>
comment	<p>298 <span style="float: right;">comment by: <i>Stephanie Selim</i></span></p> <p>3.10.10 GM1 SPA.HEMS.122 (p42)</p> <p>The words "to it" seem superfluous.</p>
response	<p>Noted Please refer to topic ‘Destination alternates’.</p>
comment	<p>299 <span style="float: right;">comment by: <i>Stephanie Selim</i></span></p> <p>3.10.14 AMC1 SPA.HEMS.130(d) (p43)</p> <p>Became AMC1 SPA.HEMS.130(c). The title "recency" should be deleted.</p>
response	<p>Partially accepted</p>
comment	<p>300 <span style="float: right;">comment by: <i>Stephanie Selim</i></span></p> <p>3.10.15 AMC1 SPA.HEMS.130(e) (p44)</p> <p>Became AMC1 SPA.HEMS.130(d)</p> <p>a) DGAC agrees only if the new requirements apply to the HEMS TCM which is also HHO TCM, otherwise it is contradictory to SPA.HEMS.130 e) 1) i). In addition, 4) in a) seems to be more GM than AMC.</p> <p>(e) reference is made to (a) but (a) has become (b) : the reference must therefore be changed to (b).</p> <p>i) 3) the term "flight crew member" should be replaced by "pilot" for the sake of clarity and to harmonize with (h). i) 4) Are there OSDs for crews with a pilot and a TCM?</p>

response	Partially accepted Please refer to topic 'TCM training'.
comment	301 <span style="float: right;">comment by: <i>Stephanie Selim</i></span> 3.10.17 GM1 SPA.HERMS.130(e)(3) (b) (p45) b) is this lighting compatible with NVIS? How can we ensure this compatibility?
response	Noted Please refer to topic 'Moving maps'.
comment	302 <span style="float: right;">comment by: <i>Stephanie Selim</i></span> 3.10.20 AMC2 SPA.HERMS.130(f)(1) (p47) a) 19) is it useful ? b) 5) Are noise-abatement procedures useful? f) 1) Is the word "underslung" the right word? Isn't it more like "sling"? In general, is this f) useful since the training for HHO and NVIS is described in the corresponding SPA points ? A link to the points in question could be more relevant.
response	Noted Please refer to topic 'TCM training'.
comment	303 <span style="float: right;">comment by: <i>Stephanie Selim</i></span> 3.10.25 GM1 SPA.HERMS.145(b) (p54) DGAC wonders what this is about? What means are involved here?
response	Noted Please refer to topic 'HERMS operating base'.
comment	313 <span style="float: right;">comment by: <i>Garmin International</i></span> AMC1 SPA.HERMS.140 Page 54:  SPA.HERMS.110 proposes the addition of requirements for Obstacle Awareness and Avoidance (item (b)) and SAS or Autopilot (item (e)); consequently, the Operations Manual should be required to include the following additional information:  <ol style="list-style-type: none"> <li>1. The use of Obstacle Awareness and Avoidance applications including the type and extent of the obstacles included in the database and obstacles likely not to be included in the database.</li> <li>2. The use of the SAS or autopilot for HEMS operations</li> </ol>
response	Noted



The proposal is already covered with point SPA.HEMS.140. Please refer also to topics 'Moving maps' and 'Autopilots'.

comment

328

comment by: NOLAS

**AMC1 SPA.HEMS.105 HEMS HEC operations (f)****Regulation**

*(f) A pilot involved in HEMS HEC operations should be trained and experienced as defined in paragraphs (b) and (d) of AMC1 SPO.SPEC.HEC.100.*

It all seems straight forward. But **AMC1 SPO.SPEC.HEC.100, (d) (2) (ii) (C)** requires HESLO type 1 or 2 completed before completing training. To the best of our knowledge, the clear majority of the operators/crews that are presently performing HEC would have to meet the requirements for HESLO 2 given the typical length of the cargo sling.

**AMC1 SPO.SPEC.HEC.100, (d) (2) (iii) (C) (iii)** requires that the flight instruction and supervision is performed by a HESLO instructor and that it should take place during HESLO missions. Here it must be noted that the following text is included:

*"For the purpose of this AMC, a HESLO mission is defined as a flight or series of flights from point A to point B on a particular day and for commercial specialized operations, for a particular client."*

This would then preclude that the necessary HESLO missions could be simulated.

Furthermore, **AMC1 SPO.SPEC.HEC.100, (d) (5) (ii) (C)** sets requirements on the HEMS HEC instructor, and those requirements are not problematic, we believe, but the requirements for a HESLO instructor **AMC1 SPO.SPEC.HESLO.100 (f) (i)** are. The minimum experience level for a HESLO instructor are among other things 500 hours of HESLO and to have attended the 'teaching and learning' part of the flight instructor or type rating instructor training, or have prior experience as an aerial work instructor subject to national rules. The teaching and learning part is not an issue, but the 500 hours of HESLO experience can be very difficult to meet for, we believe, the bulk of the European HEMS operators apart from operators from countries (i.e. Switzerland and Austria) where helicopters are used en masse for sling load and pilots with ample sling load experience are easy to come by.

**Concern**

Given these requirements, and provided that our interpretation and assumptions are correct, it may be quite difficult for many HEMS operators in Europe that presently also perform rescue operation by means of HEC Cargo Sling Operations, to train their personnel within a realistic personnel resource and economic framework. Furthermore, we do believe that many HEMS operators would struggle to come up with instructors that have 500 hours of HESLO experience. Again, the latter probably does not apply to countries where sling load operation is performed en masse. While the requirements make good sense for countries with complex environment and



mission profiles, our concern is that the requirements are too high for countries where the nature of the activity is rather simple and have rather low complexity.

**Small example**

We have performed underslung rescue operation since 1978 and performed HEC Cargo Sling Operations since 2008. While most of our crews typically practice 25-50 minutes/5-10 cycles every work week, the live missions are very few (There are roughly only 100 in the whole country every year including mission performed by the Air Force). The typical average live HEC Cargo Sling Operations mission for our pilots are 0.6 missions per year. Given the definition of HESLO missions and the required supervision (if our interpretation is correct), and if employing a pilot with very little or no underslung/HESLO 1/HESLO 2 experience (say some one recruited from the Air force or the offshore industry), that pilot would have to be in in our company for roughly 15 years before he/she could be left unsupervised... Or to be sent to an SPO operator and get training through their organization (and perhaps type of helicopter) to meet the requirement... We are not sure that all this is necessary for a safe operation.

This could have a safety implication as some operators might not be able to recruit/employ the most suitable pilots for their (HEMS) operation. This could example be that rather than employing pilots with the right experience in IFR, NVIS, SAR or other relevant experience for HEMS as preferred by the company, are forced to recruit pilots with the sufficient underslung operation experience instead.

**Suggestion**

1. That the HESLO mission defined, **AMC1 SPO.SPEC.HEC.100, (d) (2) (iii) (C) (iii)** can be performed on representative simulated missions.
2. A clarification whether the HEMS HEC instructor must meet the minimum experience level for a HESLO in **AMC1 SPO.SPEC.HESLO.100 (f) (i)** or if the instructor requirements required in **AMC1 SPO.SPEC.HEC.100, (d) (5) (ii) (C)** when performing training to qualify a pilot for HESLO 1 and HESLO 2. If indeed 500 hours are required for the instructor, that number must be changed to something more realistic and performance based.
3. Regardless, of above, we do suggest that the whole HEMS HEC section should be discarded. This type of operation is better nationally controlled as SPO/SAR activity.

response

Not accepted  
Please refer to topic 'HEMS HEC'.

comment

329

comment by: *NOLAS*

**AMC1 SPA.HEMS.110(b) Equipment requirements for HEMS operations**  
Relevant change. We are already in compliance or can comply without major change.

response

Noted  
Thank you



comment	330	comment by: <i>NOLAS</i>
	<b>AMC1 SPA.HEMS.110(e) Equipment requirements for HEMS operations</b>	
	Relevant change. We are already in compliance or can be in compliance without major change.	
response	Noted Thank you	
comment	331	comment by: <i>NOLAS</i>
	<b>AMC1 SPA.HEMS.120(a) HEMS operating minima</b>	
	A welcomed and relevant change.	
	The new table 1 in <b>AMC1 SPA.HEMS.120(a) HEMS operating minima</b> is much more practical and there was never any need to make a distinction between two-pilot and single-pilot operations with a sufficiently trained HEMS technical crew member. Rather than elaborating too much, we fully support the rationale as described in <b>2.3.3.3 Simplification of the HEMS operating minima</b> .	
	The new tables 2 and 3 (Table 3) in <b>AMC1 SPA.HEMS.120(a) HEMS operating minima</b> will ensure that safe(r) IFR operations can be conducted rather than (less safe) operation in marginal visual conditions at HEMS operating minima is performed. Rather than elaborating too much, we fully support the rationale as described in <b>2.3.3.4 Enabling HEMS operations under instrument flight rules (IFR)</b> .	
response	Noted Thank you Please refer also to topic 'VFR minima'.	
comment	332	comment by: <i>NOLAS</i>
	<b>AMC1 SPA.HEMS.120(d) HEMS operating minima</b>	
	Relevant change. We are already in compliance or can comply without major change.	
response	Noted Thank you	
comment	333	comment by: <i>NOLAS</i>
	<b>GM2 SPA.HEMS.120 HEMS operating minima</b>	
	Relevant and welcomed change. It must be possible to train to the minima you can operate at. While our own Authority see this the same way, we have experienced that other authorities have different philosophy on this issue. This change is sensible and will leave no doubt.	
response	Noted Thank you Please refer also to topics 'VFR minima' and 'Flight crew training'.	

comment	335	comment by: <i>NOLAS</i>
	<p><b>AMC1 SPA.HEMS.125(b)(4) Performance requirements for HEMS operations</b>  Relevant and welcomed change in point (a). The previous regulation was impractical and useful only for compliance or legal issues while not actually adding anything to real safety. This new regulation will add safety (but might be more difficult to handle from a compliance or legal point of view...).</p>	
response	<p>Noted  Thank you  Please refer also to topic 'HEMS operating site dimensions'.</p>	
comment	338	comment by: <i>NOLAS</i>
	<p><b>GM2 SPA.HEMS.125(b)(3)</b>  This is a relevant and good change (defining HEMS sites). It must be possible to train for the environment that you can operate in. While our Authority see it the same way, we have experienced that other authorities have different philosophy on this issue- This change is very clear and will leave no doubt.</p>	
response	<p>Noted  Thank you</p>	
comment	340	comment by: <i>NOLAS</i>
	<p><b>AMC1 SPA.HEMS.130(a) Crew requirements</b>  Relevant change. We are already in compliance or can comply without major change. However, while not a concern for us, we do suggest that the credit could be given for IMC or simulator training towards the 50 hours of VMC at night For example, up to 30 hours of the requirement could be performed in IMC or simulator or both.</p>	
response	<p>Partially accepted  Please refer to topic 'Flight crew training'.</p>	
comment	341	comment by: <i>NOLAS</i>
	<p><b>AMC1 SPA.HEMS.130(d) Crew requirements</b>  Relevant change. We are already in compliance or can comply without major change.</p>	
response	<p>Noted  Thank you</p>	
comment	342	comment by: <i>ADAC Luftrettung gGmbH</i>
	<p><i>AMC1 SPA.HEMS.130 e) -- e) Page 44 (editorially only)</i></p> <p>replace: "primary task as defined under (a)" by "primary tasks as defined under (b)"</p>	

response Accepted

comment 343 comment by: *NOLAS*

**AMC1 SPA.HEMS.130(e) Crew requirements**

Relevant change. We are already in compliance or can comply without major change.

