

# **VEHICLE FIRES**

## **STANDARD OPERATING GUIDELINE**

**DATE APPROVED: November 2007**

### **I. Scope**

This standard was promulgated to ensure the safety of members involved in suppressing motor vehicle fires.

### **II. General Guidelines**

- A. The number and variety of motorized vehicles increases each day. It is impossible to completely identify all of the problems that might be encountered while extinguishing such a fire. Nevertheless, some commonalities do exist, and the general guidelines of this standard should be followed when combating a fire in a motorized vehicle.
- B. The incident commander should always remain cautious and assume the worst until they can be certain that conditions are safe. For example, if a burning vehicle is placarded as transporting a hazardous material, assume that the incident is a haz-mat incident until it can be ascertained that no haz-mats are burning or have been released.
- C. If the fire appears to be the result of an accident, the incident commander should consider the mechanism of the accident in developing their strategy for managing the incident.
- D. The first priority is the safety of the firefighters, rescue workers, and spectators. If spectators are present, remove them to a safe distance. Do not place firefighters and rescue workers in harm's way unnecessarily. Remember, do not risk a lot for a little.
- E. The second priority at the scene of a vehicle fire is rescue. The incident commander must assume that someone is trapped in the burning vehicle until - having ascertained that all of the occupants of the vehicle have gotten out.
- F. It is important to control the flow of traffic. The need to minimize the disruption of traffic in heavily congested areas must be balanced by the need to provide for the safety of firefighters and rescue workers. If possible, direct traffic away from the incident.

### **III. Procedures**

- A. Apparatus placement:
  - 1. Position apparatus upwind and uphill from the burning vehicle when possible. This will keep the crew out of the smoke and prevent leaking fuel from running underneath the apparatus.

2. Apparatus should not be parked closer than approximately 80 feet from the burning vehicle whenever traffic conditions permit. If the burning vehicle is labeled as transporting a hazardous material, increase this distance based on the recommendations of the DOT Emergency Response Guide.
3. The driver should position the apparatus to block at least one lane of the road to create a barrier between the firefighters and oncoming traffic. Ideally, the angle of the apparatus will allow the driver to view the burning vehicle from the pump operator's position and not expose the driver to oncoming traffic.
4. Secure sufficient room for an ambulance, additional apparatus, or a med-evac helicopter in case additional resources are needed.

B. Safety precautions:

1. Members engaged in firefighting and rescue efforts shall wear full protective clothing and SCBA. Protective clothing shall not be removed until the possibility of re-ignition has been removed. At this time members should wear high visibility apparel.
2. The presence of broken glass and other sharp objects mandates that personnel wear gloves and other safety equipment to prevent the possibility of injury even after the fire has been extinguished.
3. Stabilize the burning vehicle as soon as possible to prevent movement. This may be accomplished in a variety of ways, such as using wheel chocks, cribbing, a winch, etc.
4. If it becomes necessary to open the hood, a hatch, or other opening to make a rescue or extinguish a fire, prop open the hood or hatch to prevent accidental closing due to the failure of a spring, rod, or compressed cylinder.
5. De-energize the vehicle as soon as possible by disconnecting the battery. Take care to prevent sparks in the event flammable or combustible vapors or fluids are present.
6. If the operation takes place in darkness, illuminate the scene properly. Operating members should wear turnouts or high visibility clothing with reflective materials to minimize the risk of being struck by other vehicles, including apparatus.
7. Also consider the impact of strobes and other warning lights on visibility.
8. Firefighters and rescue workers should also be aware of the hazards associated with air bags, energy-absorbing bumpers, downed or overhead power lines, hollow drive-shafts, high-pressure hoses on power steering and air-conditioning systems, air-suspension systems, and the danger of exploding tires equipped with split rims, such as the wheels used on larger vehicles and some pickup trucks.
9. Establish an adequate water supply. Hose streams should be adequate for the volume of fire. Typically, the minimum size deployed should be a 1<sup>3/4</sup>-inch. Approach the burning vehicle from upwind whenever possible.

10. *Never* stick your head inside a vehicle while it is still burning, and *never* crawl under a vehicle to extinguish a fire.
11. A variety of combustible metals are used for engine blocks, wheels, and other components. These may react adversely with water and may require the use of specialized extinguishing agents.

C. Fuel spills:

1. A fuel tank may be punctured during an accident or may fail during a fire, thereby causing a spill or runoff. Take precautions to contain the spill and prevent environmental damage. If the fuel has not ignited, take steps to minimize the chance of ignition.
2. A variety of fuels are used in motor vehicles. Of particular concern are Liquid Nitrogen Gas (LNG) and Liquid Propane Gas (LPG). A leak involving either of these fuels poses special problems, as does the possibility of a fuel tank rupture due to flame impingement. It is critical that these vessels be cooled during a fire.
3. Do not remove the fuel tank cap until you are absolutely certain that there is no excess pressure in the tank.
4. Do not turn your back on a burning vehicle, and keep charged hose lines available after extinguishment in the event of re-ignition.
5. Prohibit smoking.
6. Prevent sparking from tools, saws, etc.
7. A fuel leak may be controlled by using specialized putty, wood plugs, etc., or by turning off the fuel valves on an LNG or LPG tank.

**IV. Recommendations**

- A. Automobile dealerships are great resources. Personnel should visit them regularly and familiarize themselves with the features of new models. Unfortunately, many of the features that make vehicles safer for the motoring public pose unique hazards for firefighters.
- B. Traditionally, the motor vehicle fire has been considered by firefighters to be routine. Vehicle fires are increasingly dangerous, and firefighters should not become complacent about them.