

TRAINING BULLETIN NO. 21 - NOVEMBER 1966

LADDER PIPE OPERATION

This procedure has been developed and tested by the field forces of the Los Angeles City Fire Department. It is offered as an authoritative guide, but is not intended to prevent an officer from making reasonable modifications necessary to fill particular needs as determined by his size-up, apparatus, manpower, etc.

It is designed to be performed without the necessity of assigning specific duties other than a few obvious exceptions, e.g., apparatus operator and tillerman. Some of the steps are performed sequentially, while others are done simultaneously. Maximum efficiency will be achieved by each member understanding the procedure and the end result desired and performing the next step necessary to complete the procedure.

OPERATIONS TO BE PERFORMED

- 1) Apparatus operator:
 - a. Spot apparatus; set hand brake.
 - b. Perform the operations in cab necessary for raising the aerial ladder.
 - c. Set spring locks.
- 2) Tillerman:
 - a. Fold windshield down; release and swing tiller seat clear of aerial ladder; remove tiller post.
 - b. Place and secure ladder pipe in position on rungs of aerial ladder.
- 3) Other members:
 - a. Set ground jacks and chock blocks.
 - b. Attach the ropes to ladder pipe for directing stream from the ground.
 - c. Place siamese on ground (side away from fire).
 - d. Manually position hose on aerial ladder.
 - e. Secure hose about 5 feet below ladder pipe with a ladder pipe hose strap.
- 4) Nozzleman:
 - a. Don life belt.
 - b. Take position at ladder pipe; secure to aerial ladder with life belt.

Alternate Method - Positioning Hose on Ladder

The ladder may be used to pull the hose out of the trough. This method may improve the efficiency of the procedure if conditions are suitable for its use.

- 1) Perform the operations necessary for stability of the apparatus and raising the aerial ladder.
- 2) Place and secure the ladder pipe in position.
- 3) Secure the hose about 5 feet below the ladder pipe with the ladder pipe hose strap.
- 4) Hoist the aerial ladder (pulling hose out of trough).
- 5) Rotate aerial ladder in direction away from hose trough to swing the hose onto ladder.
- 6) Place siamese on ground; pull any remaining hose out of trough.

SAFETY STANDARDS

- 1) Jackknife apparatus 60 degrees from in-line and away from direction of ladder extension.
- 2) Angle of ladder inclination should preferably be 75 degrees from horizontal, and limited to not more than 80 degrees.
- 3) Ladder extension limits:
100 foot aerials - 80 feet
85 foot aerials - 65 feet
- 4) Maintain at least 100 p.s.i. on the cylinder pressure gauge.
If not enough pressure is maintained to overcome the nozzle reaction, any movement of the hoist control lever will cause the ladder to rise toward vertical. To stop the uncontrolled movement of the aerial ladder return the hoist control lever to neutral. Nozzleman should immediately raise nozzle upward to change the direction of nozzle reaction.
- 5) A man shall remain at the shut-offs on siamese to control water to the ladder pipe. This man shall be alert to any excessive movement of the aerial ladder and be prepared to shut down lines if necessary. The water shall be turned off and on gradually to avoid causing a violent whip of aerial ladder.

SAFETY STANDARDS (Cont.) THESE ARE AUGUST 1998 CHANGES

- 6) If conditions warrant, hoist lock and rotation lock may be used as these evolutions are completed.
- 7) Maintain communication with nozzle member through inter-com; notify before starting any ladder movement.
- 8) When ladder pipe is in operation, aerial ladder operator shall:
 - a. Remain at controls at all times.
 - b. Be especially alert to slippage or drifting of ladder.
 - c. Shut down line and retract ladder if movement of apparatus is necessary.
 - d. Use hand crank for rotating turntable if it cannot be done smoothly with the control valve.
- 9) Hose should be laid on the rungs centered between beams. It should never be hung over the side of the aerial ladder.
- 10) When the ladder pipe is in operation from an unsupported aerial ladder, one member is the limit on fly.
- 11) The nozzle member shall be secured to the ladder with a safety strap. (Use breathing apparatus if needed.) Move the ladder pipe slowly when changing its direction.

Extra care in operation shall be exercised when necessary to exceed the accepted limits.

ADDITIONAL PROCEDURES TO CONSIDER

- 1) To provide protection for the nozzle member:
 - a. Have a firefighter part way up the ladder with a loaded 1-1 /2 or 1-3/4 inch line, preferably supplied from a second source. An alternative choice for a protection line is a 2-1 /2" line from ground level.
 - b. Load the line to the ladder pipe after 50 degrees elevation and as soon as possible.
 - c. Be sure the ladder pipe is secure to the rungs; a ladder strap shall be used along with any other locking devices.
- 2) Limit the nozzle tip size to 1-3/4 inch.
- 3) Seagrave ladder pipes have approval to flow 800 G.P.M @ 80 PSI.

- 4) L.T.I. apparatus may use the Akron Turbo Spray Nozzle They shall be limited to the 750 GPM setting when used on the ladder pipe.
- 5) Place a second ladder strap near the base of the fly section after the ladder pipe is in operation. Another method of securing the ladder pipe hose is to attach two hose straps to the appropriate reinforced rungs of the fly section prior to raising the aerial ladder.

LOADING HOSE

The following is a suggested method for loading hose:

- 1) Flake-out the 100 foot section of three-inch hose beside apparatus; make hose connections before or after loading hose, whichever is most convenient.
- 2) Place the cluster in holder; lay sufficient hose outside of trough to provide slack for moving the cluster.
- 3) Place ladder pipe on holder; lay sufficient hose outside of trough to provide slack for moving the ladder pipe. (A short fold of slack hose placed under the ladder pipe holder may be useful.)
- 4) Start at the cluster end; lay fold of hose flat the full length of the trough; continue laying folds until reaching the slack hose at the ladder pipe.
- 5) Lay the slack hose, provided at each end, on top of hose in the trough.