



E.G. Benedict's Ambulance Project

Client Statement (Engineering Challenge)

Here at E.G. Benedict Ambulance Company, we pride ourselves in providing the most up-to-date, cutting edge, emergency response vehicles available. Through discussions with our customers, we have identified *patient safety during transport* as a major concern. This has become a new focus for our development group. We would like you to **design a patient safety system** for our next-generation ambulance. This safety system may be limited to the safety restraints, or include vehicle modifications. Patient safety is our number one goal.

Design Project Criteria

- Design and construct a patient safety system for an ambulance.
- The safety system must keep your model patient (a raw egg) from breaking during a front-end collision.
- The safety system may be a combination of restraints and vehicle design.
- The safety system may not exceed an additional 11 grams of weight on the ambulance frame.

Materials

- Recycled building materials from home, such as assorted types of cardboard (cereal boxes, etc.), rubber bands, cotton balls, paperclips, string, packing peanuts, bubble wrap, etc.
- The teacher will supply hot glue and tape.

Deliverables

- Multi-view drawings of your patient safety system design
- 3 independent solutions with pro/con lists for each
- Completed *Ambulance Engineering Design Project Packet*
- Small-size prototype ambulance
- Project debriefing

Prototype Testing

- Simulate a front-end collision by rolling your model ambulance down the ramp.
- Start at level 1 and increase the ramp elevation with each successful crash.