response Noted  
Thank you

comment 344 comment by: *NOLAS*

**GM1 SPA.HEMS.130(e)(3)**

This is a relevant and welcomed change. While we do not have a problem with our own Authority, we have understood that different authorities have different philosophy on this issue and this will leave no doubt.

response Noted  
Thank you

comment 345 comment by: *NOLAS*

**AMC1 SPA.HEMS.130(f)(1) Crew requirements**

Relevant change. We are already in compliance or can comply without major change.

response Noted  
Thank you

comment 346 comment by: *NOLAS*

**AMC2 SPA.HEMS.130(f)(1) Crew requirements**

Relevant change. We are already in compliance or can comply without major change.

response Noted  
Thank you

comment 347 comment by: *NOLAS*

**GM1 SPA.HEMS.130(f)(1) Crew requirements**

Relevant change. We are already in compliance or can comply without major change.

response Noted  
Thank you

comment 348 comment by: *NOLAS*

**GM2 SPA.HEMS.130(f)(1) Crew requirements**



	Relevant and welcomed change. We have noted that authorities have had different philosophy on this issue and this will leave no doubt.
response	Noted Thank you
comment	<p>350 <span style="float: right;">comment by: ADAC Luftrettung gGmbH</span></p> <p>AMC1 SPA.HEMS.130(f)(1) Page 46 (editorially only)</p> <p>replace: "AMC1 SPA.HEMS.130(f)(1)" by "AMC1 SPA.HEMS.130(e)(1)"</p>
response	Partially accepted
comment	<p>353 <span style="float: right;">comment by: ADAC Luftrettung gGmbH</span></p> <p>GM1 SPA.HEMS.145(b) page 54</p> <p>please define "a location without weather reporting" using the example of Germany.</p>
response	Noted Please refer to topic 'HEMS operating base'.
comment	<p>355 <span style="float: right;">comment by: ADAC Luftrettung gGmbH</span></p> <p>AMC1 SPA.HEMS.110(e) page 39</p> <p>replace by: AMC1 SPA.HEMS.110(e) Equipment requirements for HEMS operations SUITABLE STABILITY AUGMENTATION SYSTEM (SAS) OR AUTOPILOT The SAS "with additional Trim System" or autopilot should at least have the following functions: (a) pitch rate damping and attitude <b>stabilisation</b>; (b) roll rate damping and attitude <b>stabilisation</b>; and (c) yaw damping.</p>
response	Partially accepted Please refer to topic 'Autopilots'.

comment	<p>356</p> <p style="text-align: right;">comment by: <i>NOLAS</i></p> <p><b>AMC2 SPA.HEMS.130(f)(1) Crew requirements</b>                  LINE CHECKS and OPERATOR PROFICIENCY CHECKS are not new requirements. It is good that it is now described in a clear way so as to leave no doubt!</p> <p>We do suggest that it could be possible to perform some elements of a LINE CHECK in a suitable FSTD so as to be able to control “weather” and “mission”. Sometimes it is necessary to perform LINE CHECK as simulated missions or the quality of the LINE CHECK might not be optimal due to weather conditions. Being able to perform some elements of the LINE CHECK (i.e. the airborne portion) in a LOFT scenario in a suitable FSTD could be very beneficial for ensuring quality of the checking.</p>
response	<p>Accepted</p> <p>Please refer to topic ‘TCM training’.</p>

comment	<p>357</p> <p style="text-align: right;">comment by: <i>NOLAS</i></p> <p><b>AMC2 SPA.HEMS.130(f)(1) Crew requirements</b>                  LINE CHECKS and OPERATOR PROFICIENCY CHECKS are not new requirements. It is good that it is now described in a clear way so as to leave no doubt!</p> <p>We do suggest that it could be possible to perform some elements of a LINE CHECK in a suitable FSTD so as to be able to control “weather” and “mission”. Sometimes it is necessary to perform LINE CHECK as simulated missions or the quality of the LINE CHECK might not be optimal due to weather conditions. Being able to perform some elements of the LINE CHECK (i.e. the airborne portion) in a LOFT scenario in a suitable FSTD could be very beneficial for ensuring quality of the checking.</p>
response	<p>Accepted</p> <p>Please refer to topic ‘TCM training’.</p>

comment	<p>361</p> <p style="text-align: right;">comment by: <i>Vereinigung Cockpit</i></p> <table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;"><b>AMC1</b></td> <td style="width: 25%;"><b>SPA.HEMS.120(a)</b></td> <td style="width: 10%;"><b>(1)</b></td> <td style="width: 15%;"><b>HEMS</b></td> <td style="width: 15%;"><b>operating</b></td> <td style="width: 20%;"><b>minima</b></td> </tr> <tr> <td><b>HEMS</b></td> <td><b>VFR</b></td> <td><b>MINIMA:</b></td> <td><b>DISTANCE</b></td> <td><b>TO</b></td> <td><b>OBSTACLES</b></td> </tr> </table> <p>[page 41 in the NPA]</p> <p>In Germany the vast majority of the hospitals is located in congested areas. In addition many German cities base their rescue system on HEMS air assistance like Hamburg, Berlin, Leipzig to meet the medical-response-time requirements and for the health of the Patients.</p> <p>The minimas for distance to obstacles in congested areas will inhibit nearly any HEMS operation in limited weather situations.</p> <p>Request:                  Add to this para a limited weather ops regulation, that the minimas mentioned in (2) can be used for congested areas, if weather does not allow operation according to minimas mentioned in (1)</p> <p>Like the rule is</p> <p><b><u>Regulation:</u></b></p>	<b>AMC1</b>	<b>SPA.HEMS.120(a)</b>	<b>(1)</b>	<b>HEMS</b>	<b>operating</b>	<b>minima</b>	<b>HEMS</b>	<b>VFR</b>	<b>MINIMA:</b>	<b>DISTANCE</b>	<b>TO</b>	<b>OBSTACLES</b>
<b>AMC1</b>	<b>SPA.HEMS.120(a)</b>	<b>(1)</b>	<b>HEMS</b>	<b>operating</b>	<b>minima</b>								
<b>HEMS</b>	<b>VFR</b>	<b>MINIMA:</b>	<b>DISTANCE</b>	<b>TO</b>	<b>OBSTACLES</b>								



(a) Except when necessary for take-off or landing, a HEMS flight in VFR shall only be performed:  
 (1) over the congested areas of cities, towns or settlements or over an open-air assembly of persons at a height equal to or above 300 m (1 000 ft) above the highest obstacle within a radius of 600 m from the aircraft;  
 (2) elsewhere than as specified in (1), at a height equal to or above 300 ft above the ground or water, or 300 ft above the highest obstacle within a radius of 150 m (500 ft) from the aircraft.

**Concern**

HEMS operations in congested areas (like city rescue) in bad weather situations and a cloud base of below approx. 1200ft is no longer possible. Same appears in case of bad weather ops at HEMS operation minima outside congested areas, where they have to bring the patient to a site within a congested area.

**Suggestion**

We suggest

(a) Except when necessary for take-off or landing, a HEMS flight in VFR shall only be performed:  
 (1) over the congested areas of cities, towns or settlements or over an open-air assembly of persons at a height equal to or above 300 m (1 000 ft) above the highest obstacle within a radius of 600 m from the aircraft. **If weather situation will not allow and it is necessary for the execution of the HEMS operation, the height and distances can be reduced to (2).**

response Noted  
 Please refer to topic 'VFR minima'.

comment 366 comment by: *tim saueressig*  
 HEMS VFR MINIMA: Distance to obstacles  
 Gentlemen, who comes up with such ideas? How do you think it's done in real life? We have to simplify rules and that is exactly the opposite! We have to stop writing rules no one can comply with in real life.  
 1. Those heights does not match with the weather minimas above.  
 2. If you state a radius then take always the same. Not over cities 600 m and otherwise 500m.

response Noted  
 Please refer to topic 'VFR minima'.

comment 380 comment by: *European Cockpit Association*  
 Commented text:  
**AMC1 SPA.HEMS.105 HEMS HEC operations (f)**  
 ECA's comment:  
 Regulation:





*(f) A pilot involved in HEMS HEC operations should be trained and experienced as defined in paragraphs (b) and (d) of AMC1 SPO.SPEC.HEC.100.*

It all seems straight forward. But **AMC1 SPO.SPEC.HEC.100, (d) (2) (ii) (C)** requires HESLO type 1 or 2 completed before completing training. To the best of our knowledge, all operators/crews that are presently performing HEC would have to meet the requirements for HESLO 2 given the typical length of the cargo sling. To do that, the combined hours and HESLO cycles of flight instruction would be 7 (5 hours for HESLO 1, 2 hours for HESLO 2) and 70 cycles (50 cycles for HESLO 1 and 20 cycles for HESLO 2). In addition, before acting unsupervised, the pilot must have (under supervision) 13 hours (8 hours for HESLO 1 and 5 hours for HESLO 2) and 130 cycles (80 HESLO cycles for HESLO 1 and 50 cycles for HESLO 2). This totals 20 hours and 200 cycles of training and supervision. On top of that, there must be 10 HESLO missions (5 for HESLO 1 and 5 for HESLO 2).

If we continue, **AMC1 SPO.SPEC.HEC.100, (d) (2) (iii) (C) (iii)** requires that the flight instruction and supervision is performed by a HESLO instructor and that it should take place during HESLO missions. Here it must be noted that the following text is included:

*“For the purpose of this AMC, a HESLO mission is defined as a flight or series of flights from point A to point B on a particular day and for commercial specialized operations, for a particular client.”*

This would then preclude that the necessary HESLO missions could be simulated.

Furthermore, **AMC1 SPO.SPEC.HEC.100, (d) (5) (ii) (C)** sets requirements on the HEMS HEC instructor, and those requirements are not problematic, I believe, but the requirements for a HESLO instructor **AMC1 SPO.SPEC.HESLO.100 (f) (i)** are. The minimum experience level for a HESLO instructor are among other things 500 hours of HESLO and to have attended the ‘teaching and learning’ part of the flight instructor or type rating instructor training, or have prior experience as an aerial work instructor subject to national rules. The teaching and learning part is not an issue, but the 500 hours of HESLO experience can be very difficult to meet for, we believe, the bulk of the European HEMS operators apart from operators from countries (i.e. Switzerland and Austria) where helicopters are used en masse for sling load and pilots with ample sling load experience are easy to come by.

