

Tempe Fire Department Policies and Procedures
Aerial Ladder Operations
403.04
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TILLERING

The driver and tillerman of a tractor-trailer ladder truck have a dual responsibility that is unique among firefighting apparatus drivers. The driver is responsible for the proper maneuvering of the tractor, and the tillerman controls the lateral movement of the trailer. However, both must work together as a team and coordinate their actions to provide a safe and efficient operation of the tractor and trailer as a unit.

Tillering is a specialized operation and requires practice and training under the close supervision of an experienced man. Before any driver or tillerman operates a piece of apparatus on a public street he should be given sufficient practice and coaching to where his confidence and skill are equal to the situations he is expected to encounter in civilian traffic. This training should proceed in logical sequence from blackboard, to parking lot, to quiet streets, to heavy traffic, to emergency response.

During practice drives, the instructor should sit in a position to take over the tillering if an emergency arises. He should emphasize the following:

- A. Clear, positive signals.
- B. Trailing in-line on a straight roadway.
- C. Bringing the trailer quickly into line after a turn.
- D. Smooth, coordinated tillering.

DRIVER - TILLERMAN SIGNALS

A system of signals between the driver and tillerman is essential to the safe operation of a tractor-trailer ladder truck. Either a horn or buzzer is provided for the driver and tillerman. Use of the following signal code by the crew is mandatory.

- One Blast STOP IMMEDIATELY
- Two Blasts PROCEED FORWARD
- Three Blasts REVERSE

Signals should be given distinctly and may originate with either the driver or tillerman. The signal for FORWARD or REVERSE MUST be acknowledged by a repeat of the signal before action is taken by the driver. The STOP signal is intended primarily for use by the tillerman to signal an emergency stop or a necessary stop during a backing operation. A series of short signal blasts may be utilized by the tillerman to gain the attention of the driver or to request a non-emergency halt of the vehicle.

The forward signal may be used by the tillerman to indicate that he is in the proper position and that the tiller end of the truck is ready to proceed forward. It is the company officer's responsibility to see that crews are safely positioned on the apparatus before directing the driver to roll; however, he should not give this order until the tillerman has signaled that he is properly secure and ready to go. There is no excuse for an accident due to a truck leaving the station or proceeding forward before the tillerman is properly seated and ready.

The reverse signal signifies that a backing operation is necessary. When given by the tillerman, it shows that he has determined that the way is clear and that he is prepared to maneuver the trailer backward.

Drivers of a ladder truck can always aid the tillerman by clearly indicating their turns ahead of time. This can be done by giving standard arm signals well in advance of legal requirements so that the tillerman may have ample time to anticipate the tractor movement. Duplication of this arm signal by the tillerman will also warn other vehicles and pedestrians of the truck's direction of travel. Because of his elevated position, the tillerman may often find it advantageous, to the prevention of accidents, to supplement the standard arm signals by additional arm movements to attract attention.

TILLER CONTROL WHEN LEAVING QUARTERS

As a tillerman you should check several items before returning the signal to proceed out of quarters; the alignment of the trailer wheels, the readiness of the crew, the proper condition of the equipment, and your own seat security.

As the truck starts to move, bring the trailer wheels into the trail position and center the trailer in the doorway. In most cases the trailer will follow the tractor safely through the door or obstructions, it is sometimes necessary for the tractor to make a sharp turn when leaving quarters.

If the tractor turns sharply to the right, turn the tiller wheel slightly to the left to keep the trailer centered in the door. Watch the clearance on the right side just ahead of the tiller seat. As the tiller wheels clear the doorway, the pull of the tractor to the right will pivot the trailer and move the ladder overhang toward the left side of the door. Correct this pivoting action by steering slightly to the right. As the ladder clears the doorway, bring the wheels back to the trail position.

If the situation is the reverse and the tractor turns sharply to the left, compensate by tillering precisely opposite to the above.

TILLER CONTROL WHEN TRAVELING FORWARD

Keep the tiller wheels parallel to the frame, and the body of the trailer in a direct line behind the tractor while traveling. When the tractor and trailer are not in line, the apparatus is wider and the chance of having an accident is greater.

If the apparatus is moving in a straight line, little movement of the tiller wheel is necessary, it is simply a matter of controlling the drift and much like driving a passenger car on the highway. If the tractor weaves in and out of traffic on an emergency response, keep the trailer in line as much as possible.

Avoid making sudden swing-outs which require sharp counter swing-ins unless it is necessary to avoid collisions.

It is very important that you remain alert to traffic conditions on the street ahead. Anticipate situations that might develop. Plan compensating measures in advance to prevent an accident. Maintain a sharp lookout for low branches or any other overhead obstruction which could damage the apparatus or injure you.

TILLER CONTROL AT INTERSECTIONS

Exercise particular care and alertness at intersections. If the intersection is clear and the streets are wide, turns will not be difficult. The trailer will track without tillering. But where traffic is heavy and streets are narrow, use extra caution.

Keep aware of vehicles on either side and to the rear. Watch the driver's arm signals to anticipate tractor movement. Duplication of the signals will help warn rear traffic. You may find it advantageous to supplement

legal signals by additional arm movement to attract the necessary attention. If an additional lane will be necessary to make the turn, anticipate the need by drifting slightly into that lane, partially blocking the traffic.

Do not over-tiller on turns. If the tractor moves out wide, start turning into the corner about the time the trailer wheels pass the curb. Starting the turn at this point compensates for centrifugal force and prevents over-running of the in-line position. Bring the trailer in line with the tractor quickly and smoothly.

If the driver turns sharply at a point near the curb line, turn the tiller wheel in the opposite direction to avoid striking the curb. If there is the least doubt regarding safe clearance, signal the driver accordingly.

SPOTTING

Good spotting requires close cooperation with the driver. Watch for signs that the aerial is to be raised. Because of the height of your position to the rear of the truck, you can be of considerable assistance. Check for overhead obstructions, distance out from building, street clearance, and other factors which may affect spotting.

Stop clear of the street of the fire scene when the aerial is not needed and be sure the area directly to the rear of the trailer is clear so that bed ladders can be removed easily.

BACKING INTO QUARTERS

On return to quarters, follow the course set up by the driver and signal when the trailer is lined up with the door. In most cases the trailer should be kept in-line with the tractor prior to backing in. However, there are places where lack of street width, station construction, set-back, intersections, etc., make it necessary to alter this procedure.

Make sure the traffic is being controlled in both directions, grasp the tiller-wheel near the bottom, and prepare to back. Holding the tiller-wheel near the bottom minimizes the chance of inadvertently turning the wrong direction by making it a simple matter of moving the wheel in the desired direction of travel.

As the truck begins to back, watch for that last automobile that tries to sneak through. The comparatively short wheel base of the tractor gives the truck a tendency to jack-knife while backing. Guide the trailer into quarters and park the truck with the trailer in-line and the wheels in trail, ready for response.