

# ***ADVANCED VEHICLE SYSTEMS***

## **Concerns for EMS**

**Coralville Fire Station  
November 12 and 13 2008  
1800**

### **Primary, Secondary & Supplemental Restraints**

- What's happening with new designs & pretensioning seat belts (ATS) & smarter airbag supplemental restraints
- FMVSS and SAE: Are Rescuers concerns about these systems Being addressed

### **Energy Management Systems**

- Boron safety cage concerns
- New "B" post designs
- Super & ultra high strength steel challenges

### **Hybrid Electric Vehicles**

- Myth, rumor & fact in vehicle crash and burn
- ISO SAE high voltage wire color guides
- HEV ERG's, do you have an SOP or SOG?

### **Hydrogen Fuel Cell Vehicles**

- On the road this year! Are you ready?
- 5K & 10k psi storage tank burn tests
- PEM cell (proton exchange membrane)

### **What's coming down the Pipeline?**

- Stability control as standard
- Active head restraints
- Pre-crash system readiness
- Pedestrian protection
- Rollover protection

First, full review of restraint systems including windshields and glass, ATS pre-tensioning seat belts, front and knee air bags, side and curtain bags. Where they are, how they work, and how to avoid accidental deployment during extrication.

Second, vehicle anatomy and changes in structural components and high strength materials used in today and tomorrow's vehicles. Sheet molded compound, carbon fiber or carbon-carbon, boron steel, ultra high strength steel & new cast alloy components are reviewed. Where they are, what you can cut, and what cannot be cut.

Third, hybrid electric vehicles or HEV's. Many myths abound and are dispelled, but they need to be identified at the crash scene or vehicle fire as there are potentially very dangerous areas. All 19 hybrids have some similarities but each emergency rescue guideline is model specific, unfortunately. All systems in these vehicles are reviewed as to develop your own standard operating procedures.

Fourth, fuel cell vehicles or FCV's. Another new drive train system hitting the road this year. Honda's FCX Clarity and GM with the Equinox HV and Chevrolet Volt. How they work, ISO standards, component configuration and 10K psi hydrogen tank and proton exchange membrane live burn tests are also viewed.

The overall goal and objective of the classes are to prepare rescuers for their and the patient's safety at a crash scene, and better educate all on vehicle technological advances. Hope see you soon!