### **Concern**

Given these requirements, and provided that our interpretation and assumptions are correct, it may be quite difficult for many HEMS operators in Europe that presently also perform rescue operation by means of HEC Cargo Sling Operations, to (1) recruit suitable personnel that are also experienced enough for HEC and when not (2) to train them within a realistic personnel resource and economic framework. Furthermore, we do believe that many HEMS operators would struggle to find instructors that have 500 hours of HESLO experience. Again, the latter probably does not apply to countries where sling load operation is performed en masse. While the requirements make very good sense for countries with complex environment and mission profiles, our concern is that the requirements are too high for countries where the nature of the activity is rather simple and have rather low complexity.



**Suggestion**

The ECA believe that the ECA should also ensure that operators should not subject to unnecessary training requirements. In this case, it could also have a safety implication as some operators might not be able to recruit/employ the most suitable pilots for their (HEMS) operation. This could example be that rather than employing pilots with the right experience in IFR, NVIS, SAR or other relevant experience for HEMS as preferred by the company, are forced to recruit pilots with the sufficient underslung operation experience instead.

For that reason, we suggest the following:

- That the HESLO mission defined, **AMC1 SPO.SPEC.HEC.100, (d) (2) (iii) (C) (iii)** can be performed on representative simulated missions.
- That for HEMS HEC, the experience, training, supervision and instructor experience requirements for HESLO 1 and HELSO 2 is not necessary and that the experience, training, supervision and instructor experience should be based on the nature and complexity of the activity. Obviously, risk analysis by the operator and approval by the authority would anyhow be required.
- A clarification whether the HEMS HEC instructor must meet the minimum experience level for a HESLO in **AMC1 SPO.SPEC.HESLO.100 (f) (i)** or if the instructor requirements required in **AMC1 SPO.SPEC.HEC.100, (d) (5) (ii) (C)** when performing training to qualify a pilot for HESLO 1 and HESLO 2.

response Not accepted  
Please refer to topic 'HEMS HEC'.

comment **381** comment by: *European Cockpit Association*

Commented text:

**AMC1 SPA.HEMS.110(b) Equipment requirements for HEMS operations**

ECA's comment:

We strongly agree with this change.

response Noted  
Thank you

comment **382** comment by: *European Cockpit Association*

Commented text:

**AMC1 SPA.HEMS.110(e) Equipment requirements for HEMS operations**

ECA's comment:

We strongly agree with this change.

response Noted  
Thank you



comment	<p>383 <span style="float: right;">comment by: <i>European Cockpit Association</i></span></p> <p>Commented text: <b>AMC1 SPA.HEMS.130(a) Crew requirements</b></p> <p>ECA's comment: We strongly agree with this change.</p>
response	<p>Noted Thank you</p>
comment	<p>384 <span style="float: right;">comment by: <i>European Cockpit Association</i></span></p> <p>Commented text: <b>AMC1 SPA.HEMS.130(d) Crew requirements</b></p> <p>ECA's comment: We strongly agree with this change.</p>
response	<p>Noted Thank you</p>
comment	<p>385 <span style="float: right;">comment by: <i>European Cockpit Association</i></span></p> <p>Commented text: <b>AMC1 SPA.HEMS.130(e) Crew requirements</b></p> <p>ECA's comment: We strongly agree with this change.</p>
response	<p>Noted Thank you</p>
comment	<p>386 <span style="float: right;">comment by: <i>European Cockpit Association</i></span></p> <p>Commented text: <b>AMC1 SPA.HEMS.130(f)(1) Crew requirements</b></p> <p>ECA's comment: We strongly agree with this change.</p>
response	<p>Noted Thank you</p>
comment	<p>387 <span style="float: right;">comment by: <i>European Cockpit Association</i></span></p> <p>Commented text: <b>AMC2 SPA.HEMS.130(f)(1) Crew requirements</b></p> <p>ECA's comment: We strongly agree with this change.</p>

response	Noted Thank you
comment	<p>388 <span style="float: right;">comment by: <i>European Cockpit Association</i></span></p> <p>Commented text: <b>GM1 SPA.HERMS.130(f)(1) Crew requirements</b></p> <p>ECA's comment: We strongly agree with this change. We would like to emphasize that the requirement for OPC and Line Check has always been present for HERMS technical crew members, however it has not been followed by many operators and not enforced by many Authorities. The requirement is now clearly stated.</p>
response	Noted Thank you
comment	<p>389 <span style="float: right;">comment by: <i>European Cockpit Association</i></span></p> <p>Commented text: <b>GM2 SPA.HERMS.130(f)(1) Crew requirements</b></p> <p>ECA's comment: We strongly agree with this change. It has been different philosophy on this issue depending on Authority. This is a good clarification.</p>
response	Noted Thank you
comment	<p>391 <span style="float: right;">comment by: <i>European Cockpit Association</i></span></p> <p>Commented text: <b>AMC1 SPA.HERMS.120(a) HERMS operating minima HERMS VFR MINIMA: DISTANCE TO OBSTACLES</b></p> <p><b>Regulation:</b> <i>(a) Except when necessary for take-off or landing, a HERMS flight in VFR shall only be performed:</i> <i>(1) over the congested areas of cities, towns or settlements or over an open-air assembly of persons at a height equal to or above 300 m (1 000 ft) above the highest obstacle within a radius of 600 m from the aircraft;</i> <i>(2) elsewhere than as specified in (1), at a height equal to or above 300 ft above the ground or water, or 300 ft above the highest obstacle within a radius of 150 m (500 ft) from the aircraft.</i></p> <p><b>Concern</b> HERMS operations in congested areas (like city rescue) in bad weather situations and a cloud base of below approx. 1200 ft is no longer possible. Same appears in case of bad weather ops at HERMS operation minima outside congested areas, where they have to bring the patient to a site within a congested area.</p>

	<p><b>Suggestion</b>  ECA suggests:  (a) <i>Except when necessary for take-off or landing, a HEMS flight in VFR shall only be performed:</i>  (1) <i>over the congested areas of cities, towns or settlements or over an open-air assembly of persons at a height equal to or above 300 m (1 000 ft) above the highest obstacle within a radius of 600 m from the aircraft. <b>If weather situation will not allow and it is necessary for the execution of the HEMS operation, the height and distances can be reduced to (2).</b></i></p>
response	Noted Please refer to topic 'VFR minima'.

comment	392	comment by: <i>European Cockpit Association</i>															
	Attachment <a href="#">#8</a>																
	Commented text: <b>AMC1 SPA.HEMS.120(a) HEMS operating minima</b>																
	ECA's comment: <b>Regulation:</b> (a) <i>Table 2:</i> <i>Reduced HEMS operating minima when instructed to 'proceed VFR' following an instrument approach</i> <i>x is the distance between the missed approach point (MAPt) and the heliport or operating site</i>																
	<table border="1"> <thead> <tr> <th>x</th> <th>Visibility</th> <th>Ceiling</th> </tr> </thead> <tbody> <tr> <td><math>x &lt; 1\ 000\ m</math></td> <td>1 000 m</td> <td>MDH</td> </tr> <tr> <td><math>1\ 000\ m \leq x \leq 3\ 000\ m</math></td> <td>x</td> <td>MDH</td> </tr> <tr> <td><math>3\ 001\ m \leq x \leq 5\ 000\ m</math></td> <td>3 000 m</td> <td>MDH</td> </tr> </tbody> </table>		x	Visibility	Ceiling	$x < 1\ 000\ m$	1 000 m	MDH	$1\ 000\ m \leq x \leq 3\ 000\ m$	x	MDH	$3\ 001\ m \leq x \leq 5\ 000\ m$	3 000 m	MDH			
x	Visibility	Ceiling															
$x < 1\ 000\ m$	1 000 m	MDH															
$1\ 000\ m \leq x \leq 3\ 000\ m$	x	MDH															
$3\ 001\ m \leq x \leq 5\ 000\ m$	3 000 m	MDH															
	Remark: From our experience it makes no sense to reduce the visibility minima above the VFR minima; for helicopter operations these minima are sufficient. We therefore suggest:																
	<b>Suggestion:</b> (a) Table 2 Reduced HEMS operating minima - when instructed to 'proceed VFR' following an instrument approach x is the distance between the missed approach point (MAPt) and the heliport or operating site																
	<table border="1"> <thead> <tr> <th>x</th> <th>Visibility</th> <th>Ceiling</th> </tr> </thead> <tbody> <tr> <td><math>x &lt; 800\ m</math></td> <td><b>800 m day / 1 000 m night</b></td> <td>MDH</td> </tr> <tr> <td><math>800\ m \leq x \leq 1\ 500\ m</math></td> <td>x</td> <td>MDH</td> </tr> <tr> <td><math>1\ 501\ m \leq x \leq 3\ 000\ m</math></td> <td><b>1 500 m day / x night</b></td> <td>MDH</td> </tr> <tr> <td><math>3\ 001\ m \leq x \leq 5\ 000\ m</math></td> <td><b>1 500 m day / 3 000 m night</b></td> <td>MDH</td> </tr> </tbody> </table>		x	Visibility	Ceiling	$x < 800\ m$	<b>800 m day / 1 000 m night</b>	MDH	$800\ m \leq x \leq 1\ 500\ m$	x	MDH	$1\ 501\ m \leq x \leq 3\ 000\ m$	<b>1 500 m day / x night</b>	MDH	$3\ 001\ m \leq x \leq 5\ 000\ m$	<b>1 500 m day / 3 000 m night</b>	MDH
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$3\ 001\ m \leq x \leq 5\ 000\ m$	<b>1 500 m day / 3 000 m night</b>	MDH															



response	In case of problems with readability - see attached JPG file.
response	Noted Please refer to topic 'VFR minima'.
comment	397 <span style="float: right;">comment by: <i>Mario Tortorici</i></span>  1. We fully agree that rescue operations other than SAR have to be included in PART.HEMS. We ask to add in GM1 SPA.HEMS.100(a) the explanation that "SAR" has to be understood as " <i>an institutional service mainly for the purpose of providing assistance to aircraft, as required by ICAO</i> ". This important clarification should not remain only in the summary of the NPA, as it is now, but we do not consider appropriate to give to it the status of official definition in Annex 1 of Air OPS. In this case GM seems the right location.
response	Noted Please refer to topic 'GM1 SPA.HEMS.100'.
comment	398 <span style="float: right;">comment by: <i>Mario Tortorici</i></span>  1. We fully support the new provisions about TCM training and checking syllabus (AMC2 SPA.HEMS.130(f)(1), given the important task to assist the pilot during Single Pilot HEMS flights.
response	Noted Thank you Please refer also to topic 'TCM training'.
comment	404 <span style="float: right;">comment by: <i>Mario Tortorici</i></span>  1. Proposed text for AMC1 SPA.HEMS.130(e) (a) is not consistent with the summary of the NPA (see page 13). In fact in accordance with the proposed text, HTCM could be positioned in the rear cabin just because the helicopter is equipped for HHO even if there is no intention to carry out HHO or even if the hoist is known to be U/S. This situation would be obviously not justified.  W Therefore, the following condition shall be inserted:  <ul style="list-style-type: none"> <li>• <i>it is reasonably likely that the hoist is going to be used</i></li> </ul>
response	Partially accepted Please refer to topic 'TCM seating'.
comment	405 <span style="float: right;">comment by: <i>Mario Tortorici</i></span>  A definition of cultural lighting (see SPA.HEMS.100(c)) is necessary since it is not a widely used and understood term. A GM could be added for this purpose.
response	Partially accepted



