

OPERATION OF APPARATUS AND VEHICLES

CHAPTER 7.9

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Professional Standards Division

Approved By: Chief of Fire Rescue

Purpose

The purpose of this procedure is to provide standards in which to operate city vehicles in a safe and prudent manner.

GENERAL GUIDELINES

All members shall operate vehicles used for County business in a careful and prudent manner and shall obey the laws, policies, regulations, and procedures of the state and COUNTY.

Operating fire and rescue apparatus, especially in emergencies, poses unique hazards and increases the potential for accidents. Consequently, the driver must use extreme caution, alertness, and a prudent speed for the conditions encountered in order to react to the unexpected.

N.F.P.A. 1500, Chapter 4 submits the following recommendations for vehicle/apparatus operators:

4-2.3 Drivers of fire rescue vehicles shall be directly responsible for safe and prudent operation under all conditions.

4-2.4 Drivers shall not move vehicles until all persons on the vehicle are seated and secured with seat belts or safety harnesses in approved riding positions.

4-3.1 All persons riding on fire apparatus shall be seated and secured to the vehicle by safety belts or harnesses any time the vehicle is in motion. Riding on tailsteps or in any other exposed position is prohibited. Standing while riding is prohibited. (Exception: fighting a grass fire)

All operators of Fire Department vehicles will follow these NFPA recommendations.

In addition, personnel riding in an rescue/ambulance shall be seated and secured to the vehicle by safety belts or harnesses any time the vehicle is in motion, except when providing patient care that cannot be performed while wearing a safety belt or harness.

Road conditions, weather, or the action of another does not relieve the driver of the apparatus of his/her responsibility to drive safely.

INCLEMENT WEATHER

Under wet, foggy, or other hazardous weather or road conditions, drivers should react to the conditions encountered, and in no case exceed the posted speed limit.

Per CDL Handbook, Section 2.2, and the Operator's Section of the Manufacturer's Vehicle Operation and Maintenance Manual, Driver Operators will turn off all auxiliary braking devices prior to operating apparatus on a roadway that is wet, has snow, ice or is slick for any other reason. Auxiliary braking devices include transmission retarders, exhaust or compression brakes (such as Pac, Jake or Cat brakes), or electric driveline retarders (such as Telma retarders). This policy will be followed by all operators, on all vehicles in the fleet, with no exceptions.

EMERGENCY DRIVING

During emergency response, Fire Rescue vehicles may exceed the posted speed limit, but shall be regulated **AT ALL TIMES** by existing road and traffic conditions. At no time will any Fire Rescue vehicle exceed 10 mph above the posted speed limit or 70 mph under any conditions.

Exercise caution while driving through residential areas.

School crossing speed zones shall not be exceeded.

Drivers of Fire Department vehicles shall bring the vehicle to a complete stop to respond to any of the following:

1. Direction from a law enforcement officer
2. Red traffic lights
3. Stop signs
4. Negative right-of-way intersections (an intersection where the lane in which you are traveling does not have the right-of-way)
5. Blind intersections
6. When the driver cannot account for all lanes of traffic in an intersection
7. When other intersection hazards are present
8. When encountering a stopped school bus with flashing warning lights

During an emergency response, fire/rescue apparatus should avoid passing other emergency apparatus. If unavoidable, the passing arrangement should be conducted through radio communications. Chiefs' vehicles may pass fire apparatus, but must notify the Driver Operator by radio or other signals.

During emergency response or non-emergency travel, drivers of Fire Rescue vehicles shall come to a complete stop at all unguarded railroad grade crossings. Drivers shall ensure that it is safe to proceed prior to crossing the tracks. Drivers shall also use caution when approaching and crossing any guarded grade railroad crossing.

RESPONSIBILITY

Officers and Driver Operators hold joint responsibility to ensure that all personnel are seated and secured to the vehicle by seat belts or safety harnesses at any time the vehicle is in motion. The only exception shall be when it is necessary for someone to serve as a backup person when backing the apparatus, fighting a brush fire. Violations of this regulation will not be tolerated and will result in disciplinary action being taken against the violator, Driver Operator, and Officer.

BACKING APPARATUS

Backing of Department fire apparatus and rescue units should be avoided whenever possible. Where backing is unavoidable, spotter(s) shall be used. Spotter(s) shall also be used when vehicles must negotiate restrictive side clearances and where height clearances are uncertain. When backing is necessary and or when using a spotter(s) the driver will slowly maneuver the vehicle with the anticipation that something may go wrong.

