CARVER FIRE DEPARTMENT

Standard Operating Guidelines

Section 4.18 – Vehicle Fires **June 15, 2013**

1.0 PURPOSE

The purpose of this guideline is to assure the efficient extinguishment of fires involving vehicles while maintaining the highest level of safety for all responding personnel.

1.1 SCOPE

This guideline shall apply to all vehicles that are on fire. For the purposes of this guideline, the absence of smoke or flames shall not constitute sufficient evidence that a fire condition does not exist. In the majority of vehicular fires, the vehicle will be a "total loss" and fire department intervention must never compromise safety.

1.2 SAFETY

01. Car fires can be extremely dangerous. This is partially because they are generally considered "routine". NEVER assume that it is only a car fire. It is also because of the many "surprise hazards" that are waiting for you. You must be aware of and prepare for:

- multiple or auxiliary fuel tanks
- LPG or CNG fuel cylinders and supply lines
- exploding truck wheels (heavy duty pickups)
- hazardous contents
- metal fires (engines and wheels)
- lighting components
- exploding fuel tanks
- exploding drive shafts
- exploding tires
- toxic smoke from burning materials
- gas shock absorbers
- hatchback, trunk or hood lift cylinders
- exploding batteries or multiple batteries (especially on diesel vehicles)
- air conditioning systems - high pressure hose connected to A/C equipment that may separate or burst releasing oil and pressurized freon gas.
- the presence of broken glass and other sharp objects
- the danger of hot metal surfaces

O2. Under NO CONDITIONS should the gasoline filler cap be removed. This would allow heated gasoline vapors to escape thus increasing the danger level.

03. Members engaged in firefighting operations and rescue shall wear full protective clothing and SCBA. Protective clothing should not be removed until the possibility of re-ignition has been removed and overhaul is completed.

04. Try to stabilize the vehicle as soon as possible to prevent movement.

05. If it is necessary to open the hood, hatch, or other opening, use a prop to hold it up to prevent accidental closing.

06. Disconnect the battery as soon as possible.

07. If the operation takes place in darkness, illuminate the scene as soon as practical.

08. Traffic - All personnel should be cognizant of the dangers of vehicle fires, as well as the dangers of traffic control, traffic flow, etc. Police assistance is usually required at vehicle fires. The Fire Department should consider traffic safety and flow, and should attempt to clear the scene as soon as feasible. Fire Department personnel may be used to control traffic only in extreme conditions, and must utilize safety cones, strobes, flashlights etc. and be in turnout gear and a reflective safety vest when doing so.

1.4 OPERATIONS

01. Positioning of Apparatus

As with any emergency scene, apparatus placement at motor vehicle fires is cruital to the overall ease and success of the operation. Driver Operators shall position their apparatus at the direction of the on-board Officer or the IC on scene. Generally, the suppression apparatus is placed as close to the actual fire, as conditions safely allow. Exceptions to the "rule" always exist, and circumstances may dictate otherwise, but in all cases, the IC on scene has the authority to manipulate apparatus placement.

The following items shall be considered when placing apparatus at a motor vehicle fire scene:

A. Assure that fire apparatus is positioned in a way to act as a barrier from traffic flow (highest priority). Ideally the placement would allow the driver to view the fire from the pump panel while not exposing him/her to traffic.

B. Uphill from the involved vehicle to prevent burning fuel from running toward the apparatus, or in case the vehicle start rolling.

C. Upwind from the involved vehicle to minimize smoke exposure to the apparatus operator.

D. Overall apparatus placement shall provide for a safe work environment for the fire crews working the incident.

E. Assure sufficient room for additional apparatus, ambulance etc.

02. Approach

Firefighters approaching the vehicle shall stay clear of UNSAFE AREAS.
Unsafe areas include:

A. directly facing the front or rear of the vehicle

B. directly facing the underside of the vehicle when on its side

03. Attack

A. The primary attack line shall be chosen by the riding Officer or IC at the scene. The line size and length are based on conditions at the scene such as size and type of vehicle, the distance the fire apparatus can safely operate from the involved vehicle, etc.

B. Additional lines may be deployed at the discretion of the IC. Size and length again, chosen by an Officer, based on fire conditions.

C. Class A foam should be used at motor vehicle fires and metered at .3 percent

04. Attack Guidelines

A. The primary attack line shall approach from the side or diagonal and utilize a straight stream, transitioning to a narrow fog on approach to the vehicle. The water stream shall be directed to the main body of fire to facilitate a quick knockdown.

Fuel cell cooling may be required during long duration fires and may require a dedicated line for that purpose.

B. Fire crews should gain access to the hood and trunk spaces for extinguishment if necessary. A halligan bar can best be used for accessing these spaces for fire suppression.

C. The primary line shall use proper methods to safely extinguish the motor vehicle fire.

D. Firefighters attacking the fire should position themselves on same side of advancing hose line.

E. First Firefighter shall control nozzle, second Officer/Firefighter shall assist nozzle person and third Firefighter shall assist with hose line, carry a halligan entry tool for overhaul and to also make forcible entry into engine compartment and trunk area.

F. Use extreme caution when opening the passenger, engine compartment, or trunk. Fire may flash outward when the compartment is ventilated. Always have charged hose lines available before the compartment is opened. All personnel should stand to the side when a compartment is open.

05. Fuel Spills

A. 1. A fuel tank may become ruptured during a fire or accident, causing a spill or runoff. Take precautions to contain the spill and prevent ignition.

B. Be aware of LPG, and LNG fueled vehicles. A leak involving these fuels poses special problems, as does the possibility of fuel tank rupture due to flame impingement. It is critical that these vessels be cooled during a fire.

C. Do not remove the fuel cap until you are sure that there is no excess pressure in the tank.

D. Do not turn your back on a burning vehicle. Keep hose lines charged until there is no possibility of resignation.

E. A fuel leak may be stopped by using lead wool, wood plugs, etc., or by turning off valves.

F. Be cautious of fuels containing ethanol. They are very difficult to extinguish and may require the use of a dry chemical agent.

06. Flammable Metals

A. Most motor vehicles today contain components that constructed of flammable metals such as titanium or magnesium.

B. Flammable metals are water reactive and they react violently when water is applied. The existence of flammable metals is typically discovered when violent colorful explosions occur during suppression operations. A tell-tale blue arch and explosion is common. The preferred method to extinguish flammable metal fires is by using class "D" extinguishing agents, however this is not always practical. Persistence in conventional suppression techniques utilizing water and class "A" foam is normally successful with high concentrations of water and foam being applied.

07. Overhaul-Full Protective Equipment in Place

A. After extinguishment of visible flame, the firefighters should allow the vehicle to clear of smoke and/or steam for some period of time.

B. Only when all smoke has cleared can SCBA be removed.

C. The electrical system should be secured as soon as possible by disconnecting or cutting the battery cables. Always disconnect the negative or ground cable first.

1.5 THE REPORT

The Incident Commander or his/her designee shall gather such information as necessary to file an FP32 Report or other report as may be required. Necessary information may include:

- "Normal" incident number, times, etc.
- Address of fire
- Name and driver's license of owner/operator

- Address of owner/operator
- Police officer and/or police incident number
- Damaged vehicle storage lot and wrecker service name
- VIN and license plate numbers, make, model & year of production
- Estimate of value
- Estimate (dollars or percentage) and or area(s) of loss
- Possible cause
- First material ignited
- Area of ignition
- Insurance company