	Please refer to topic 'NVIS'.	
comment	406	comment by: <i>Mario Tortorici</i>
	AMCs for SPA.HEMS.130 shall be renumbered due to deletion of previous item (b)	
response	Partially accepted	
comment	415	comment by: <i>FNAM/SNEH</i>
	SPA.HEMS.110(d) Monitoring the individual experience and briefing on hypoxia and short high altitude flights pilote-by-pilote seems to be a very restrictive constraint for french operators when no incident have never ocured due to hypoxia in French mountain.	
response	Noted Please refer to topic 'Oxygen 3'.	
comment	416	comment by: <i>FNAM/SNEH</i>
	GM1 SPA.HEMS.100(a) Point (d) of this GM proposes to allow operations in CP3 above 10 000ft for take-off, landing and HEMS HEC operations while no operation is performed at this altitude. FNAM and SNEH propose to lower this altitude limit to 6 000ft in order to allow mountain operators (ie. Alps) to carry out missions in CP3 during, for example, rescue missions on ski runs.	
response	Noted Please refer to topic 'Performance'.	
comment	417	comment by: <i>FNAM/SNEH</i>
	AMC1 SPA.HEMS.120(a) The proposal to reduce operational minima from 3000m to 1500m of visibility at very low altitude (300ft) is in total contradiction with the whole text which is very restrictive. This regulatory change reduces the safety of helicopter flights by allowing flights with such low visibility. Depending on the region, this proposal could significantly reduce the level of flight safety.	
response	Noted Please refer to topic 'VFR minima'.	
comment	418	comment by: <i>FNAM/SNEH</i>
	AMC1 SPA.HEMS.120(d) & AMC2 SPA.HEMS.130(f)(1) The mandatory training for TCM on navigation does not seem necessary for the use of the HEMS minima, with low flying altitudes and visibility. It is essential that TCM concentrate on their anticollision task. French HEMS missions consist mainly of inter-hospital flight transfers on an average distance of 50 NM and of few rescue flights of 20 NM all in VFR rules.	

	<p>During inter-hospital transfer operations, pilots do not require navigation support from TCM, in particular with regard to the means of navigation available in helicopters, the small distances travelled and the fact that pilots and all French HEMS helicopters are already equipped with SAS or autopilot according to the old national OPS 3 regulation.</p>
response	<p>Noted Please refer to topic 'VFR minima' and 'TCM training'.</p>
comment	<p>419 <span style="float: right;">comment by: <i>FNAM/SNEH</i></span></p> <p>AMC1 SPA.HERMS.130(e) The inexperienced TCM concept (+ 50 missions) / experienced pilot (+ 100 HdV on the type) seems unmanageable for French operators due to the complexity involved in the planning and the scheduling of crews in France. This point does not raise any issue, it is already managed in the companies with SMS and does not require any change.</p>
response	<p>Noted Please refer to topic 'TCM training'.</p>
comment	<p>420 <span style="float: right;">comment by: <i>FNAM/SNEH</i></span></p> <p>AMC1 SPA.HERMS.130(f)(1) Provisions already in force allow operators who wish to increase the additional tasks assigned to TCMs to do so, in addition to mandatory tasks. It therefore seems inappropriate to make optional current tasks mandatory. The assignment of tasks such as navigation, which is part of the piloting of the aircraft, may eventually result in a serious social conflict. Moreover, the proposed training programme seems to be too difficult to fulfil and too much exhaustive compared to the operations actually carried out.</p>
response	<p>Noted Please refer to topic 'VFR minima' and 'TCM training'.</p>
comment	<p>427 <span style="float: right;">comment by: <i>SAF</i></span></p> <p>SPA.HERMS.110(d) Monitoring the individual experience and briefing on hypoxia and short high altitude flights pilote-by-pilote seems to be a very restrictive constraint for french operators when no incident have never occurred due to hypoxia in French mountain.</p>
response	<p>Noted Please refer to topic 'Oxygen 3'.</p>
comment	<p>428 <span style="float: right;">comment by: <i>SAF</i></span></p> <p>GM1 SPA.HERMS.100(a) Point (d) of this GM proposes to allow operations in CP3 above 10 000ft for take-off, landing and HEMS HEC operations while no operation is performed at this altitude.</p>





	SAF proposes to lower this altitude limit to 6 000ft in order to allow mountain operators (ie. Alps) to carry out missions in CP3 during, for example, rescue missions on ski runs.	
response	Noted Please refer to topic 'Performance'.	
comment	429	comment by: SAF
	AMC1 SPA.HERMS.120(a) The proposal to reduce operational minima from 3000m to 1500m of visibility at very low altitude (300ft) is in total contradiction with the whole text which is very restrictive. This regulatory change reduces the safety of helicopter flights by allowing flights with such low visibility. Depending on the region, this proposal could significantly reduce the level of flight safety.	
response	Noted Please refer to topic 'VFR minima'.	
comment	430	comment by: SAF
	AMC1 SPA.HERMS.120(d) & AMC2 SPA.HERMS.130(f)(1) The mandatory training for TCM on navigation does not seem necessary for the use of the HERMS minima, with low flying altitudes and visibility. It is essential that TCM concentrate on their anticollision task. French HERMS missions consist mainly of inter-hospital flight transfers on an average distance of 50 NM and of few rescue flights of 20 NM all in VFR rules. During inter-hospital transfer operations, pilots do not require navigation support from TCM, in particular with regard to the means of navigation available in helicopters, the small distances travelled and the fact that pilots and all French HERMS helicopters are already equipped with SAS or autopilot according to the old national OPS 3 regulation.	
response	Noted Please refer to topic 'VFR minima' and 'TCM training'.	
comment	431	comment by: SAF
	AMC1 SPA.HERMS.130(e) The inexperienced TCM concept (+ 50 missions) / experienced pilot (+ 100 HdV on the type) seems unmanageable for French operators due to the complexity involved in the planning and the scheduling of crews in France. This point does not raise any issue, it is already managed in the companies with SMS and does not require any change.	
response	Noted Please refer to topic 'TCM training'.	
comment	432	comment by: SAF
	AMC1 SPA.HERMS.130(f)(1)	



	<p>Provisions already in force allow operators who wish to increase the additional tasks assigned to TCMs to do so, in addition to mandatory tasks. It therefore seems inappropriate to make optional current tasks mandatory. The assignment of tasks such as navigation, which is part of the piloting of the aircraft, may eventually result in a serious social conflict.</p> <p>Moreover, the proposed training programme seems to be too difficult to fulfil and too much exhaustive compared to the operations actually carried out.</p>	
response	Noted Please refer to topic 'VFR minima' and 'TCM training'.	
comment	<p>439</p> <p>comment by: <i>MBH SAMU</i></p> <p>SPA.HEMS.110(d) Monitoring the individual experience and briefing on hypoxia and short high altitude flights pilote-by-pilote seems to be a very restrictive constraint for french operators when no incident have never occurred due to hypoxia in French mountain.</p>	
response	Noted Please refer to topic 'Oxygen 3'.	
comment	<p>440</p> <p>comment by: <i>MBH SAMU</i></p> <p>GM1 SPA.HEMS.100(a) Point (d) of this GM proposes to allow operations in CP3 above 10 000ft for take-off, landing and HEMS HEC operations while no operation is performed at this altitude. HBG proposes to lower this altitude limit to 6 000ft in order to allow mountain operators (ie. Alps) to carry out missions in CP3 during, for example, rescue missions on ski runs.</p>	
response	Noted Please refer to topic 'Performance'.	
comment	<p>441</p> <p>comment by: <i>MBH SAMU</i></p> <p>AMC1 SPA.HEMS.120(a) The proposal to reduce operational minima from 3000m to 1500m of visibility at very low altitude (300ft) is in total contradiction with the whole text which is very restrictive. This regulatory change reduces the safety of helicopter flights by allowing flights with such low visibility. Depending on the region, this proposal could significantly reduce the level of flight safety.</p>	
response	Noted Please refer to topic 'VFR minima'.	
comment	<p>442</p> <p>comment by: <i>MBH SAMU</i></p> <p>AMC1 SPA.HEMS.120(d) &amp; AMC2 SPA.HEMS.130(f)(1) The mandatory training for TCM on navigation does not seem necessary for the use of the HEMS minima, with low flying altitudes and visibility. It is essential that TCM concentrate on their anticollision task.</p>	

	<p>French HEMS missions consist mainly of inter-hospital flight transfers on an average distance of 50 NM and of few rescue flights of 20 NM all in VFR rules.</p> <p>During inter-hospital transfer operations, pilots do not require navigation support from TCM, in particular with regard to the means of navigation available in helicopters, the small distances travelled and the fact that pilots and all French HEMS helicopters are already equipped with SAS or autopilot according to the old national OPS 3 regulation.</p>	
response	Noted Please refer to topic 'VFR minima' and 'TCM training'.	
comment	<p>443</p> <p>comment by: <i>MBH SAMU</i></p> <p>AMC1 SPA.HEMS.130(e)</p> <p>The inexperienced TCM concept (+ 50 missions) / experienced pilot (+ 100 HdV on the type) seems unmanageable for French operators due to the complexity involved in the planning and the scheduling of crews in France.</p> <p>This point does not raise any issue, it is already managed in the companies with SMS and does not require any change.</p>	
response	Noted Please refer to topic 'TCM training'.	
comment	<p>444</p> <p>comment by: <i>MBH SAMU</i></p> <p>AMC1 SPA.HEMS.130(f)(1)</p> <p>Provisions already in force allow operators who wish to increase the additional tasks assigned to TCMs to do so, in addition to mandatory tasks. It therefore seems inappropriate to make optional current tasks mandatory. The assignment of tasks such as navigation, which is part of the piloting of the aircraft, may eventually result in a serious social conflict.</p> <p>Moreover, the proposed training programme seems to be too difficult to fulfil and too much exhaustive compared to the operations actually carried out.</p>	
response	Noted Please refer to topic 'VFR minima' and 'TCM training'.	
comment	<p>451</p> <p>comment by: <i>Oya Vendée Hélicoptères</i></p> <p>SPA.HEMS.110(d)</p> <p>Monitoring the individual experience and briefing on hypoxia and short high altitude flights pilote-by-pilote seems to be a very restrictive constraint for french operators when no incident have never occurred due to hypoxia in French mountain.</p>	
response	Noted Please refer to topic 'Oxygen 3'.	
comment	<p>452</p> <p>comment by: <i>Oya Vendée Hélicoptères</i></p> <p>GM1 SPA.HEMS.100(a)</p>	