The vehicle driver shall make a complete 360° survey of the area around the vehicle prior to moving the vehicle. This includes looking up high and low for potential obstructions.

Under circumstances where the vehicle is manned by only a driver, the driver will attempt to utilize any available Department or appropriately qualified (I.E.: GFR, law enforcement, security) personnel to act as spotters.

When apparatus having a crew are backed, members of the crew shall be utilized as spotters. The primary spotter shall be located approximately 10 feet off the left rear corner of the apparatus in plain view of the driver. The secondary spotter, when available shall be located approximately 10 feet off the right rear corner of the apparatus in a position that can be seen by the driver. The secondary spotter should be able to see the right side of the apparatus and the primary spotter. In congested or tight areas all crew members will dismount the apparatus and act as spotters, including the Company Officer who will oversee the safety of the operation. When only a single spotter is available, the spotter shall be located approximately 10 feet off the left rear corner, and will act as the primary spotter.

There shall be no riding on the tailboard, steps, or any exposed position of the vehicle.

Spotters shall have portable radios and flashlights (night). A backing plan will be discussed (hand signals, flashlights, radio) with the driver before beginning to back the vehicle. The communication method and warning process will be in accordance with Department Policy.

The vehicle shall not be moved until all spotters are in position and communicate their readiness. Spotters will remain visible to the driver at all times. Anytime the driver loses

sight of the primary spotter, the vehicle shall be stopped immediately and remain stopped until the spotter is visible. The process will continue only after the communication to continue is given by the primary spotter.

When Department vehicle must be backed where other vehicle traffic exists, day or night, the apparatus emergency lights shall be operating and traffic safety vests shall be worn by all spotters.

THE OFFICER AND DRIVERS

The Company Officer is responsible for the safe operation of the apparatus and its crew.

If at any time the Driver feels that the situation is not safe, he/she should stop the apparatus until the situation is corrected. This may mean getting out and walking around the apparatus and down the road where the apparatus is headed.

THE SPOTTER (S)

The spotter must not only look at the ground level for obstructions, but also look up for overhead hazards such as tree branches, wires, signs, canopies, ladders, etc.

The spotter shall maintain visual contact with the driver at all times.

At night, the spotter should position one of the rear spotlights on themselves or use a flashlight to help the driver see them. **DO NOT** point the flashlight directly in the mirror of the driver as it may blind him/her.

Voice communication between the spotter and the Driver is recommended.

The use of portable radios to communicate between the spotter and the Driver may prove beneficial in certain circumstances.

Click to view hand signals → [Hand Signals](#)

CROSSING MEDIANS

Crossing medians, except at approved areas, is a violation of the law. Under normal circumstances, it should not be attempted. In life-threatening situations, the apparatus may need to cross the median. The officer must ensure that the fire apparatus can cross safely, and with no damage to the vehicle.

OPERATION OF APPARATUS

The following steps shall be observed to help reduce the wear and tear on apparatus:

1. Allow all Detroit and CAT engines to idle 30 seconds – 1 minute before engine shut down.
2. Operate the pump handle every morning and only lubricate with silicone lubrication, not an oil base product.
3. Do not allow engine rpm's to exceed 1000 rpm for more than two minutes during a closed pump test.
4. Do not use the "master" drain valve as a "pressure release valve." To relieve pressure on the pump, retard engine rpm's to idle and open a nozzle to relieve the pressure on the lines. The master drain valve can be used to drain the system to keep it from freezing. The valve should be operated daily.
5. If necessary, use the individual drain valves to relieve pressure on the system.

COOLING/TRANSMISSION

Apparatus Operators shall shut down their apparatus if the temperature is above 90 degrees and the apparatus is going to be idling for more than ten minutes. (This is apparatus not in actual use on fireground operations.)

REGENERATION PROCESS

The diesel particulate filter (DPF) and the ARD (regeneration device) work together in order to reduce particulate emissions. The generation of soot is a normal process during engine operation. The DPF collects the soot and the engine oil in the exhaust. The soot is converted into gas and the engine oil is converted to ash. The temperature of the DPF must be above a particular value in order for regeneration to occur. The exhaust gas provides heat for the regeneration process.

