



Keeping you Knowledgeable, Safe, and in Compliance!

**Ernest A. Emerson
Fire Protection Resource Library**

A Volume From the Library

Hybrid and Electric Vehicle Technology

Electric and hybrid vehicles have gained popularity in the last decade as gas prices and carbon emissions continue to rise. As the number of these vehicles increases, so do the number of accidents in which they are involved.

While firefighters are well trained on extinguishing and extrication techniques for cars that rely solely on internal combustion, electric cars and hybrids often require additional care due to their design. Often, simply identifying a vehicle as a hybrid is the

first hurdle, and the hazards first responders face are different due to high-voltage battery packs and unique electrical system components. Even changes to the location of vehicle elements may pose a new challenge to fire and rescue personnel.

If you are looking for training on new car technology, check out the videos we have available (below) or see the sidebar for even more resources on hybrid and electric vehicles.

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Visit us at the William B. Travis Building:
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Additional Resources:

- [NFPA Hybrid/Electric Vehicle YouTube video](#)
- [Tesla Handling for First Responders](#)
- [NFPA Alternative Fuel Vehicle training program](#)

Training Videos Listed below are some of the videos available from our lending library on this subject.

CARBUSTERS 3.1: EXTRICATION PRINCIPLES AND VEHICLE DESIGN

AV07-2158 Length: 30:00

Format: DVD

Carbusters 3.1, a six volume DVD set, is an updated version of Carbusters 3. Volume 1 creates a foundation of safe rescue practices to help rescuers reduce extrication times to less than 15 minutes, while maintaining the highest level of prehospital emergency care. The topics include the Golden Hour, power tools, hand tools, rescue action plan, preparation for rescue, arrival and setup, hazard control, stabilization, patient access, disentanglement, patient removal, termination, airbag systems, and hybrid cars. The DVD also includes slideshows and quizzes. (2003)

EMERGENCY PROCEDURES FOR GASOLINE-ELECTRIC HYBRID VEHICLES

AV06-2036 Length: 30:00

Format: DVD

Gasoline-electric hybrid vehicles

present a unique set of challenges for first responders. This course identifies those challenges and dispels common myths about the dangers of these vehicles to rescuers in a crash or fire situation. The learning objectives are: to identify current gasoline-electric hybrid vehicle manufacturers and models; to examine the basic design, operation, and components of a typical hybrid vehicle; to define the recommended eight step procedure for 'lock out/tag out' of a hybrid vehicle; to define safe and proper fire and emergency procedures for hybrids; and to discuss special considerations related to rescue and extrication for hybrid vehicles. (2006)

VEHICLE EXTRICATION: HAZARD CONTROL AND SAFETY

AV07-2108 Length: 20:44

Format: DVD

This program is Part 3 of a 7 part training series on vehicle extrication. Part 3 discusses the hazards a wrecked motor vehicle presents to the firefighter and the trapped patient and how

to mitigate the hazards. Learning objectives are: identifying glass types and glass removal techniques; identifying airbag locations and hazards; shutting down the vehicle's electrical system; identifying restraint systems; and mitigating the hazards of hybrid vehicles. (2006)

VEHICLE FIRES: NEW TECHNOLOGY AND RESPONSE

AV09-2299 Length:30:00

Format: DVD

This course presents up-to-the-minute safety tips on suppressing vehicle fires, including proper tactics, wearing PPE, and scene safety. The course showcases some examples of new types of vehicle fires, such as compressed natural gas (CNG) vehicles, electric vehicles, and gasoline-powered vehicles, with an eye on firefighter safety in suppression, salvage, and overhaul. The course describes a Seattle CNG vehicle fire and explosion and the danger it posed to responding crews. (release date 6/09, c2009)