

Helicopter Emergency Medical Service (HEMS): Higher Availability Calls for More Stringent Safety Requirements

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ABSTRACT

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Helicopter Emergency Medical Service (HEMS) plays an important role in today’s modern societies. It quickly grew from rapid and effective rescue of persons requiring immediate care, but limited to exceptional, last resort cases and only operated in daylight and good weather conditions, to a relatively common practice, under the medical paradigm that time, i.e. rapidity of intervention, is of paramount importance.

The continuous technological development not only in the aeronautical but also in the medical field, called for changes in the aeronautical operational mode of HEMS and, at the same time, in the handling of the emergency and medical side of the operations.

Primary HEMS missions range from operations in urban environment to mountain rescue, in all weather and at night, including Search and Rescue (SAR) of victims of avalanches, land and rock slides, floods, maritime operations. Each of these scenarios may require a different composition and numerosity of crew and equipment, including animals (e.g. dogs specifically trained to locate and rescue victims of avalanches or collapsed civil infrastructures).

Secondary HEMS missions, namely the rapid transportation of patients from point to point, may require special caretaking, in terms of equipment and medical specialists in support, and ground infrastructures.

The urgency, and the risk of loss of life, inherent in operations that require HEMS intervention calls for a careful balance between the benefit that would result from a successful mission and the risk that is placed on the HEMS operators, vehicles and infrastructure. Risk of life, or severe injuries for operators in the first place; risk of substantial damage, including the economic aspects, for vehicles and operators, and risk of temporary reduction of operational capacity, which may last for long time.

Several challenges, not only technological, must be faced to improve the operational capabilities without reducing but rather increasing the safety of operations.

This paper will briefly describe the evolution of HEMS, the related technological aspects, the current state and the foreseen requirements in terms of operations in order to support the increasing demand for a higher availability of the service without impacting but, on the contrary, increasing as much as possible its safety for the operators and beneficiaries.

References

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