

TRB EMS Subcommittee ANB10(5)

EMS Safety Summit 2012

Safety Systems, Strategies and Solutions

A leading edge approach integrating ergonomics, automotive safety and cost efficiency

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Oslo and Akershus ambulance service

New Sprinter 319

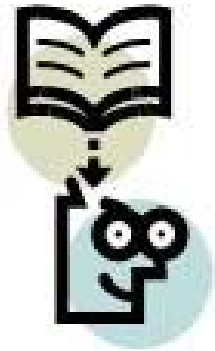


The Norwegian ambulance service

- Part of the specialist health service
- A public service
- A mix between public operated services and contractors
- Minimum competence: EMT (4 years education)
- In cities / larger services; Paramedic + one EMT (Paramedic = EMT + 2 year practice + 1 ½ (2 ½) year at a university college)
- From Q3/2013 the Paramedic education will be a 3 year bachelor degree study
- All crew need a special driver license
- A tradition to use smaller vehicles than USA and UK.

National tender for purchasing ambulances

- Must fulfill all laws and regulations
- EN 1789 standard as a minimum
- Special requirements:
 - Focus on safety
 - Focus on hygiene / easy to keep clean
 - Heating and A/C
 - Lights in the patient compartment shall comply to EN12464-1 (500Lx / CRI >80 / 3400-4300 K color temp.)
- The attendant should reach all basic equipment, communication, light and climate controls without releasing the safety belt.



Science X Education X Implementation = Survival

$$1 \times 1 \times 1 = 1$$

Focus points

- Safety
- Ergonomic
- Hygiene
- User friendly

Safety

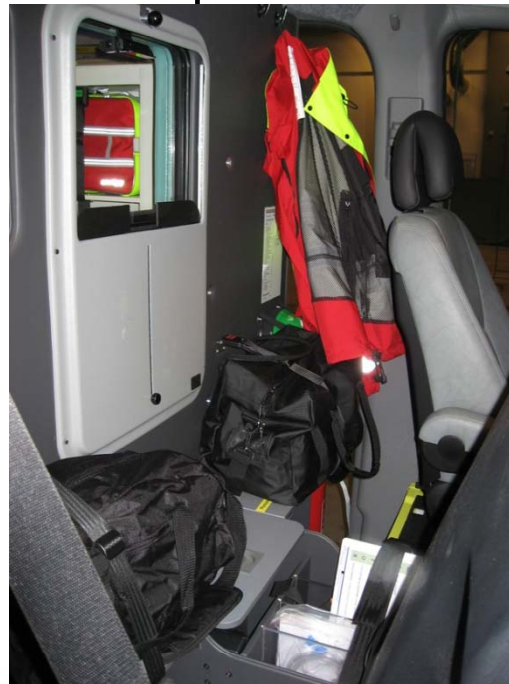
- Vehicle
 - All electronic safety systems:
 - A-ESP, ABS, etc.
 - Crashworthiness:
 - Original chassis
 - Airbags (front, thorax, curtain)
 - Seat belt tensioner
 - Internal passive safety
 - Impact zones
 - No sharp edges
 - Securing equipment



Safety

- Interior

- In the drivers compartment controls for blue lights and siren are close to the steering wheel
- Hands free solution for the Tetra radio and mobile phone
- Dual radio controls (drivers compartment and patient comp.)
- All equipment secured