response	<p>Point (d) of this GM proposes to allow operations in CP3 above 10 000ft for take-off, landing and HEMS HEC operations while no operation is performed at this altitude. OYA proposes to lower this altitude limit to 6 000ft in order to allow mountain operators (ie. Alps) to carry out missions in CP3 during, for example, rescue missions on ski runs.</p> <p>Noted Please refer to topic 'Performance'.</p>
comment	<p>453 <span style="float: right;">comment by: <i>Oya Vendée Hélicoptères</i></span></p> <p>AMC1 SPA.HEMS.120(a) The proposal to reduce operational minima from 3000m to 1500m of visibility at very low altitude (300ft) is only important for operations above sea. For other operations, it is in total contradiction with the whole text which is very restrictive. This regulatory change reduces the safety of helicopter flights by allowing flights with such low visibility. Depending on the region, this proposal could significantly reduce the level of flight safety. OYA proposes to only permit this reduction of LVO to operations above seas where there are no obstacles.</p>
response	<p>Noted Please refer to topic 'VFR minima'.</p>
comment	<p>454 <span style="float: right;">comment by: <i>Oya Vendée Hélicoptères</i></span></p> <p>AMC1 SPA.HEMS.120(d) &amp; AMC2 SPA.HEMS.130(f)(1) The mandatory training for TCM on navigation does not seem necessary for the use of the HEMS minima, with low flying altitudes and visibility. It is essential that TCM concentrate on their anticollision task. French HEMS missions consist mainly of inter-hospital flight transfers on an average distance of 50 NM and of few rescue flights of 20 NM all in VFR rules. During inter-hospital transfer operations, pilots do not require navigation support from TCM, in particular with regard to the means of navigation available in helicopters, the small distances travelled and the fact that pilots and all French HEMS helicopters are already equipped with SAS or autopilot according to the old national OPS 3 regulation.</p>
response	<p>Noted Please refer to topic 'VFR minima' and 'TCM training'.</p>
comment	<p>455 <span style="float: right;">comment by: <i>Oya Vendée Hélicoptères</i></span></p> <p>AMC1 SPA.HEMS.130(e) The inexperienced TCM concept (+ 50 missions) / experienced pilot (+ 100 HdV on the type) seems unmanageable for French operators due to the complexity involved in the planning and the scheduling of crews in France. This point does not raise any issue, it is already managed in the companies with SMS and does not require any change.</p>
response	<p>Noted</p>

Please refer to topic 'TCM training'.

comment	456	comment by: <i>Oya Vendée Hélicoptères</i>
	<p>AMC1 SPA.HEMS.130(f)(1)</p> <p>Provisions already in force allow operators who wish to increase the additional tasks assigned to TCMs to do so, in addition to mandatory tasks. It therefore seems inappropriate to make optional current tasks mandatory. The assignment of tasks such as navigation, which is part of the piloting of the aircraft, may eventually result in a serious social conflict.</p> <p>Moreover, the proposed training programme seems to be too difficult to fulfil and too much exhaustive compared to the operations actually carried out</p>	
response	<p>Noted</p> <p>Please refer to topic 'VFR minima' and 'TCM training'.</p>	

comment	457	comment by: <i>Oya Vendée Hélicoptères</i>
	<p>AMC1 SPA.HEMS.130(f)(1)</p> <p>Provisions already in force allow operators who wish to increase the additional tasks assigned to TCMs to do so, in addition to mandatory tasks. It therefore seems inappropriate to make optional current tasks mandatory. The assignment of tasks such as navigation, which is part of the piloting of the aircraft, may eventually result in a serious social conflict.</p> <p>Moreover, the proposed training programme seems to be too difficult to fulfil and too much exhaustive compared to the operations actually carried out</p>	
response	<p>Noted</p> <p>Please refer to topic 'VFR minima' and 'TCM training'.</p>	

comment	482	comment by: <i>Civil Aviation Authority of Norway</i>
	<p>Comment to GM1 SPA.HEMS.100(a):</p> <p>The new last paragraph of (a) is not useful. It must be remembered that what is a crisis situation for the individual(s) in distress is supposed to be a normal operation for the HEMS (or SAR) helicopter crew. That is the basis for regulating these operations, allowing it to happen, acknowledging a certain increased risk, but in a managed way. As opposed to just letting anyone jump in a helicopter and set off in assistance.</p>	
response	<p>Partially accepted</p> <p>Please refer to topic 'GM1 SPA.HEMS.100'.</p>	

comment	483	comment by: <i>Civil Aviation Authority of Norway</i>
	<p>Comment to GM1 SPA.HEMS.100(d):</p> <p>New (d) states that it was necessary. This is not accepted as an argument. It is not necessary and such operations could rather be performed as a SAR operation, by a HEMS helicopter/crew, provided they were properly equipped, trained and approved.</p>	

response	Noted Please refer to topic 'Definition and scope of HEMS'.
comment	484 <span style="float: right;">comment by: <i>Civil Aviation Authority of Norway</i></span> Comment to GM1 SPA.HEMS.100(a)(d): The considerations for high altitude operations are supported.
response	Noted Please refer to topic 'Performance'.
comment	485 <span style="float: right;">comment by: <i>Civil Aviation Authority of Norway</i></span> Comment to GM1 SPA.HEMS.100(c): The requirements here rely heavily on references to SPO.HEC, and this illustrates clearly that this is not an operation to CAT standards, and thus does not belong under SPA.HEMS which is a CAT operation.
response	Not accepted Please refer to topics 'HEMS HEC' and 'Definition and scope of HEMS'.
comment	486 <span style="float: right;">comment by: <i>Civil Aviation Authority of Norway</i></span> Comment to AMC1 SPA.HEMS.105 (g) (if this should be included) A 2 year checking interval for HEC operations is too infrequent, at least an annual check should be required and a currency requirements should be defined for the entire crew, possibly at an interval of 90 days.
response	Accepted
comment	487 <span style="float: right;">comment by: <i>Civil Aviation Authority of Norway</i></span> Comment to AMC1 SPA.HEMS.120 (a): HEMS VFR minima (a)(2) will require a permission from the competent authority in the state where the operation takes place according to SERA 5005(f). This should be specified to avoid misunderstandings. This AMC cannot override SERA 5005 (f) and substitute such a permission.
response	Not accepted Please refer to topic 'VFR minima'.
comment	488 <span style="float: right;">comment by: <i>Civil Aviation Authority of Norway</i></span> Comment to AMC1 SPA.HEMS.125(b)(4): The minimum size of HEMS operating sites has been significantly changed without any justification and what remains is perhaps not worth having, as it is fairly obvious that it needs to be big enough, and that is anyway already covered in CAT.OP.MPA.105.



	It may be that this has been an unnecessarily heavy requirement, but there is no explanation of the problem with it or how the new text will make things better, safety wise. Or if other sizes have been evaluated.
response	Partially accepted Please refer to topic 'HEMS operating site dimensions'.
comment	489 <span style="float: right;">comment by: <i>Civil Aviation Authority of Norway</i></span>  Comment to AMC1 SPA.HEMS.130(a): One of the number of hours required has been significantly reduced (from 500 to 100) without explanation and it is not marked in the proposal. The change may be warranted, but due process should include a justification.
response	Accepted Please refer to topic 'Flight crew training'.
comment	490 <span style="float: right;">comment by: <i>Civil Aviation Authority of Norway</i></span>  Comment to AMC1 SPA.HEMS.130(d): In (f) the important aspect of : "Handling of inadvertent IMC situations" should be included.  This is not identical to a) which appears to address a controlled transition. Loss of visual references may typically be experienced at low altitude and speed, in close proximity obstacles on all sides. This is undoubtedly a most unfavourable starting point for an instrument flight, and should have its own procedure and associated training.  If this is the starting conditions for the transition, a successful handling of this initial phase will determine if any of the other competence can be applied.  Proposal: To add bullet point: Handling of inadvertent IMC situations
response	Partially accepted Please refer to topic 'Flight crew training'.
comment	491 <span style="float: right;">comment by: <i>Civil Aviation Authority of Norway</i></span>  Comment to AMC1 SPA.HEMS.130(e), item (a): The intention of this change is unclear and not explained in the NPA. There are instances where the HEMS TCM may not be required to occupy the LH seat. If a hoist is used, that could be one example. The way this is written it is not consistent with other text which also allows the HEMS TCM to be seated in the cabin for so called HEMS HEC and when required/decided by the medical passenger (SPA.HEMS.130(d)(1)).  The text should be rewritten and should ensure that this may be acceptable, at the Commander's discretion provided (at least):

	<ul style="list-style-type: none"> <li>• It is absolutely necessary for the conduct of the mission</li> <li>• Adequate procedures are established</li> <li>• Appropriate training has been completed</li> <li>• Operations are not conducted to/from HEMS operating sites at night</li> </ul> <p>(a)(4) - the meaning of this is not clear</p> <p>It should also be noted that some operators organise this such that for HEC, the HEMS TCM is attached to the hook at the lower end of the line and the medical crewmember/-passengers performs the conning. The HEMS TCM is then not only not in the cockpit, he/she is not in the helicopter at all. This is considered perfectly acceptable, but would not be consistent with this AMC.</p> <p>This shows another aspect and argument for not complicating SPA.HEMS with rescue operations.</p> <p>The term HHO should be reserved for SPA.HHO and should not be used for just any winching, as may have been done in this NPA. It should be reserved for CAT hoisting to avoid confusion.</p>
response	<p>Noted</p> <p>Please refer to the following topics:</p> <ul style="list-style-type: none"> <li>TCM seating</li> <li>Definition and scope of HEMS</li> <li>HEMS HEC</li> </ul>
comment	<p>493 <span style="float: right;">comment by: <i>Civil Aviation Authority of Norway</i></span></p> <p>Comment to AMC1 SPA.HEMS.130(f)(1):                  (b) (2) and (3) appears to allow that if (b)(2)(i) or (ii) is applicable, the TC will not get any crew cooperation training. It should be ensured that the TC receives similar initial training.</p>
response	<p>Noted</p> <p>Please refer to topic 'Flight crew training'.</p>
comment	<p>494 <span style="float: right;">comment by: <i>Civil Aviation Authority of Norway</i></span></p> <p>Comment to AMC2 SPA.HEMS.130(f)(1):</p> <p>(f) Needs to precisely reference the requirements for the additional training requirements only, if it is decided to keep these operations in the HEMS text. For HHO and NVIS it should already, and only, be covered in SPA.HHO and SPA.NVIS.</p>
response	<p>Noted</p> <p>Please refer to topic 'TCM training'.</p>
comment	<p>495 <span style="float: right;">comment by: <i>Civil Aviation Authority of Norway</i></span></p> <p>Comment to GM1 SPA.HEMS.145(b):                  This GM asks for a means of "observing and recording local weather".</p>





response	More precise guidance should be provided, at least an explanation of what the recordings are to be used for and how long they should be stored.	Accepted
comment	501	comment by: <i>Bell Helicopter Textron Inc</i>
response	Pages 38 thru 55: Throughout the new proposed text for operational, equipment and mostly crew requirements, there are <u>many</u> instances where the word "SHOULD" is used, where one would have expected the word "WILL" or "SHALL". This is odd considering there is often an alleviation sub-paragraph included in-case previous requirements cannot be met ... Will a series of such "recommendations" really provide improved safety ?	Not accepted The use of the modal verb 'should' is standard in AMC. Please refer also to points ORO.GEN.120 and ARO.GEN.120.
comment	502	comment by: <i>Bell Helicopter Textron Inc</i>
response	In Table 2 on page 40: For clarity, the acronym MDH should be replaced with its meaning ... Minimum Decision Height ? Minimum Descent Height ? other ?	Noted Please refer to GM2 Annex I Definitions, abbreviations and acronyms.
comment	503	comment by: <i>Bell Helicopter Textron Inc</i>
response	Sub-item 15(a) on page 44: There are differences between the requirements for a "HEMS Technical Crew Member" identified here and those identified on pages 32 & 33 [Sub-item "7.(de)"]	Noted One may be part of the crew and not be seated in the front seat, e.g. cabin crew. Please refer also to topics 'Crew composition' and 'TCM seating'.
comment	513	comment by: <i>EHAC</i>
	<p><i>AMC1 SPA.HEMS.120(a) HEMS operating minima</i></p> <p><i>HEMS VFR MINIMA: DISTANCE TO OBSTACLES</i></p> <p><i>(a) Except when necessary for take-off or landing, a HEMS flight in VFR shall only be performed:</i></p> <p><i>(1) over the congested areas of cities, towns or settlements or over an open-air assembly of persons at a height equal to or above 300 m (1 000 ft) above the highest obstacle within a radius of 600 m from the aircraft;</i></p> <p><i>(2) elsewhere than as specified in (1), at a height equal to or above 300 ft above the ground or water, or 300 ft above the</i></p>	

