FIREHOUSE® Weekly Drill

Drill #128: Vehicle Fires

Introduction

The days of pulling up on a vehicle fire and dousing it with water are all but over. The components used today in the manufacturing of new vehicles are an exhaustive list, with many of these components using some extremely hazardous elements.

Cars and trucks are being built lighter than ever before in an attempt to get the best gasoline mileage from them. Magnesium is one of the major elements being used in the manufacturing in order to lighten the weight. In fact, some car companies are even fabricating engines out of magnesium. Magnesium, when burning, will react violently when water is applied. It can be quit startling if a firefighter is not prepared for such a reaction. Injuries can be imminent if the firefighter is standing right up next to the engine compartment when this reaction occurs.

Another consideration is the amount of polyvinyl chloride (PVC) material being used to lighten the load. The smoke generated from this PVC burning is extremely toxic and can be fatal in some instances when inhaled. If you are not wearing full personal protective equipment (PPE), including your self-contained breathing apparatus (SCBA), on car fires I would have you rethink your philosophy.

We are all aware of the hydraulic shock-absorbing bumpers that have been on vehicles for some years now. Should there be a large volume of fire in the area of these absorbers, it is not uncommon for them to explode sending the bumper flying. You don't want to be in front of one when it lets go. Another hazard is the struts being used on vehicles; these are just as dangerous and can be propelled several hundred feet.

Air bags have been around for more than a decade now and are still causing firefighter injuries. Firefighters have to be mindful of the locations of these air bags as they are now being used on the side windows on vehicles as well as in the dash and steering columns.

Additionally, having knowledge as to the location of the battery is helpful. Finding a battery on a car today can be like the children's book *Where's Waldo?* The battery is being placed just about anywhere a space can be found on the car.

The fuel tanks being used today are plastic, and can quickly melt should the fire extend under the chassis. When this occurs, fire can spread rapidly engulfing the vehicle and in some cases igniting exposures. Keep in mind that the fuel tank is located just under the trunk on many vehicles.

Trunks are another area that should concern firefighters, as they can be storing additional materials that can add to the hazards of the vehicle. At all vehicle fires, firefighters should be checking the trunk as you never know what you might find. Twice, I have found bodies in the trunks of cars.

Other concerns with vehicle fires are the different fuels being used. Gasoline is still the number one fuel source, but many cars are using diesel fuel, propane, methane, hydrogen, electricity and more cars are using compressed natural gas (CNG).

In all cases, firefighters should be fully protected – this means wearing all PPE and using the air provided in the cylinders of the SCBA – because by-products of combustion at vehicle fires are deadly!

–Prepared by Russell Merrick