TRB EMS Subcommittee ANB10(5)

EMS Safety Summit 2012

Safety Systems, Strategies and Solutions

Types of Testing for Ambulance Safety

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Director, Automotive Safety Engineering EMS Safety Foundation

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Types of Testing for Ambulance Safety

- **A Comparison of Standards and Testing**
  - Automotive
  - Medium Truck
  - Ambulance

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AUTOMOTIVE TESTING

Multitude of INDEPENDENT Testing and Standard Setting Organizations

Act to keep each other on-track for safety

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- Internal Corporate Standards
- SAE Specs (Society of Automotive Engineers)
- ISO and CEN Specs (International and European)

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Side Impact Test

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Offset Frontal Impact Test

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Roof Crush

Rollover

Seatbelt Integrity

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INDEPENDENT ADVOCATES

Public Citizen

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INDEPENDENT ADVOCATES

Public Citizen

BAD PUBLICITY

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THE FEDERAL GOVERNMENT

FEDERAL MOTOR VEHICLE SAFETY STANDARDS AND REGULATIONS

U.S. DEPARTMENT OF TRANSPORTATION

NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

NHTSA

www.nhtsa.gov

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THE FEDERAL GOVERNMENT

NHTSA

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PERFORMANCE to STANDARDS and REGULATIONS are REQUIREMENTS

AUDITED by the FEDERAL GOVERNMENT

Don't PASS - Can't SELL / RECALL

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FEDERAL SAFETY STANDARDS

Extensive Passenger Car and Light Truck Vehicle Safety Standards apply to vehicles below 10,000 pound Gross Vehicle Weight (GVW)
Type II is included

VEHICLES over 10,000 GVW (Medium Trucks) have a reduced set of Federal Safety Standards
Type I and Type III are included

VEHICLE SELECTION impacts SAFETY

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FEDERAL SAFETY STANDARDS

THESE DO NOT APPLY to MEDIUM TRUCKS	THESE DO APPLY to MEDIUM TRUCKS (and other vehicles)
Standard No. 126: Electronic Stability Control	Standard No. 205: Glazing Materials
Standard No. 201: Occupant Protection In Interior Impact	Standard No. 206: Door Locks and Door Retention Components
Standard No. 202: Head Restraints	Standard No. 207: Seating Systems
Standard No. 203: Impact Protection for the Driver from the Steering Control System	Standard No. 209: Seat Belt Assemblies
Standard No. 204: Steering Control Rearward Displacement	Standard No. 210: Seat Belt Assembly Anchorages
Standard No. 208: Occupant Crash Protection	Standard No. 213: Child Restraint Systems
Standard No. 212: Windshield Mounting	
Standard No. 214: Side Impact Protection	
Standard No. 216: Roof Crush Resistance	
Standard No. 219: Windshield Zone Intrusion	
Standard No. 225: Child Restraint Anchorage Systems	

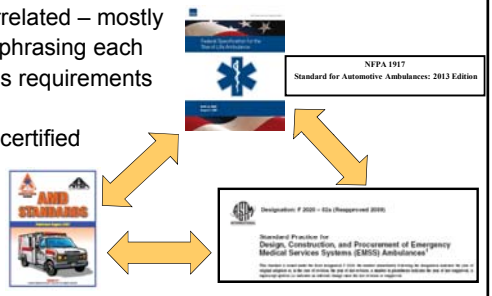
AMBULANCE STANDARDS and TESTING

Ambulance Standards and Testing

- KKK A 1822F: Purchasing Guideline
  - "Minimum Specification and performance parameters"
- AMD-001-025: Manufacturing Guideline
- ASTM F2020-02a: Standard Practice
- **NFPA 1917 Standard for Automotive Ambulances: 2013 Edition**
  - Soon to be released

Ambulance Standards and Testing

- Interrelated – mostly paraphrasing each other's requirements
- Self certified



Ambulance Standards and Testing

What is not Referenced

- DYNAMIC Crash Protection Considerations
  - Occupant Protection from Interior Impacts
  - Side Impact Protection
  - Seat Integrity
  - Seat Attachment Integrity
  - Seat Belt Attachment Integrity
  - Cabinet / Attachment Integrity
  - Cab Dynamic Structural Integrity
  - Cab Attachment Integrity
- Electronic Stability Control:
  - Not Required for Type I and III (over 10,000 GVWR)

SUMMARY

- The Automobile Industry has made great strides in Accident Avoidance and Crash Safety
- Ambulance Safety could utilize much of this knowledge but also poses unique challenges
- Ambulance Rear Compartment Integrity is a key opportunity

ESC – A LIFE SAVER

- ESC: ELECTRONIC STABILITY CONTROL

  - **Electronic stability control** systems are second only to seat belts in terms of the potential for saving lives and reducing injuries… is a major step forward for global auto safety.

Statement by Nicole Nason, Administrator, National Highway Traffic Safety Administration, On the Adoption of Electronic Stability Control as a Global Technical Regulation

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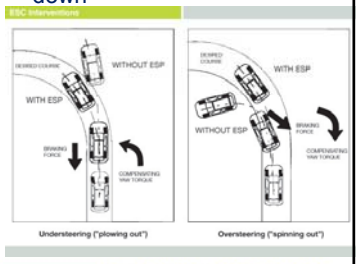
ESC – A MAJOR LIFE SAVER

Works to keep you on the road and slow you down



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