If the regeneration process is not occurring, the soot levels increase and the engine will begin to de-rate or lose power; this will **NOT** be an issue under emergency operations (pump gear, aerial power).

Our apparatus have an override, not a failsafe. After the DPF system reaches a certain point it automatically begins to de-rate the engine power progressively. At a certain point during the de-rate, commercial vehicles will shutdown automatically, and then allow a 60 second restart/run followed by a permanent shutdown until the problem is addressed. Our apparatus will do the same unless in pump/aerial mode. If in pump/aerial mode the apparatus will run in override until it blows the engine and exhaust system. Apparatus Operators must be aware of their apparatus engine system prior to committing to extended pump operations or aerial power to avoid a catastrophic event.

TYPES OF REGENERATION

Passive Regeneration: The engine provides sufficient exhaust gas temperature for regeneration. (This may mean driving on the highway, it regens on its own) This leads into:

Active Regeneration: - The engine's cycle does not provide sufficient exhaust temperature for passive regen. The ARD operates in order to raise the temperature of the exhaust gas. When the regen completes, the ARD turns off.

Stationary Regeneration-is an active regeneration that is initiated by the operator via the ARD force switch. The vehicle must be stopped in order for a stationary regen to occur. This process will require taking the apparatus out of service.

APPARATUS WITH REGENERATION "HEST" LIGHTS/LAMPS

HEST- High Exhaust Temperature Lamp- Often being confused for a need to regen. Illuminates when the exhaust temperature is greater than 842°F and the vehicle speed is less than 5 mph **The Amber warning light**- soot load is increased, active or stationary regen is required **DPF Lamp**- provides a general indication of the soot load, The Lamp flashes when the soot load has increased to a very high level. The Lamp will also flash when the ARD disable/inhibit switch is activated.

******(IT IS NEVER OK TO DEPRESS THE ARD DISABLE/INHIBIT SWITCH)******

USE OF ARIAL APPARATUS IN THE VICINITY OF OVERHEAD POWER LINES

Safety and precaution cannot be emphasized enough when operating the ladder with overhead electrical power lines present.

WARNING: *The ladder assembly is not insulated. Keep the ladder at least ten feet from overhead power lines. When elevating the ladder near lines, personnel on the ground should stand clear of the vehicle, and avoid stepping onto or touching the vehicle until the ladder is in a safe position with respect to the overhead power lines. Personnel touching the ground and the vehicle with the ladder contacting an energized power line will conduct electrical current, resulting in serious injury or electrocution.*

APPARATUS SECURITY

The Company Officer shall ensure the security of the apparatus at all times. The Driver Operator is responsible for all equipment assigned to the apparatus. Before clearing an incident, the Driver Operator should inventory all equipment assigned to that apparatus. This should include a walk around the apparatus to ensure that all equipment has been retrieved and secured, and that all compartment doors are closed and latched. The driver Operator is responsible for the proper closing and latching of all compartments and doors any time the vehicle is put in motion.

WHEEL CHOCKS

Wheel chocks are carried on all apparatus. Use chocks any time they will improve the safety of personnel or apparatus. The Officer and Apparatus Operator shall be responsible for deciding when to use chocks.

OVERHEAD DOORS AND OPENERS/CLOSERS

Only the Driver Operator shall operate the remote overhead door opener. The Driver Operator shall:

1. Ensure a clear line of vision with the overhead door before activating the remote door opener.
2. Ensure the overhead door is fully open and stopped before proceeding through the opening.
3. Ensure the apparatus is clear of the opening before closing the overhead door.

To avoid activation of the wrong door opener, the Officer and Driver Operator assigned to an apparatus with both front and rear automatic openers shall ensure that door openers are 18 inches apart.

DEPARTMENT DRIVER TRAINING

All members shall receive VFIS Emergency Vehicle Driver Training (EVDT) within one month of employment.

All probationary members will complete their task books. The task book has a section solely dedicated to driving.

All Out of Class (OOC) Driver Operators are required to attend and successfully pass the departments 40 hour OOC Driver Operators course.

All members are required to obtain 4 hours of driver training through Vector Solutions on an annual basis.

It is the responsibility of the Company Officer to train, coach and mentor our members on proper driving procedures. This can be accomplished through table top exercises, on the road training and road course simulation.

In the event of an accident, the member will receive remedial driver training. This training will be based on the type and severity of the accident. The Professional Standards Division will assign and provide the remedial training deemed necessary.