	<p><i>highest obstacle within a radius of 150 m (500 ft) from the aircraft.</i></p> <p>please delete (a)(1) limitations and rephrase (2) as current operations in congested areas could not be continued in following situations:</p> <ol style="list-style-type: none"> <li>1. Worst weather conditions according Table 1;</li> <li>2. At the request of ATC;</li> <li>3. If patient condition dictates.</li> </ol> <p>please allow for 300 ft above the highest obstacle within a radius of 150 m (500 ft) from the aircraft also in congested areas</p>
response	<p>Noted</p> <p>Please refer to topic 'VFR minima'.</p>
comment	<p>532 <span style="float: right;">comment by: <i>DHV e.V.</i></span></p> <p>GM1 SPA.HEMS.100(e) Air ambulance</p> <p>We appreciate the intention by EASA to assume all unclear situations of patients shall result in a HEMS rescue operation. Certainly, some condition might be known, but not always the presented, available and assessable information is comprehensive enough. The flight back to the HEMS base should be possible under the HEMS definition, even when a transport of the patient by the helicopter was not indicated after a medical assessment at the scene.</p> <p>Therefore, we propose the following amendment:</p> <p>"When the medical condition of the person is not known <b>comprehensively</b> in advance, in a situation of time pressure, then this rescue operation is part of the definition of HEMS, <b>also including if the helicopter had to return to the base without a patient transport after a medical assessment of the patient at the scene.</b>"</p>
response	<p>Not accepted</p> <p>Not needed as it is already the case. Please refer also to topic 'Definition and scope of HEMS'.</p>
comment	<p>533 <span style="float: right;">comment by: <i>DHV e.V.</i></span></p> <p>AMC1.SPA.HEMS.120(a) Table 2</p> <p>There is no reason for higher VFR day minima for 'proceed VFR' flights after an IFR segment than for VFR day flights without a preceding IFR segment according to table 1.</p> <p>We propose the following amendment:</p> <p>"Reduced HEMS operating minima when instructed to 'proceed VFR' <b>in night flights following an instrument approach; visibility minima for proceed VFR day according to table 1</b>"</p>

response	Noted Please refer to topic 'VFR minima'.
comment	<p>541 <span style="float: right;">comment by: DHV e.V.</span></p> <p><b>AMC1 SPA.HEMS.130(a) Crew requirements</b> HEMS COMMANDER MINIMUM EXPERIENCE The minimum experience level for the commander who conducts HEMS flights should not be less than:..... (c) for pilots engaged in night operations, 50 hours of VMC at night including 20 hours as pilot-in- command/commander on a helicopter.</p> <p>HEMS operators are not able to recruit night experienced pilots from other services, like military. Pilots with a civilian background very often do not have a chance to build up 50 hours of night VMC/VFR experience as the majority of helicopter operations is still day operation. Out of past experience the following proposal will not lower the safety margin. Advantage should be taken out of night training in FSTD.</p> <p>(c) for pilots engaged in night operations, 30 hours of VMC at night or 30 hours of IMC day or night according to IR including 20 hours as pilot-in-command/commander of VMC at night or of IMC day or night according to IR on a helicopter or in an FSTD.</p>
response	Partially accepted Please refer to topic 'Flight crew training'.
comment	<p>542 <span style="float: right;">comment by: DHV e.V.</span></p> <p><b>AMC1 SPA.HEMS.130(d) Crew requirements</b> RECENCY <del>This recency may be obtained in a visual flight rules (VFR) helicopter using vision limiting devices such as goggles or screens, or in an FSTD.</del> INSTRUMENT FLIGHT TRAINING (a)..... (g) The instrument flight training may take place in a helicopter using vision-limiting devices such as goggles or screens, or in an FSTD. The helicopter used for the training should be the helicopter type used in the HEMS operation. The helicopter is not required to be certified for IFR operations.</p> <p>FSTDs are not available for all types of HEMS helicopters. But experience proves that a thorough IMC training in any type of certified FSTD (not type specific) is more effective than just using vision limiting devices in a helicopter for the training. Therefore DHV proposes:</p> <p>(g) The instrument flight training may take place in a helicopter using vision-limiting devices such as goggles or screens, or in an FSTD, <b>which does not need to be type specific.</b> The helicopter used for the training should be the helicopter type used in the HEMS operation. The helicopter is not required to be certified for IFR operations</p>
response	Partially accepted Please refer to topic 'Flight crew training'.



comment	<p>543 <span style="float: right;">comment by: <i>Civil Aviation Authority of Norway</i></span></p> <p>Comment to GM1 SPA.HEMS.100(e)</p> <p>It is difficult to understand what the second last two paragraph discussion is about. It adds confusion and should be significantly edited and shortened. As it stands, one is none the wiser about how different situations should be considered and what type of operation it is to be.</p> <p>having consulthed our healt authority, our distinction between HEMS and SAR is drawn the same way the line is drawn between the road ambulance service and the rescue service on the ground. It is not an ambulance mission (yet) if somebody is pinned in a car, out in rough terrain or up a mountain side. That is handled by the rescue services, typically the fire brigade in road accident cases. The same is true if a sick or injured person is located several floors up, with no elevator available. Often the firebrigade is called in to transport the stretcher down the stairs to the ambulance personell. Unlike most helicopters, the firebrigade is normally not equipped to to transport patient to hospital and they transfer the patient to an ambulance if available.</p> <p>We were told that if any specialised equipment is required, it is no longer an ambulance mission, it is rescue.</p> <p>This distiction should be considerered also for SPA.HEMS</p> <p>This does not mean that a HEMS helicopter cannot be equipped and trained to other things.</p> <p>The last sentence: "Such a rescue operation may also be conducted by a HEMS operator." should not be full stop, it should added: "provided the helicopter is properly equipped, the crew are properly training according to risk assessed procedures and the operation is approved by the appropriate authority." If the intention is to make HEC a CAT operation similar to HHO, which would beneficial if at all possible, if should also be considered to require a separate approval/SPA. It should not be considered part of the HEMS approval, as this is can be a high risk operation both for the patient and the helicopter and crew. This should not be taken lightly</p> <p>The statement in the last paragraph that when the medical situation for the patient is not known, is a sign that it is HEMS is no certainty. This is equally true for a large portion of SAR operations, and this useless as an argument for designating something as HEMS.</p>
response	<p>Noted</p> <p>Please refer to topic 'Definition and scope of HEMS'.</p>

comment	<p>544 <span style="float: right;">comment by: <i>Civil Aviation Authority of Norway</i></span></p> <p>Comment to AMC1 SPA.HEMS.120(a) Table 1</p> <p>It may time to give some credit to those using NVIS (reduced operating minima), but this is not properly explained and justified in the NPA, among other things it would be interesting to know the reliability/failure rates of the NVIS equipment currently in use. This is especially interesting for single pilot operations, as there is little or no redundancy as there is no second pilot</p>
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response	Noted Please refer to topics 'VFR minima' and 'NVIS'.
comment	545 <span style="float: right;">comment by: <i>Civil Aviation Authority of Norway</i></span>  Comment to AMC2 SPA.HERMS.130(f)(1) In (m) Use of FSTDs, the expression "... not reasonably practicable to gain access to such devices." is used for requiring the use of FSTDs. What is the precise meaning of this?  For pilots "... available ..." is used (AMC1 ORO.FC.230 item (a)(4)(ii)(A)).  Are these two terms intended to mean the same thing or does this mean something else?
response	Noted Please refer to topic 'TCM training'.

**4. Impact assessment (IA) — 4.1. Public interest sites (PISs)**

p. 56-59

comment	39 <span style="float: right;">comment by: <i>Air-Glaciers (pf)</i></span>  4.1.4 option 0
response	Not accepted Please refer to topic 'Public interest sites'.
comment	151 <span style="float: right;">comment by: <i>Swedish Transport Agency, Civil Aviation Department (Transportstyrelsen, Luftfartsavdelningen)</i></span>  4.1.3: The use of the nomenclature PIS is somewhat unfortunate. Just referring to PIS and claim that no new PIS should be established is detrimental to the understanding of the concept. The definition of PIS in (eu) 965/2012 is: 'a site used exclusively for operations in the public interest'. Hospital sites are PIS and hopefully there will be more hospitals built in the future. A better choice of words would be 'no new permits for PC2-operations at PIS' 4.1.6.4: o Answers to the questions in 4.1.6.4 ▪ One specific PIS PC2 is approved in Sweden ▪ No change ▪ N/A • 4.4.6.1: o Impact assessment ▪ The assumption that aviation background would increase the technical skill to identify damages to a hoist cable seems flawed. A pilot's license is not a proof of maintenance skills higher than for a technical crew. Evidence referred to in the text shows that pilot trained people have also missed damage. Therefore the maintenance task should only be delegated to persons with documented competency in handling aviation safety critical equipment, regardless of the type of pilot's license or crew license, or working position the person holds.



response	4.1.3. Partially accepted. Please refer to topic 'Public interest sites'. 4.1.6.4. Thank you for answering the questions. 4.4.6.1. Noted. Please refer to topic 'Maintenance'.	
comment	165	comment by: FAA
response	No comment submitted.	
comment	196	comment by: Swiss Air-Ambulance Rega
	<p>"4.1.2 [...] - At PISs, there is an opportunity to create new rooftop helipads with sufficient dimensions and obstacle clearance every time a new building is constructed at the hospital site. [...]"</p> <p>That is not the case. In particular when so-called „campus hospitals“ (often old medical centres with many different buildings on a campus) add a new or modify a building, there is very often no possibility to create a helipad with sufficient obstacle clearance.</p> <p>We propose to delete the bullet point.</p> <p>"4.1.2 [...] <del>—At PISs, there is an opportunity to create new rooftop helipads with sufficient dimensions and obstacle clearance every time a new building is constructed at the hospital site. This would allow to terminate the PIS derogation and to improve safety. These opportunities are often missed because there is no incentive to improve PISs and no deadline to phase out the current derogations;</del>"</p>	
response	Noted Please refer to topic 'Public interest sites'.	
comment	205	comment by: DRF-Luftrettung
	<p><b>4.1.6.1 PIS - Safety Impact</b></p> <p>Regarding your Approach in comparison to the safety impact, the EASA expects a positive high benefit.</p> <p>We do not agree with the manner, in which this conclusion was argued. The regulation 965-2012 states very clear and concluding, that PIS have to be in operation before Juli 2002. When member states do not stick to this implementation rule, it should have been task of the EASA in the last years, to find these member states and compare their compliance with the existing rules.</p> <p>Why should a member state, which did not stick to the rules in the past, shall change their habit and stick to the rules in the future. The only implementation of a new rule will not increase the safety for these random member States</p> <p>Even more, if the EASA closes these hospital landing sites, what will be the practical gain in safety?</p>	



