

	<b>TRAVIS COUNTY ESD #5 MANCHACA FIRE RESCUE</b>  <b>Department Best Practices</b>	<b>A108</b>
	Authorized by:  Fire Chief Chris Barron	<b>Effective:</b> 1/22/2018  <b>Rescinds:</b>
<b>Parking Garage Fires</b>		<b>Reference:</b> AFD A108.1  <b>Application:</b> Shift Personnel

## I. Purpose

To provide guidelines for fighting fires in a parking garage.

## II. Background

Parking garage fires present unique hazards. They are more dangerous than a typical vehicle fire but are normally not as complex as a structure fire. Strategies and tactics must be tailored to meet these unique fire ground situations.

*This document is a direct adaptation of the Austin Fire Department SOG on Parking Garage Fires. It has been adopted by Manchaca Fire Rescue as an Auto Aid partner to maximize standardization between partner agencies. Variations and additions to the language from the parent AFD document will be signified by text in italics. Generic changes that do not affect content such as formatting and changing "AFD" to "MFR" will not be noted.*

## III. Policy

- A. **Incident command.** All Fireground Operations will be conducted under an Incident Management System (IMS).
- B. **Incident priorities.** All firefighting operations and emergency scene operations shall be conducted with the three fire service incident priorities as the overall focus of incident operations: life safety, incident stabilization and property conservation.

## IV. Best Practices

The following best practices should be followed at all firefighting and emergency scene operations, except where deviation can be justified by Fire Officers. Any significant deviation should be communicated to responding/on-scene units as soon as possible.

**Incident Priorities.** The number one fire service incident priority is Life Safety. Operations at a parking garage fire must be performed with this in mind. The conservation of property, such as vehicles, must be weighed against the risk to the firefighters.

- A. **Response.** The response to a report of a fire in a parking garage will be a Light Box Alarm.
  
- B. **Size-up.** Parking garages are normally constructed of fire resistive or non-combustible materials. They can stand alone or be connected to a larger structure. The most important size up consideration for a parking garage fire is whether the garage is enclosed or open. Enclosed parking garages, including basement parking garages, are required to have a sprinkler system. However, these types of structures can be more dangerous because they will confine and contain the products of combustion. Most parking garages will have a standpipe system, usually a dry system. Sizing-up the structure should include identifying the location of the FDC, the stairways, and the standpipe connections. Upon arrival, the exterior of the structure should be observed for any signs of smoke or fire. Smoke may indicate what floor the fire is on and where the fire attack team should enter the structure.
  
- C. **Fire Attack Options.** There are four methods for fighting a working fire in a parking garage. The Incident Commander is responsible for selecting one or more of these options and communicating the option chosen to all personnel.
  - 1. **Supplying the sprinkler system.** Parking garages that have sprinkler systems should be identified and those systems utilized as soon as possible when there is a working fire. Anytime a pumping apparatus pumps into the sprinkler system it should be supplied by a hydrant. When pumping to a sprinkler FDC, the initial pressure should be 150 psi at the FDC unless there is a sign indicating a higher pressure, then that pressure should be pumped.
  
  - 2. **Attack hose line with tank water.** Most vehicle fires are fought with an attack hose line connected to the pumping apparatus using tank water. If it is possible to do this at a parking garage fire, it will be the easiest and fastest way to extinguish the fire.
  
  - 3. **Attack hose line connected to aerial apparatus.** The waterway of an aerial apparatus can be used as a standpipe system. Connecting an attack hose line to the aerial is a reliable method of providing water to upper floors of a parking garage. A 50 foot section of three-inch hose should be used to connect the pumping apparatus to the aerial apparatus. This will reduce the amount of water needed to fill the supply hose and ensure there is tank water remaining to extinguish a vehicle fire. It can take up 250 gallons of water to fill the aerial waterway and hoses. If the water remaining is not enough to extinguish the fire, a second water source should be established.
  
  - 4. **Attack hose line connected to the standpipe system.** Most parking garages have a standpipe system to which firefighters can connect a hose for fighting a fire. Firefighters must take the

appropriate adapters to connect to the standpipe system. Firefighters should always flush the standpipe prior to connecting adaptors or hoses to the system. This is to ensure not only water at the floor level but will also help remove debris that may clog the nozzle. Because parking garage standpipe systems are usually dry, valves may be opened when not in use. This will cause water loss when supplied and a lack of pressure. When using a dry standpipe system, firefighters should ensure that the other standpipe valves are closed. Another disadvantage of a dry standpipe system is the time and amount of water required to charge the system. The pumping apparatus must be supplied by a hydrant so the entire system can be filled and develop pressure. When pumping to a standpipe FDC, the initial pressure should be 150 psi at the FDC unless there is a sign indicating a higher pressure, then that pressure should be pumped.

