

# DESIGNING *for Safety*



Two agencies discuss the measures they have taken to improve ambulance safety

By Brad Vanderlooven

## HUDSON AREA AMBULANCE

In May 2007, Hudson Area Ambulance of Hudson, MI, put into service a 2007 medium-duty C4500 Chevy chassis rig, which was custom-built by Marque Inc., out of Elkhart, IN, and was designed with safety in mind. The design includes two captain seats that can face forward and lock with three-point belts while allowing enough space to transport a second patient. All necessary supplies are within arms' reach.

The curbside entry door has been moved all the way forward for added privacy, with the ALS cabinet with inside access only blocking sight into the patient compartment. There are only two outside compartments: one for backboards, KEDs, traction splints, etc., and the other for miscellaneous equipment, including fire extinguishers and road flares. The unit is equipped with LED warning, brake, tail and turn lights.

We also added a second light bar, which is halogen, to the roof of the cab. Regular floodlights on each box side with high-intensity lights provide on-scene lighting.

Inside the unit, we have an Apollo Road Runner camera system with two cameras in place that feed to a 250Gb hard drive. One camera is mounted inside the patient compartment with the other facing forward from inside the passenger compartment. Viewing this footage, which shows vehicle speed, GPS, right turn, left turn, brake application, as well as warning light and siren activation, can be done on a separate CPU.

There are two EVS captain-style seats with three-point belts that swivel forward face. One seat on the curb side of

the box allows facing forward, as well as being able to provide patient care while belted. The second is positioned at the head of the cot. From this seat, we can provide airway maintenance, along with suction, while still being belted. The bench seat has been moved to the street side; therefore, two-patient transport is still possible. The suction unit is recessed under the bench with a three-way switch to activate it from either side of the unit.

With one of the captain seats placed on the curb side, we have also moved all radios, light switches, thermostat, inverter panel, O<sub>2</sub> and monitor brackets to the curb side, which are all accessible while facing forward and remaining belted without hindering patient care. To be belted and forward facing while still being able to provide patient care is a huge improvement in vehicle safety. •

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The curb side action area where all necessary items are within arms' reach. Starting at the captain seat: EVS with three-point belts and 90-degree swivel. At the top of the action area are all the switches for lights, HVAC and suction. Inside the cabinet are extra heart monitor supplies, hot/cold packs and extra trauma supplies. Mounted on the action area is a locking heart monitor base that withstands a 4xG-force pull. Inside the drawer are IV supplies and O<sub>2</sub> tubing, as well as the most commonly used ALS drugs (ASA, nitro, D<sub>50</sub>, and albuterol). The HEARN and MEDCOM radios have headset capabilities and also intercom and dispatch radio. All patient needs can be attended to without unbelted and, when able, the attendant can face forward.



Heavier supplies are behind the roll-up door for safety reasons. Notice the bench has been moved to the street side of the unit versus the more popular curb side. At the front of the stretcher is an EVS captain seat that allows for airway control/maintenance. Recessed under the bench seat is a suction unit that can be controlled from that seat or the action area. The EVS seat is on a 180-degree pivot that allows you to face forward when possible; it is also equipped with three-point belts.



Note the window in the patient compartment, which helps to prevent motion sickness in patients. The curbside entry door has been moved 11 inches from the front of the cab to allow for the ALS cabinet to be inside, thus eliminating inside/outside compartments. One outside compartment on the curb side houses oxygen/LBB/KED/splints, etc.