



VITALS

For Medical Transport Professionals

A Weekly Safety Newsletter

Approaching Alternative- Fueled Vehicle Crashes



The National Highway Traffic Safety Administration (NHTSA) has recognized the dangers of Alternative- Fueled Vehicle (AFV) Crashes and published a brochure which may be obtained at www.nhtsa.dot.gov (Go to: Enforcement). The brochure points out that in AFV Crashes the first objective for Emergency Personnel is to identify the specific type of fuel and secure the scene so that rescue work can begin. Here is a summary of the NHTSA document.

The five most common types of AFVs are those powered by Liquefied Petroleum Gas (LPG), Compressed Natural Gas (CNG), Methanol, Ethanol and Electricity. Although there is no nationalized standard for AFV labeling, look for special fuel ports, distinctive profiles and any written markings.

ELECTRIC

Electric-fueled vehicles have identification symbols that contain the word electric. They may also be recognized by the presence of an electric charging port, a stepped-up roof line or a distinctive profile.

These vehicles have one battery that may be under the hood, in the trunk or under the vehicle that may reach 300 Volts. A traditional 12 volt battery is used for the radio or headlights.

If an emergency incident occurs and there is no fire or leak approach the vehicle as described above. The presence of smoke requires the use of SCBA. If there is smoke or fire present, don't approach and secure the scene. Toxic vapors, gases, and fumes may be present after the fire is extinguished. Watch for arcing under the hood. Never cut into the battery pack or traction cable. The battery pack can retain its charge even if the high voltage has been shut down.

When vehicles transporting alternative fuels or if a fueling station is involved, HazMat services must be utilized before the scene may be entered. Although CNG containers are crash and bullet resistant, ruptured fittings or lines may be the sources of dangerous leaks.

ETHANOL AND METHANOL

Ethanol and Methanol are used in a vehicle's usual fuel tanks. These are common fuels for AFV buses. If there is no fire or leak at an emergency incident, carefully approach the vehicle, turn off the driver's ignition switch and secure the vehicle. But if fire is present, stay away and secure the area. Since fires fueled by methanol or ethanol burn in bright blue, they can be difficult to see on a clear day. Both leaks and fires require fire and HazMat services. Of course we don't use flares.

LPG OR CNG

LPG and CNG powered vehicles may have identification symbols which include the words propane or natural gas. Most LPG or CNG fuel containers are found in the trunk, under a side panel for a van or school bus, and in pick up trucks may be in the bed or on the frame. Check fleet services in your area to identify groups of AFV powered vehicles.

In emergency incidents, if there is no fire or obvious leak, the vehicle should be stabilized by setting the breaks and using wheel chocks or other types of cribbing. When there is a fire or leak, don't approach the vehicle. Secure the scene with non-sparking markers. DO NOT USE FLARES. Turn both the vehicle's ignition and gas cylinder valve to the "off" position.

Approaching a scene in which a LPG or CNG vehicle is on fire or leaking fuel requires proper protective clothing and self-contained breathing apparatus (SCBA). Obviously, if you do not have the requisite training and equipment, create a safe zone and summon appropriate help.

LPG containers exposed to fire or extreme heat may create a BLEVE (boiling liquid/expanding vapor explosion). Compromised LPG fuel containers allow the fuel to convert from a liquid to a vapor that may ignite, then flash back to the fuel source. In like manner a failed CNG container can release dangerous amounts of fuel and/or flame.

PLANNING

Community wide planning should be used to educate the owners of Alternative Fueled Vehicles about their unique dangers. Medical Transportation Providers must be also be aware of the need for post-crash and have a plan of action that involves Fire Services, HazMat, or the appropriate Local Emergency Planning Committee.

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