Safety

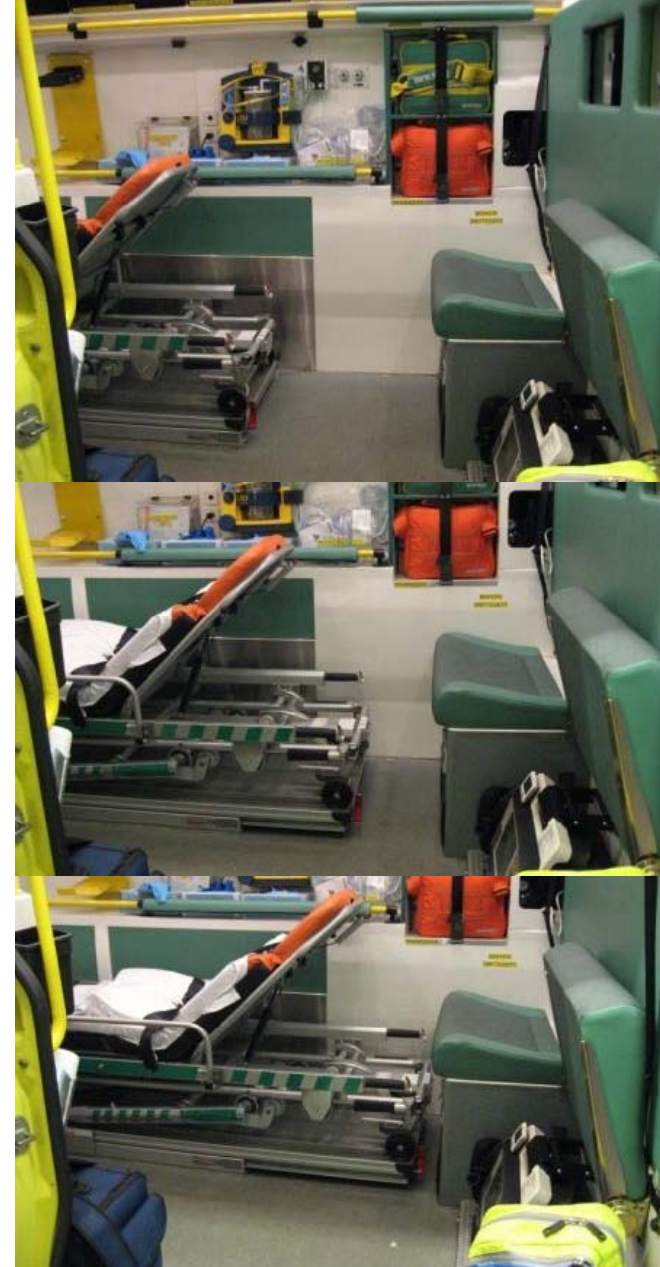


Ergonomics

- All necessary equipment should be reachable from the seats without loosening the seat belt
- The focus is on the attendant and the patient



- The stretcher platform can be moved into 3 different positions



- Most of the equipments needed outside the ambulance can be reach without going into the vehicle

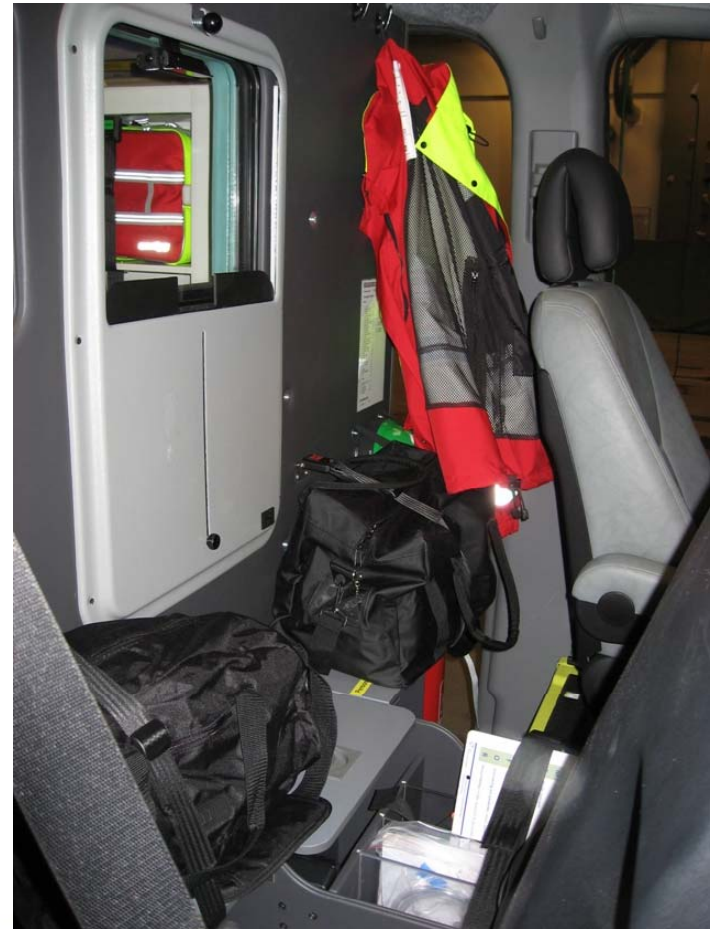


- The heaviest equipment are placed low



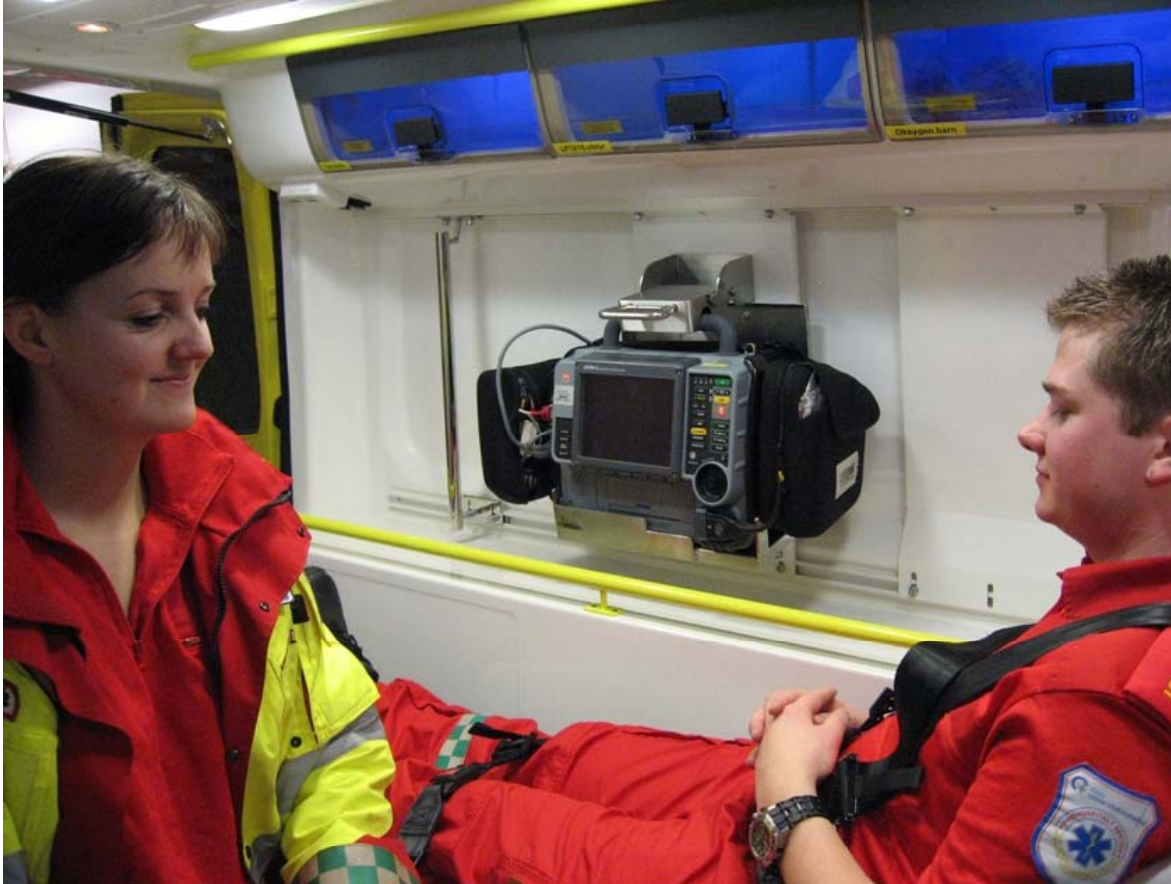
Drivers compartment

- Controls for blue light and siren close to the steering wheel + PTT for TETRA radio
- Space for helmets, jackets and bag for personal equipment



Hygiene

- All surfaces are easy cleaned
- Edges are sealed against ingress of fluids



User friendly

- All necessary equipment should be reach from the seats without loosing the seat belt



- Conceptual changes takes time
- You must work with the operational crews
- Respect their opinion, try to guide them in the right direction
- The users need to feel the own the final product
- BUT! Safety for all involved takes priority over everything else!
- You might need to educate your crew before you start a development process
- Collect all necessary documentation and make it public