

# HAZMAT EMS TRUKC

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## BACKGROUND

Since 14 years ago, SAMUR-Protección Civil includes among its daily operations, a HAZMAT Truck to respond to EMS calls involving CBRNe (chemical, biological, radiological, nuclear, high-yield explosives) risks, MCI (mass casualty incident), urban riots and any extraordinary risk that may need logistic support to prehospital medical interventions.

A HAZMAT Truck on call 24 hs/365 days sustains this response, lead by an EMT (Emergency Medical Technician) also specialized in CBRNE, MCI incidents and urban riots among others. Up to now, former ambulances or customized vans have been exploited.

Whole truckload consists in all the necessary items to assemble several patient decontamination lines, personal protective equipment for the decontamination action team and all the supporting materials to provide of water and electricity to the lines. It also contains material and to be deployed facilities to supply a MCI such as: a medical care tent, stretchers, light bulbs, consumable material, medication, etc.

There is a need to design a specific HAZMAT vehicle in order to give a complete and unified response to these incidents and to improve EMS efficacy and efficiency in these singular events; solving problems as reduce the need of different vehicles to be able to give appropriate attention to the patients; design truckload securing and distribution, truckload accessibility issues or room for more passengers.

## METHODS.

An analysis of all the trucks and vans used during these last years was conducted; including also material transport needs and how to proper organize the HAZMAT truckload. The truckload was customized to fulfill the need arisen from real situations that needed one or several patient decontamination lines due to CBRNe risks. All based in the experience of EMTs holding these specific responsibilities, and the fleet manager's one, as they know truck technical specifications, reliability and personnel security.

## RESULTS.

The ongoing study on these incidents and the vehicles used up to now, reveal the need to implement HAZMAT Trucks with higher loading capacity, with more passenger seats and a suitable design adapted to content and carried materials. Some improvements were introduced on truckload accessibility and some new additions as light bulbs, and independent power generator.



Main content hazmat ems truck	
1	Advance health post
1	Decontaminación shower neumatic cabin
1	Decontaminación shower
4	Neumatic contaminated waste collection tray
1	Foldable contaminated waste collection tray
2	Water pump an hoses
6	Breathing apparatus
1	Encapsulated Suit level 3
8	Encapsulated Suit level 2
6	Coverall Suit level 2
12	Coverall suit level 1
1	Electric generator
1	water heater for decontamination
8	Stretchers for M.C.I.
4	Led lighting portable lamps

## Real decotaminations:



## EVOLUCIÓN 2005-2019



## CONCLUSIONS.

The option chosen was acquiring two light duty box trucks, gross weight 7.500 kg., with space for seven passengers as they include double cab.

Loading area was designed to fulfill the service actual needs. Clear improvement was made in order to have a better and quicker access the outfits and equipment. It also includes a trolley system and a hydraulic lift platform for the heavier load.

CBRNe EMT experts gave straight specifications to the vehicle body builder about distribution and load securing to optimize it through several visits to builder installations during the manufacturing process in order to perform proper monitoring.

The vehicle was equipped with auxiliary systems, such as electric generator, voltage converter with 220v sockets, scene lights and awnings, all able to turn the vehicle into a walk-in field hospital or logistic center. The final outcome is a functional, safe, and perfectly customized vehicle that also fulfills the latest emission regulations. The HAZMAT Trucks are operative since August 2018.

After several months of actual operations, some improvement ideas are considered so new designs may be implemented in the future.



## DEVELOPMENT, CONSTRUCTION AND IMPLEMENTATION:

