

## HEMS in Portugal: the past, the present and the future

### Summary

The need for a fast and reliable form of providing medical care was first identified during wartime operations, with the use of aircrafts for air medical evacuation starting as early as 1917 in World War I, historically with fixed-wing aircrafts. The first documented rotor-wing transport from a 'primary scene' took place during World War II, with helicopters gaining an increasing relevance in the following conflicts and becoming the standard for military medical evacuation (MEDEVAC). With the impact produced by the improved survivability of injured soldiers transported by helicopter to field hospitals, it was clear to extend this kind of service to the civilian society. Several countries in Europe and North America led the way by establishing programs to prove the concept. In 1970, the first permanent civil air ambulance helicopter was established, based in Harlaching hospital Munich as *Christoph 1*, being still active to present day (1603 deployments in 2022). The number of operational bases quickly expanded with new services being established across Europe and North America, and different models of exploration ranging from government-funded, donated by business enterprise or funded by public donations to fee-for-service.

In Portugal, the concept has been tested during the summer of 1996, with support of a business enterprise, and starting as a fully established government-funded program (INEM) in July 17, 1997. The program started with 2 permanent dedicated helicopters based in Lisboa and Porto, and covering 12 hours shifts, 365 days a year. Since then, the *Serviço de Helicópteros de Emergência Médica (SHEM)* evolved throughout the years to the current state today, with 4 permanent dedicated helicopters working 24/7 stretching across four locations in mainland Portugal. In Europe, the Commission Regulation (EU) No 965/2012 on air operations and its further amendments established the requirements for commercial air transport including Helicopter Emergency Medical Service operations (HEMS), and where a 'HEMS flight' is defined as a flight by a helicopter operating under a HEMS approval, with the purpose of facilitate emergency medical assistance, where immediate and rapid transportation is essential, by carrying medical personnel, medical supplies (equipment, blood, organs, drugs), or ill or injured persons and other persons directly involved.

Due to the need to be compliant with all the requirements lay down by Commission Regulation (EU) No 965/2012 and its further amendments, any Air Operator Certificate (AOC) holder providing commercial services in the SHEM roles shall ensure a multitude of requirements not limited to aircraft operations, but also including contract requirements and economics, infrastructure availability and other constraints, many times not under the operator direct responsibility but with direct implications on cost, efficiency and most important in the safety of the operations.

To date, there is no data available or study that addresses the specific needs of such operation designed for mainland Portugal, nor how efficient the current operation has been in terms of base locations and quantity, mission profiles and their relation to helicopter types, the use of HEMS versus land-based vehicles and the available aeronautical infrastructure, namely heliports, meteorological or navigation services, among others. This study aims to identify the challenges associated with this demanding operation, looking in the past and how it changed to the present, while trying to lay some guidelines for further improvements.

### Keywords

Air transport, HEMS, helicopter operations, radius of action, aeronautical infrastructures.



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