
	<b>Standard Operating Procedures</b>	
	<b>SOP 25</b>	
	<b>Subject: Vehicle Accidents and Vehicle Fires</b>	
	<b>Approval Date: 05/2019</b>	
	<b>Date Created: 12/2014</b>	
	<b>Next Review: 05/2020</b>	
<b>Approved By: Fire Chief/Fire Marshal Brent Hahn</b>		

### 25.01 Purpose

The purpose to establish a set of procedures when responding and safe handling of motor vehicle accidents and vehicle fires.



### 25.02 Policy

The policy is designed to assist Incident Command (IC) to be make decisions at each scene, and this SOP will help each Incident Commander to make decisions regarding their role at the scene. When operating a motor vehicle incident always block traffic with the apparatus following the Traffic Incident Management Process. Kemah Fire Department (KFD) Personnel should read and follow this procedure to the best of their abilities.

### 25.03 Procedures



#### 25.03.01 Vehicle Extrication

1. Duties of Rescue Pumper Company in order of priority
  - Patient Care and Stabilization
  - Scene/Vehicle Stabilization
  - Vehicle Extrication, Forcible Entry
  - Scene Lighting
  - Assisting EMS
  - Acting as Landing Zone (LZ ) for Life Flight
2. Battery Terminals should be cut due the risk of airbags deploying.
3. Ensure adequate vehicle stabilization to protect firefighters
4. Assist EMS as directed.

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### 25.03.02 Vehicle Fires



1. IC will direct scene and coordinate attack.
2. Do not focus so closely on the fire attack that you forget about other hazards.
3. 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.
4. 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.
5. Additional consideration should be given to positioning the apparatus at an angle to better allow the removal of any hose from the pre-connect positions.
6. 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 off other engines/tankers may be required.
7. A minimum of one 1 3/4-in. hose line to combat the fire.
8. Full PPE with SCBA will be worn with all vehicle fires
9. 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.
10. Where patients are trapped in the vehicle, first foam should be applied to protect the patients and permit rescue.
11. When rescue is not a factor, first foam 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 for Liquefied Petroleum Gas (LPG) or Liquid Natural Gas (LNG).

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12. At least one member of the attack team must have forcible entry tools in their possession to provide prompt and safe entry into the vehicle.

#### 25.04 Safety

- Remember the safety of all firefighters is our primary concern.
- It is the responsibility of the IC to appoint a safety officer at the scene; otherwise IC oversees the safety of our personnel.
- All personnel are also responsible for their own safety. You are operating in an inherently hazardous environment. Hazards may affect you at any time. It is critical that you remain extremely alert.
- We should wear full PPE and SCBA for all vehicle fires. PPE for extrication with or without SCBA depending on the IC's directives.
- All personnel involved in extrication should have their helmets on, safety shields down or wearing safety glasses. Helmets can only be removed with the authority of the safety officer.
- Pumpers and rescue vehicles should be staged to ensure the safety of our personnel when conducting operations.
- The applicable Police Department (PD) should be used to ensure the safety of our personnel to direct traffic. If PD is unavailable, IC should appoint personnel to be responsible to handle traffic.
  - Any KFD Personnel performing traffic control will be required to wear reflective vest or high visibility materials, anytime day or night. This includes turnout gear, wildland gear, or reflective vests.
  - KFD Personnel performing traffic control should always stay alert and aware of all surrounding areas. Any approaching vehicles should be watched carefully, and every attempt should be made to make eye contact with the driver. Try to never turn your back to oncoming traffic.

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- Traffic control personnel will be relieved and rehabbed as all other personnel on scene.

*This is extremely important in demanding weather conditions such as high heat.*

- Call for Mutual Aid as necessary.

#### **25.04.01 Hazards and Safety Considerations**

1. LPG and LNG are becoming more commonplace as fuel in vehicles. Pressure relief devices can create a lengthy “blow torch” effect, or should be pressure relief devices fail, a Boiling Liquid Expanding Vapor Explosion (**BLEVE**) may occur. Vehicles may not be marked to identify this fuel hazard. If there is direct flame impingement on a visible fuel tank, regardless of its contents, priority action must be taken to cool the tank and control the fire.
2. If vapors escaping from a fuel storage tank have ignited, allow the fuel vapor to burn while protecting exposures and cooling the tank. Shutting off the valve at the fuel storage tank may control LPG and LNG fuel vapor.
3. **Energy Absorbing Bumpers**  
These bumpers contain gas and fluid filled cylinders that, when heated during a fire, develop high internal pressures which may result in the sudden release of the bumper assembly. This may cause serious injury to anyone in its path, with bumpers traveling up to 25 feet under such circumstances. Fire suppression and rescue operations should be positioned to account for this risk, approaching the vehicle from the side or at 45-degree angles.
4. **Air Bags and Seat Pretensioners**

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The effect of fire and heat on these safety devices is unpredictable. Care should always be taken to avoid placing personnel near or in front of these devices at vehicle fires or motor vehicle accidents.

5. **Batteries**

Batteries present an explosion hazard due to the presence of hydrogen vapors and strong acids. When the situation has stabilized, disconnect the battery cables (ground cable first).

6. **Combustible Metals**



Some vehicles have various parts made of combustible metals, such as engine blocks, heads, wheels, etc. When these metals are burning, initial attempts to extinguish them with foam will usually add to the intensity of the fire. Large quantities of plain water, however, will cool the metal below its ignition temperature and after some intensification, should extinguish the fire.

7. **Trunk/Rear Hatch/Engine Hoods**

Danger exists from compressed gas cylinders used to hold these parts open. When gas cylinders are exposed to heat, failure or rupture of these devices should be anticipated. Excessive pressure below the failure point in cylinders may cause excessive force, causing a trunk, hatch or hood to open with explosive force when the latch mechanism is released. Fires involving the trunk/cargo area should be approached with extreme caution. Contents may include toxic, flammable or other hazardous materials. Tactics should be used in anticipation of a “worst-case” scenario.

8. **Fuel Tanks**

Fuel tanks may be constructed of sheet metal or plastic. A rupture or burn-through may occur causing a rapid flash fire. Do not remove the gas cap, as the tank may be pressurized. Do not direct a hose stream into the tank, as this may cause pressurization of the tank, with a potential for burning fuel spewing from the tank fill opening.

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**9. 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. Always have a charged hand line ready before making entry.

**10. Vehicle Stability**

Tires and 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 at 45-degree angles for maximum protection from potential flying debris. Some larger vehicles, such as buses, may 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.

***END OF SECTION***