

ESCAMBIA COUNTY FIRE-RESCUE

Standard Operating Guidelines

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4100.020

Vehicle Fires

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PURPOSE

Vehicle fires can provide firefighters with a wide range of tactical and safety concerns. The types of vehicles, their cargo, and different fuel cells must be analyzed and addressed at a vehicle fire incident.

OBJECTIVE

To provide personnel with guidelines that identify safe and effective operating methods at the scene of vehicle fire incidents.

SCOPE

All Personnel

DEPLOYMENT

This is an emergency response. A single engine from the jurisdictional station shall respond. However, the ranking officer in-service may request additional resources based upon pre-arrival information received from dispatch, or upon conditions found once on-scene.

PROTECTIVE EQUIPMENT

Personnel shall wear all personal protective equipment and self-contained breathing apparatus while extinguishing vehicle fires.

OPERATIONS

INCIDENT MANAGEMENT

Personnel shall operate utilizing guidelines contained in **3105.005 (Incident Management)**

APPARATUS PLACEMENT

Apparatus should be parked for best advantage, upwind and uphill of the incident to afford protection from hazardous liquids and vapors and to reduce 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 shall be left operating and traffic cones shall be utilized whenever the apparatus or personnel are standing or operating on the roadway.

RESCUE

The rescue of trapped and/or injured victims is the top tactical priority at vehicle fire incidents.

If it is determined that victims are trapped or unconscious in the vehicle, the IC must decide what rescue tactics will be utilized, and a protective hosestream shall be used to best

advantage to protect victims and firefighters from involved portions of the vehicle while making the rescue.

EXPOSURES

Exposure protection must be considered and addressed where the spread of fire from the involved vehicle to a structure, other vehicle, wildland area, or other property is likely.

If necessary, the initial hoseline shall be deployed to protect and cool exposures to the point where the line may then be used for confinement and extinguishment, or until an additional hoseline can be deployed for fire confinement and extinguishment.

CONFINEMENT

Confinement of the fire to the vehicle of origin, or portion of the vehicle involved shall be a tactical objective. Firefighters shall attack vehicle fires in a method that causes the least amount of damage to the vehicle and prevents extension of the fire to uninvolved areas of the vehicle.

EXTINGUISHMENT

In many cases, a quick and aggressive attack on a vehicle fire will address rescue, exposure, confinement, and extinguishment tactical objectives at the same time.

When possible, firefighters shall approach burning vehicles from the sides or corners. This is due to the possibility of exploding pressurized “energy absorbing” bumpers and shocks.

When rescue is not a factor, the initial hosestream should be applied to extinguish burning fuel or areas surrounding the vehicle. Burning fuel may require the application of foam.

The IC should try to determine what type of fuel may be involved (gasoline, diesel, propane, other), and firefighters should consider directing hosestreams on fuel tanks, from a distance, if the tank is experiencing flame impingement prior to approaching the vehicle for attack.

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.

The minimum hoseline for working vehicle fires shall be a 1 ¾” hoseline. However, fire extinguishers may be used to extinguish small incipient fires.

At least one member of the attack team shall have forcible entry tools in their possession to provide prompt and safe entry into the vehicle and its various compartments.

Fires involving tractor-trailers and cargo vehicles should be approached with extreme caution. The IC should determine the amount and type of cargo contained in such vehicles prior to initiating an aggressive attack where the contents of the vehicle are involved.

OVERHAUL

Ensure that all involved portions of the vehicle have been extinguished.

Open compartments as necessary to check for fire extinguishment and extension (hood, trunk, storage compartments, etc.).

Ensure the extinguishment of tires and be prepared for them to fail and/or re-ignite.

When the situation is stable, disconnect battery cables (ground cable first).

Ensure that the vehicle is in a fire safe condition prior to towing service removal.

SAFETY CONSIDERATIONS

Personnel should approach burning vehicles from a corner or side, if possible.

Driver/Operator shall place a dry chemical fire extinguisher in the ready for protection of the attack crew should the attack line fail.

Consider traffic hazards to personnel. All personnel operating on or near the roadway, if not wearing their bunker coat, shall wear traffic safety vests.

Consider the flow of spilled fuel (burning or non-burning). Report any fuel that gets in waterways and/or sewer drains to dispatch.

Be alert for the possible explosion of the fuel system.

Be on guard for explosion of pressurized "energy absorbing" bumpers and shock absorbers. Bumper assemblies have been known to travel 25 feet.

Be mindful that batteries may serve as an ignition source, produce electrical shock, or explode.

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 to within four (4) inches of the ground.

Remember that motor homes, campers, and mobile canteens usually have LPG tanks onboard. Most of these are found on the left side or rear of vehicle, but pull behind trailers may have tanks located at the front

Be cautious of non-deployed air bags. Personnel should not position themselves between bags and seats while the air bag system is armed. Air bag systems may deploy when exposed to fire, and their pressurized canisters have failed under fire conditions.

Batteries present an explosion hazard due to the presence of hydrogen vapors. Avoid contact with battery acid.

Be cautious of vehicles containing combustible metals in their engine blocks, heads, wheels, etc. When these metals are burning, attempts to extinguish them with water may add to the intensity of the fire or cause "spattering".

Remember that springs, gas cylinders, extending arms used in trunks, rear hatches, and hood compartments, may activate or explode and violently expel debris from the vehicle.

Fires involving the trunk/cargo area should be approached with extreme caution as contents may include toxic, flammable or other hazardous materials.

Fuel tanks may be constructed of sheet metal or plastic that may rupture or burn-through 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. Newer vehicles have pressurized fuel systems

Be aware that well sealed interiors of modern vehicles present the potential for backdraft. Use caution when opening doors or breaking windows.

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 to the sides.

NOTIFICATIONS

If the involved vehicle is found abandoned in a remote location, it may be stolen or may have been used in the commission of a crime. In these cases, have dispatch notify law enforcement.

If circumstances surrounding a vehicle fire are suspicious and arson is suspected, have dispatch notify the State Fire Marshals Office.