# CAR FIRES



This procedure identifies operational tactics for safe handling of motor vehicle fires.

**FIRE CONTROL OPERATIONS**
The minimum level of protection for fire fighters is full protective clothing breathing air from their SCBA. Captains must wear full protective clothing in order to directly supervise crews.

The minimum size of hoseline is the 1-1/2" handline.

**APPARATUS PLACEMENT**
Apparatus should be placed upwind and uphill of the incident if possible. This is to afford protection from hazardous liquids and vapors and reduces smoke in the work area.

Consideration must be given to using the apparatus as a barrier, to shield the incident scene from traffic hazards. Warning lights should be left operating, in conjunction with the use of traffic cones where needed. The use of flares by fire and police should be used with caution; consider the potential for flammable liquids and vapors.

Additional consideration should be given to positioning the apparatus at an angle to better allow the removal of any hose from the preconnect cross-lay compartments.

**WATER SUPPLY**
If the water carried on the responding apparatus will not be sufficient, early considerations must be given to additional water supply sources. A supply line or other engines/tenders may be required. Ladder companies may be used as an improvised standpipe at incidents on elevated freeways or parking garages.

**FIRE ATTACK**
A working fire involving the interior of the vehicle passenger compartment will damage the vehicle beyond repair. As such, the attack plan should consider the vehicle as a "write off" and a safe and appropriate approach and fire attack must be implemented.

Where patients are trapped in the vehicle, first water should be applied to protect the patients and permit rescue.

When rescue is not a factor, first water should be applied for several seconds to extinguish fire or cool down the area around any fuel tanks or fuel systems. This is especially important if the fuel tanks are Liquidified Petroleum Gas (LPG) or Liquid Natural Gas (LNG).

At least one member of the attack team must have forcible entry tools in his/her possession to provide prompt, and safe entry into the vehicle.

## HAZARDS AND SAFETY CONSIDERATIONS

- Liquid Petroleum Gas (LPG) and Liquid Natural Gas (LNG) are becoming common place as fuel for vehicles. Pressure release devices can create a lengthy "blow torch" effect, or should the pressure relief device fail, a BLEVE may occur. Vehicles may not be marked to identify this fuel hazard. If there is flame impingement on a visible LPG/LNG storage tank, take action to control the fire and cool the tank.
- If vapors escaping from the storage tank relief valve have ignited, allow the LPG/LNG to burn while protecting exposures and cooling the tank. Flow of gas through piping can be controlled by shutting off the valve at the storage tank.
- Energy Absorbing Bumpers--Consist of gas and fluid filled cylinders that, when heated during a fire, will develop high pressures which may result in the sudden release of the bumper assembly. This could result in serious injury to anyone in its path. Bumper assemblies have been known to travel 25 feet.
- Batteries--Explosion hazard due to presence of hydrogen vapors. Avoid contact with battery acid. When the situation is stable, disconnect battery cables (ground cable first).
- Combustible Metals--Some vehicles have various parts made of combustible metals, such as engine blocks, heads, wheels, etc. When these metals are burning, attempts to extinguish them with water will usually add to the intensity of the fire. Large quantities of water, however, will cool the metal below its ignition temperature. After some initial intensification, the fire should go out. Dry chemical extinguishers can also be effective.
- Trunk/Rear Hatch/Engine Hoods--Hold-open devices may employ, along or in any combination with any of the following: springs, gas cylinders, extending arms, etc. When gas cylinders are exposed to heat, failure or rupture of these devices should be expected. Excessive pressure may develop in lift assists causing a trunk, hatch or hood to fly open with explosive force when the latch mechanism is released. To insure personal safety, be sure to allow sufficient clearance when releasing latches.
- Fires involving the trunk/cargo area should be approached with extreme caution. Contents may include toxic, flammable or other hazardous materials. Expect the worst!
- Fuel Tanks--May be constructed of sheet metal or plastic. A rupture or burn-through may occur with these tanks causing a rapid flash fire of the fuel. Do not remove gas cap, as tank may have become pressurized. Do not direct hose stream into tank, as this will cause pressurization of tank, with a possible result of burning fuel spewing from the tank fill opening.
- Interior--Well sealed interiors of modern vehicles present the potential for backdraft. Use caution when opening doors or breaking windows. Appropriate approach, ventilation, and safety concerns must be considered. Have a charged handline ready before making entry
- Vehicle Stability--Tires or split rims exposed to fire may explode, causing the vehicle to drop suddenly. Expect exploding rim parts or tire debris to be expelled outward from the sides. Approach from the front or rear of the vehicle for maximum protection from potential flying debris. Some larger vehicles, such as buses, employ an air suspension system. When these systems are exposed to heat or flame, they may fail, causing the vehicle to SUDDENLY drop several inches.