

FIREHOUSE®

Weekly Drill

DRILL #54: SAFETY AROUND VEHICLES

Introduction

There are more vehicles on the roads today than ever before. With this increasing number also comes an increase in the different features that each vehicle offers. Green is the buzzword, as everyone is concerned with the environment. While good for the environment, green cars bring new challenges to firefighters.

Conventional Vehicles

For the most part, vehicles are still of the conventional style we have grown up with, those being powered by the internal combustion engine. Approach these vehicles with caution when responding to car fires as they pose some risks to the responders.

Any fire near the fuel tank should concern us, as we do not have good information on how long the flames have been impeding on the tank. Older models used steel tanks that could withstand some flame impingement before the seams let go, erupting into an inferno. This is no longer the case as most cars now have fuel tanks made of plastic.

All vehicle fires should be approached from the flanks to avoid being struck by an exploding bumper, which is attached to the vehicle via a shock absorber. These shock absorbers have been known to explode, launching the bumper several hundred feet. If you are in line with this launched bumper, you will be having a bad day! Additionally, struts have also been found several hundred feet away from their vehicles after exploding from fire impingement.

Alternative Fuel

Another type of vehicle we can find on the highways is the alternative-fuel powered vehicle. Over the past 10 years, many city vehicles (including buses, utility company vehicles and some delivery vehicles) have started using compressed natural gas to power their fleets. This compressed natural gas is stored in a cylinder and is generally located in the vehicle's trunk. Any time one of these vehicles is involved in an accident, a leak could result, impregnating the scene with flammable natural gas. Additionally, a BLEVE (boiling liquid expanding vapor explosion) situation is possible should one of these vehicles catch fire. Extreme caution should be used in such a situation. As a safety note, these cars should be identified by a CNG (compressed natural gas) sticker that should be mounted to the front and rear of the vehicle.



Electric and Hybrid Vehicles

Not as popular are the electric-powered vehicles. These vehicles are powered by large, onboard batteries needed to operate the electric motor. Dangers to firefighting personnel include the large amount of energy stored in the batteries, leaks from damaged batteries, and the obvious electrical shorts. Keep in mind that these vehicles are not being powered by the 12 volts we find in conventional vehicles.

More vehicles being built today to green standards are using Hybrid technology. This technology uses a combination of both electric motors and internal combustion gasoline-powered engines. The basic function of the Hybrid is that at higher speeds the vehicle is powered by the combustion engine and at lower speeds by the electrical motor.

Hybrids are more fuel efficient because the two systems work hand in hand with each other. If there is no demand for power, the electrical motor is activated and will power the vehicle until the batteries reach a point that they need to be recharged. Then, the combustion engine takes over while at the same time recharging the batteries. If you have never driven one of these vehicles, it is easy to think that the vehicle has stalled when the combustion engine is shut off and the battery powered function takes over. When stopped at a traffic light, both power supplies are shut down, this is also known as hibernating. Keep in mind that hazards associated with both conventional internal combustion engines and the electrical-powered vehicles are found on Hybrids. For your safety, learn as much as you can about these different types of vehicles motoring down our highways.

—Prepared by Russell Merrick