#### D. Company Responsibilities.

1. **First-Pumping Apparatus.** The first-pumping apparatus is responsible for fire attack, which consists of locating, confining and extinguishing the fire. Upon arrival, the apparatus should be positioned to allow the firefighters easy access to the stairway nearest the fire. The firefighters should deploy a rackline, bundle or standpipe hose, an extinguisher, and forcible entry tools to the fire floor. The driver should stay with the apparatus and wait for further directions. Upon arrival at the fire floor, the Officer should determine the exact location, extent and severity of the fire. The extinguisher can be used for small fires or to temporarily control a fire while attack lines are deployed. If hose lines are needed for fire attack, the Officer must decide which method of fire attack is appropriate based on the amount of water needed, ability to position apparatus, locations of standpipes, etc.
  - a. **Attack directly from apparatus.** If the Officer determines that the fire can be fought by connecting attack lines to the pumping apparatus, the Officer should advise the driver of the needed apparatus placement. The firefighters should lower the female coupling down to the ground so the driver can supply a bundle with three-inch hose. Then, if needed, additional sections of hose can be added to the bundle nozzle (with the fog tip removed) to reach the fire. The pump operator must remember to add elevation loss and friction loss for the lengths of two-inch hose used when calculating the discharge pressure needed to provide adequate fire flow. If more water is needed than just the tank water of the first-pumping apparatus, the second-pumping apparatus can transfer tank water or lay a hydrant supply line to the first-pumping apparatus.
  - b. **Aerial standpipe attack.** If the Officer selects to fight the fire using the aerial apparatus as a standpipe, the Officer should advise the aerial apparatus Captain of the needed apparatus placement. If the aerial apparatus is not a Quint, a pumping apparatus will be needed to supply the aerial waterway. The Pump Operator supplying water to the aerial apparatus must remember to add elevation loss and friction loss for the lengths of two-inch hose used when calculating the discharge pressure needed to provide adequate fire flow. If more water is needed

than just the tank water of the first-pumping apparatus, the second-pumping apparatus can transfer tank water or lay a hydrant supply line to the first-pumping apparatus.

- c. **Standpipe attack.** If the Officer selects to fight the fire using the standpipe system, the Officer should advise one of the pumping apparatus to supply the standpipe system. This pumping apparatus should lay supply lines from the FDC, connect to and pump from a nearby hydrant. The firefighters should use the two and one half inch standpipe hose lines to the standpipe system. The firefighters should be aware of the sound of flowing water as the system is charged. This could be an indication of an open valve in the system that needs to be closed.
2. **Second-Pumping Apparatus.** The second-pumping apparatus is responsible for assisting with water supply and deploying a second hose line, if needed. Upon arrival, the second-pumping apparatus should locate and position near the parking garage FDC and report their location. They should also locate the nearby hydrant, flush it and ensure it is operational. Under the direction of Command, the second-pumping apparatus may transfer tank water to the first-pumping apparatus, lay a hydrant supply line to the first-pumping apparatus, or supply the standpipe or sprinkler system. If a second hose line is needed for fire attack or backup, the Company should report to the fire floor with a rackline, bundle or standpipe hose.
3. **Aerial Apparatus.** The aerial apparatus is responsible for Inside Truck Work (forcible entry, horizontal ventilation, primary search, checking for fire extension, and salvage) and the use of the aerial ladder. Upon arrival, the aerial apparatus should position to raise the aerial ladder to the fire floor, near the fire area. The driver should stay with the apparatus to operate the aerial ladder. If the pumping apparatus Officer selects to use the aerial ladder as a standpipe, the aerial driver must remove the nozzle, place the aerial waterway adapter on the aerial waterway and ensure the aerial is changed from the rescue position to the firefighting position before raising it to the fire floor. Also, the aerial ladder should be positioned with the expectation that the ladder will extend several inches when charged. This will avoid damage to the aerial ladder and the structure. Once the aerial ladder is in position, the standpipe tool bag should be carried up the ladder. Even if the aerial is not being used as a standpipe, the aerial ladder should be raised for lighting, secondary means of egress, etc. The aerial apparatus firefighters should report to the fire floor with forcible entry tools, traffic cones and a PPV fan. The fan should be used to direct products of combustion away from the fire area and out of the structure. The aerial apparatus firefighters should direct and assist vehicles leaving the parking structure for the safety of the fire attack team. The traffic cones can be set for traffic control.
4. **Battalion Chief.** Upon arrival, the Battalion Chief should assume Command. The Chief should ensure that the method of fire attack is clearly communicated to all Companies on scene. The Battalion Chief vehicle may be used to enter the parking garage for fire location and size up. However, extreme caution should be used and visual observation of vehicle clearance is required because of the light bar and antennas on top of the vehicle.

## E. Other Considerations.

1. **Underground and Enclosed Garages.** For these types of parking garages, the method of fire attack of connecting hose to the pumping apparatus is most likely not going to be possible. Also, these types of garages are required to be sprinklered; therefore, when there is a working fire in an underground or enclosed parking garage, the first-pumping apparatus driver should supply the sprinkler system FDC immediately. The products of combustion will be contained within the structure requiring ventilation. These types of garages are required to have a ventilation system for vehicle exhaust. This ventilation system may be used by firefighters for the removal of smoke. If visibility is limited due to smoke and there are large, open areas, the use of search ropes is recommended for all Companies operating inside the structure.
2. **Requesting More Resources.** The normal response for a parking garage fire is based on the assumption of single vehicle on fire. If, on arrival, several vehicles are involved or there is fire on more than one floor, the alarm should be upgraded to a Box Alarm. The additional Companies should assume their tactical assignments based on the offensive mode standard operating guidelines. If there is evidence of fire extending into a connecting structure, a Box Alarm, *Midrise*, or High Rise Alarm should be requested, depending on the number of floors in the structure. The additional Companies should assume their tactical assignments based on the appropriate AFD standard operating guidelines. Also, the Smoke Buster should be requested when a large structure is filled with smoke or if smoke removal is difficult.
3. **Building Fire Protection Systems.** When a sprinkler or standpipe system is used, the owner of the structure is required to service the system. *For incidents in the City of Austin*, AFD Emergency Prevention should be notified to ensure that the system is placed back in service as required.
4. **Runoff.** When possible, the runoff water and small fluid spills should be controlled and picked up with absorbent. Larger fluid spills may need to be diked and additional resources requested.