	<p>The hospital will still have patients, who have to be immediately transported to hospitals with max. care capabilities. With no landing site available, the HEMS Crews will land on the parking places, on grass areas adjacent to the hospitals. This looks for us, that the EASA forbids PIS with the consequence, that the HEMS-Crews have to perform these landings according to the rules of the hems operating sites. We therefore recommend, to adjust the proposal to no benefit.</p>
response	<p>Noted Please refer to topic 'Public interest sites'.</p>

comment	<p>206 <span style="float: right;">comment by: DRF-Luftrettung</span></p> <p><b>4.1.6.2 social impact</b></p> <p>We do not see the point, how the EASA came to the conclusion, that the health services will not be affected. In the example above the patient has to be transported from the hospital to the helicopter via the public areas. It will take much more time, until the patient reaches the final hospital. Therefore we do not consider it as a good idea, to shut down existing public interest sites.</p> <p>Please reconsider, that the PIS – even if no official landing sites acc. Performance class 1 – have more safety features available as an operating site.</p> <p>Landing on the street in front of a hospital, which PIS was closed, is not an appropriate option for the increase in safety.</p> <p>Being objective we cannot go along with the EASA expectation of a neutral result. Instead we think, that the social impact has to be downgraded</p>
response	<p>Noted Please refer to topic 'Public interest sites'.</p>

comment	<p>207 <span style="float: right;">comment by: DRF-Luftrettung</span></p> <p><b>4.1.6.3 economic impact</b></p> <p>Of course, it will take time, to change the fleet management, but the option 3e – implementation period of 5 years -is not the best option, if you compare the task with the complete new regulations of the NPA.</p> <p>Nowadays many operators perform Night-Missions with two pilots and with NVIS; flights with single Pilot and HEMS-TC are only allowed in the specified areas.</p> <p>With the new NPA, it will be possible, to perform these tasks single pilot, even without HEMS TC. We think, the EASA will stick to the fact, that helicopter, which have no SAS System available, will also not have an appropriate cockpit layout for NVIS Flights.</p> <p>The praxis therefore will be, that operator of older helicopters can perform their task on night missions with one pilot without SAS and without NVIS. And that for a period of 5 years; granted by the mentioned exception.</p>
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	<p>We would like the EASA to think about that fact from the operators and pilots view of sight. This is more or less a slap into the face of all operators, which took lots of money to change their fleet and perform HEMS-Missions with modern helicopter. With the support of the competent operators, EASA should conduct a continuous monitoring over a period of minimum 5 years with the restriction, that with helicopters without SAS no night flights may be conducted</p>
response	<p>Noted Please refer to topic 'Autopilots'.</p>

comment	<p>304 <span style="float: right;">comment by: <i>Stephanie Selim</i></span></p> <p>4 Impact assessment (p56)</p> <p>About PIS:</p> <p>Currently in France, there are 41 PIS with CAT.POL.H.225 approval, which is less than the situation before the implementation of AIR-OPS regulation</p> <p>DGAC hopes that this number will decrease, but DGAC is unable to quantify this potential decrease. However, DGAC doesn't expect a huge reduction of PIS number. Furthermore, PIS with unexpected aerology problems may occur and, in that case, the possibility of a derogation may be necessary.</p> <p>Regarding the proposed figures: DGAC wonder about these figures.</p> <p>For example, the safety impact of option 0 should be -1: OK. But why + 3 for option 1? Why not +1 or +2?</p> <p>Regarding the social impact: it seems to us that option 1 could have a negative impact if it prevents a hospital from being served by a PIS. It seems to us that -1 would be more appropriate.</p> <p>Regarding the economic impact: we believe that option 1 can have a much greater impact than -1.</p>
response	<p>Noted Thank you for answering the questions. Please refer to topic 'Public interest sites'.</p>

comment	<p>349 <span style="float: right;">comment by: <i>NOLAS</i></span></p> <p><b>4.1. Public interest sites (PISs)</b> We support option 1.</p>
response	<p>Noted Thank you</p>

comment	<p>521 <span style="float: right;">comment by: <i>EHAC</i></span></p> <p><i>4.1.1 Who is affected</i></p>
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response	The party affected most, being the patient, is missing.
response	Noted
comment	522 <span style="float: right;">comment by: EHAC</span>  4.1.6.2 Public interest sites (PIS)-social impact  Option 1 might have a huge impact on patient outcome and therefore shall not be rated as negligible
response	Noted Please refer to topic 'Public interest sites'.
comment	525 <span style="float: right;">comment by: EHAC</span>  4.1.6.1 Public Interest Sites (PIS)- safety impact  The need to improve safety is supported but the safety impact of option 1 cannot be rated as improve per se.  Closing PIS may lead to the use of (f.i.) the parking lot as a HEMS operating site wich does not improve safety.
response	Noted Please refer to topic 'Public interest sites'.
comment	526 <span style="float: right;">comment by: EHAC</span>  4.1.6.3 Public Interest Sites (PISs)- economical impact  It can hardly be argued that there is only a very low negative economic impact for hospitals that would need to rebuild their existing PIS due to worsening obstacle situation (they can't influence).
response	Noted Please refer to topic 'Public interest sites'.
comment	534 <span style="float: right;">comment by: DHV e.V.</span>  "4.1.2 [...] third bullet point - At PISs, there is an opportunity to create new rooftop helipads with sufficient dimensions and obstacle clearance every time a new building is constructed at the hospital site. [...]"  That is not the reality. In particular when so-called „campus hospitals“ (often old medical centres with many different buildings on a campus) add a new or modify a building, it is very often not possible to create a helipad with sufficient obstacle clearance.  We propose to delete the bullet point.



	<p>"4.1.2 [...]  <del>– At PISs, there is an opportunity to create new rooftop helipads with sufficient dimensions and obstacle clearance every time a new building is constructed at the hospital site. This would allow to terminate the PIS derogation and to improve safety. These opportunities are often missed because there is no incentive to improve PISs and no deadline to phase out the current derogations;"</del></p>
response	<p>Noted  Please refer to topic 'Public interest sites'.</p>

**4. Impact assessment (IA) — 4.2. Mountain HEMS operations and rescue operations other than SAR operations**

p. 60-63

comment	12	comment by: FOCA Helicopter Operations
	<p><b>4.2.5.3 Mountain HEMS operations and rescue operations other than SAR operations — economic impact</b>  <i>However, the economic impact of Option 2b will not be negligible for a small number of operators:  In case other than HEMS rescue operations are conducted with single-engined helicopters, the combination of Option 2a and 2b has a significant negative impact because operators will have to invest in Category A certified helicopters with significantly higher operating and capital costs.</i></p> <p><i>This negative economic impact is partly offset by the capability of Category A certified helicopters to complete the entire mission, thus avoiding the inefficiency of a rendezvous system.</i></p> <p><b>Comment:</b></p> <p>Definition: What are HEMS rescue operations?</p> <p>This negative economic impact, when all single-engine helicopters have to be replaced by CAT A certified helicopters, is not in all cases offset by avoiding the inefficiency of a rendezvous system. If a country permits to fly with single-engine helicopters to a hospital a rendezvous system is not needed in all cases.</p> <p>The national rescue system allowing the operation of single-engine helicopters, in parallel to multi-engine helicopters, to compensate the demand of rescue helicopters during seasonal peaks.  Otherwise, to be able to guarantee the same availability in turns of time, operators had to buy several CAT A helicopters only to compensate seasonal demands. Therefore, a huge economic impact would result.</p>	
response	<p>Noted  Please refer to topic 'Performance'.</p>	

comment	16	comment by: FOCA Helicopter Operations
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Attachment [#9](#)**4.2.5.1 Mountain HEMS operations and rescue operations other than SAR operations — safety impact**

*Category A helicopters appear to be safer, not only in respect of risk of engine failure and other failures due to system redundancy.*

**Disagreement:**

A dedicated scientific study analyzing the risks and the operational safety in regard of the number of engines a helicopter is equipped with is still missing. Oil and Gas industry: Actual comparisons between operations within the North Sea (only multi-engine) and the Gulf of Mexico (majority are single-engine) do not show clear evidences for one or the other type of helicopter.

During rescue missions within a mountainous environment different accidents happened the last years. They show similarities regarding the use of multi-engine helicopters in deteriorating weather conditions: Limited cockpit visibility (high nose attitude during low speed flying), strong rotor downwash, limited manoeuvrability and the remaining power margin at altitude were probably significant contributory factors for the following accidents (see the attached file):

1. **France, Massif de l'Arbizon, 20.7.2003, EC145**
2. **France, Incident, Hautes-Pyrénées, 22.1.2004, EC145**
3. **France, Hautes-Pyrénées, 5.6.2006, EC145**
4. **Switzerland, 2015:** 2 occurrences in regards to issues with downwash (falling rocks and structural damage to a hospital at its landing spot)
5. **Switzerland, 2016:** 4 occurrences, whereof two concerned downwash incidents (structural damage to a hospital at its landing spot and a damaged bike at an accident landing spot). One other case concerned the loss of a rucksack during HHO and a in the other case the winch rope was too much deployed and the part of the rope that was not under tension were caught in the patients helmet – with no further injury to the patient.
6. **Switzerland, Jungfrauoch, (3440 m), 16.4.2016, EC135**
7. **France, Hautes-Pyrénées, 20.5.2016, EC145**
8. **Switzerland, 2017:** 4 occurrences, 1 concerning a broken tree branch during HHO and 1 a lost headset, also during HHO. The 2 other cases concerned an OEI situation during HEC and in the last case the winch rope was not fully retracted.
9. **Italy, Campo Felice, 24.01.2017 AW139 EC-KJT**
10. **Italy, Cima Nambino, 5.3.2017 AW139 I-TNCC**
11. **Italy, 7.10.2017 AW139 I-TNDD**
12. **Austria, Grossglockner, 1.8.2017, MD902**
13. **Switzerland, St. Bernhard, 24.03.2018, EC135**

response

Noted  
Please refer to topic 'Performance'.

comment

31

comment by: FOCA Helicopter Operations



response	<p>Safety impact: It is highly questionable if the requirement to operate a CAT A helicopter has the positive safety impact stated in 4.2.5.1. Recent accidents have shown that even high-performance, CAT A certified helicopters are prone to accidents. It is correct that CAT A helicopters appear to be safer in respect to engine failures and failures due to systems redundancy but with reference to the data analyses in 2.1 most accidents in "mountain HEMS operations" are caused by other factors.</p> <p>The safety impact of CAT A helicopters for operations in the mountains can only be evaluated if all operational aspects are known and included in the evaluation. A dualistic system (unbiased) of having the choice (especially regarding the decision of the pilot) conducting mountain HEMS operations with CAT A and CAT B, respectively ME und SE helicopters based on a solid risk assessment most likely leads to a better safety impact.</p>
	<p>Noted Please refer to topic 'Performance'.</p>
comment	<p>36 <span style="float: right;">comment by: AIRBUS HELICOPTERS</span></p> <p><u>Impact Assessment, § 4.2.5.1 Mountain HEMS operations and rescue operations other than SAR operations - safety impact.</u></p> <p>It is proposed the following modifications:</p> <p><del>In addition, the use of Category A or Category A equivalent helicopters is an alignment with current practice and avoids a reduction of safety during the entire HEMS mission that would take place if Category B helicopters were operated in HEMS.</del></p> <p><del>Category A helicopters appear to be safer, not only in respect of risk of engine failure and other failures due to system redundancy.</del></p> <p><u>Rationale:</u> - consistency with Airbus Helicopters comment n° 32 on SPA.HEMS.125(a) and with comment n° 34.</p>
response	<p>Noted Please refer to topic 'Performance'.</p>
comment	<p>40 <span style="float: right;">comment by: Air-Glaciers (pf)</span></p> <p>4.2.4 keep option 0 the option discarded Hems to be considered as SPO or to introduce flexibility are not welcomed as they would have allowed PC3 to operate, even if there is no safety issue with PC3.</p> <p>With the option 0 we need to align the oxygen requirement to part SPO</p>
response	<p>Not accepted Please refer to the following topics: Definition and scope of HEMS</p>

	Performance Oxygen 1, 2 and 3	
comment	135	comment by: <i>Luftfahrt-Bundesamt</i>
	<p><u>4.2.5.4 Mountain HEMS operations and rescue operations other than SAR operations – conclusion</u></p> <p>If - amongst others - the primary task of the HEMS technical crew members was to assist the commander in reading the checklists, which is not always possible when seated in the cabin, Option 2c should have a negative impact on safety due to higher workload for the commander. The impact assessment should be reconsidered accordingly.</p>	
response	Noted Please refer to topics 'TCM seating' and 'TCM training'.	
comment	164	comment by: <i>FAA</i>
response	No comment submitted.	
comment	197	comment by: <i>Swiss Air-Ambulance Rega</i>
	<p>"4.2.5.1 [...] Category A helicopters appear to be safer, not only in respect of risk of engine failure and other failures due to system redundancy. [...]"</p> <p>Category A helicopters have not only a less likely failure of quite a number of critical components resulting in a safe-forced landing or a potential crash, but they provide also better protection and survivability than non-Category A helicopters in such critical situations.</p> <p>We propose the following amendment:</p> <p>"Category A helicopters appear to be safer, not only in respect of risk of engine failure and other failures due to system redundancy and provide better protection and survivability of crews and patients in case of a severe incident or accident."</p>	
response	Noted Please refer to topic 'Performance'.	
comment	351	comment by: <i>NOLAS</i>
	<p><b>4.2. Mountain HEMS operations and rescue operations other than SAR operations</b></p> <p>We support option 2a, 2b and 2c. However, the supervision and instructor experience requirements must be readdressed. It must be allowed to perform required HELSO missions as defined in <b>AMC1 SPO.SPEC.HEC.100, (d) (2) (iii) (C) (iii)</b> on representative simulated missions.</p>	
response	Noted Please refer to topic 'HEMS HEC'.	

comment	<p>504 <span style="float: right;">comment by: <i>Bell Helicopter Textron Inc</i></span></p> <p>Paras 4.2.5.1 on page 61 and 4.2.5.3 on page 62: The benefit of using twin-engine Category-A approved aircraft for high-altitude mountain Rescue/HEMS operations may be over-estimated, especially if these helicopters are NOT used at weights permitting OEI operations ... If the main risk to rescue/HEMS operations is considered to be "engine failure" and its probability is <math>1 \times 10^{-5}</math>, then the probability of engine failure on a single engine aircraft remains <math>1 \times 10^{-5}</math>, while it would logically be doubled (<math>2 \times 10^{-5}</math>) on a twin-engine aircraft. Considering high mountain rescue operations where performance following an engine failure is normally not expected (especially if failure at low speed, unless weights are severely restricted), the consequences of an engine failure on a single or a twin engine aircraft are likely to often be similar. Mandating multi-engine Category A aircraft for such operations may therefore not result in the expected increase in safety.</p>
response	<p>Noted Please refer to topic 'Performance'.</p>
comment	<p>511 <span style="float: right;">comment by: <i>Bell Helicopter Textron Inc</i></span></p> <p>a. 4.2.5.1 Impact Assessment – Mountain Operations requiring Cat A helicopters. Disagree with the conclusion that Cat A helicopters reduce the risk of engine failure during high altitude near the ground operations. As discussed previously, the probability of an engine failure on a twin is twice that for a single, and during low speed near the ground HEMS operations at altitude the outcome from an engine failure would be the same for both the twin and the single.</p>
response	<p>Noted Please refer to topic 'Performance'.</p>
comment	<p>535 <span style="float: right;">comment by: <i>DHV e.V.</i></span></p> <p>"4.2.5.1 [...] Category A helicopters appear to be safer, not only in respect of risk of engine failure and other failures due to system redundancy. [...]"</p> <p>Category A helicopters have not only a less likely failure of quite a number of critical components resulting in a safe-forced landing or a potential crash, but they provide also better protection and survivability than non-Category A helicopters in such critical situations.</p> <p>We propose the following amendment:</p> <p>"Category A helicopters appear to be safer, not only in respect of risk of engine failure and other failures due to system redundancy and provide better protection and survivability of crews and patients in case of a severe incident or accident."</p>
response	<p>Noted Please refer to topic 'Performance'.</p>

**4. Impact assessment (IA) — 4.3. Other than mountain HEMS operations**

p. 63-67

comment	41	comment by: <i>Air-Glaciers (pf)</i>
	4.3.4 keep option 0 and with the new basic regulation leave the NAA decide. The differences between the members (state flight, versus commercial operators, versus foundation or clubs, etc) the differences linked to health programs (who is apying for the rescue, etc..) the economical aspects requests flexibility. A one size fit all model is not appropriate. Altitude is the same accros europe but each country has it's own set of particularities and they need to be kept. We cannot change only the aviation aprt without influencing all other partners (ground rescuers, ambulance system, health system, etc.)	
response	Not accepted Please refer to topic 'Definition and scope of HEMS'.	
comment	71	comment by: <i>Aersud Elicotteri</i>
	4.3.5.4 pag 67 All helicopters in Italy in HEMS has at least the Stabilization, but more or less all helicopters are IFR certified and install a 3 or 4 axys autopilot.	
response	Noted Thank you for answering the questions.	
comment	352	comment by: <i>NOLAS</i>
	<b>4.3. Other than mountain HEMS operations</b> We support options 3a, 3b, 3c, 3d, 3e and 4.	
response	Noted Thank you	

**4. Impact assessment (IA) — 4.4. Delegation of maintenance tasks to the technical crew member**

p. 68-69

comment	122	comment by: <i>European Helicopter Association (EHA)</i>
	<b>1. 4.4.6.1 – Delegation of maintenance tasks – safety impact 68</b> TCMs should be permitted to undertake inspections of the hoist, but that any maintenance function must be undertaken by licenced personnel only	
response	Noted Please refer to topic 'Maintenance'.	
comment	136	comment by: <i>Luftfahrt-Bundesamt</i>
	<b>4.4.6.3 Delegation of maintenance tasks — conclusion</b> The economic impact is missing. The assessment should be reconsidered accordingly and could probably result in a different conclusion.	



response	Noted Please refer to topic 'Maintenance'.
comment	354 <span style="float: right;">comment by: <i>NOLAS</i></span>  <b>4.4. Delegation of maintenance tasks to the technical crew member</b> Technical crew members do not have to have an aviation background or hold a licence. If they are in charge of hoist maintenance, the risk of damage going undetected and thus resulting in lack of maintenance will increase. Safety will be affected. We support option 0.
response	Noted Please refer to topic 'Maintenance'.
comment	390 <span style="float: right;">comment by: <i>European Cockpit Association</i></span>  Commented text: <b>4.4. Delegation of maintenance tasks to the technical crew member</b>  ECA's comment: Concern: Technical crew members do not have to have an aviation background or hold a licence. If they are in charge of hoist maintenance, the risk of damage going undetected and thus resulting in lack of maintenance will increase. Safety will be affected.  <b>Suggestion:</b> <b>We suggest option 0.</b>
response	Noted Please refer to topic 'Maintenance'.

#### 4. Impact assessment (IA) – 4.5. Monitoring and evaluation – Question to stakeholders

p. 69

comment	72 <span style="float: right;">comment by: <i>Aersud Elicotteri</i></span> 4.5 pag 69 In Italy all HEMS Technical Crew Members are generally also licensed B1 technicians.
response	Noted Please refer to topic 'Maintenance'.

#### 5. Proposed actions to support implementation

p. 70

comment	42 <span style="float: right;">comment by: <i>Air-Glaciers (pf)</i></span>  Final and general comment :this NPA reflect only the view of some larger operators who wish to push the standard as high as possible due to the fact that they have
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invested in new aircraft or new system. During years they were also operating with other devices and were ok with them. Today within EASA member states we mostly have to face accident on HEMS with CAT A class 1 or 2 helicopters and the accident causes are not the number of engine they are carrying but more or less all linked to HF. The possibility to fly PC3 would allow in some european countries to start with health system and helicopter which is not possible today as way to expensive. It would be better to work on equipment and training then to regulate the number of engine. When we have to face accident like fuel starvation, collision with obstacle, loss of control, loss of component (rotor), vortex, loss of reference/visibility, etc... it would time to admit that we are not adressing the real problems correctly. The list is long enough and the report available....

response

Noted  
Please refer to topic 'Performance'.



**5. Appendix — Attachments**

 **Italian HEMS AW139 Inadvertent IMC Accident - Aerossurance.pdf**

**Attachment #1 to comment #143**

 **NPA\_2018-04\_consolidated\_internal comments final.pdf**

**Attachment #2 to comment #143**

 **Relazione EC-KJT.pdf**

**Attachment #3 to comment #173**

 **20048-AltMoC\_SPA\_HEMS\_130(e)(2)(ii)\_eng.pdf**

**Attachment #4 to comment #173**

 **FACTOR 6\_2018 posizione HTCM.pdf**


**Attachment #5 to comment #401**

 **Table 2.pdf**

**Attachment #6 to comment #105**

 **Table 3.pdf**

**Attachment #7 to comment #106**

 **AMC1 SPA.HERMS.120(a) HERMS operating minima.jpg**

**Attachment #8 to comment #392**

 **Stellungnahme NPA HERMS\_Draft\_20180713.pdf**

**Attachment #9 to comment #16**

