

LOS ANGELES CITY FIRE DEPARTMENT
TRAINING BULLETIN

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AUTOMATIC SPRINKLER SYSTEMS

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“The automatic sprinkler is by far the most important of all fire protection devices”.
NFPA.

Early detection of fire and effective application of the available water supply are fundamental to minimizing most fire losses. A very reliable method of obtaining this detection and application is a properly installed and maintained automatic sprinkler system. Records show that 96% of all fires in sprinklered buildings are extinguished or satisfactorily held in check by the sprinkler system.

There have, however, been fires in which large losses have occurred because fire departments did not effectively utilize this valuable fire fighting tool. It is for this reason that companies “shall hook up and pump into sprinkler systems as soon as the need is evident.” (Manual of Operations, Article 20. A visible fire in a sprinkler-protected building should be sufficient evidence to require this action. NBFU Bulletin No. 270 suggests that “one of the first fire alarm engine companies responding. . . . should lay two 2 ½ “ lines into the fire department connection.” Pump operators should then deliver 100 p.s.i. to the inlet if no fire is showing. If it is obvious that a fire is in progress and a number of heads have opened, pump pressure should be increased to 150 p.s.i.

Officers must be thoroughly familiar with the arrangement of sprinklers and other private fire protection. They must know the amount of water available so that unwise use of hose lines will not take water away from sprinkler systems. (This can only be determined by pre-fire inspection.) Even using a strong city main. Normally, one and one-half inch lines are sufficient in sprinklered buildings.

In order to properly utilize the potential of sprinklers in the area, it is suggested that companies maintain a list of sprinklered buildings in their district. (This information can be obtained from the F-316s, which are filed behind the F-173s in the company files. Pre-fire planning drills should be held with this list as a basis, utilizing sketches and “on-the-scene” inspections to reaffirm the location of fire department connections and control valves. Threads and caps should be checked at this time to see that they are in good working order and that valves are turned on.

Extreme caution must be exercised by officers when ordering systems turned off after a fire. A shut off should be made only after a thorough check reveals that the fire is out. The amount of water discharged by sprinklers is small compared to that from hose streams which may be needed in case of a rekindle. The fireman who is ordered to close the control valve must remain at the valve, so that it can be reopened without delay if needed. He should remain there until the system is put back into service. There is grave danger of prematurely shutting down the system even though hose lines have been laid. Officers must also impress responsible persons in sprinklered buildings not to turn the system off before the fire department arrives in the event of a fire.

Some officers treat a sprinkler system as a first aid device to be used only until the fire department arrives. Officers who think in this manner are forgetting that sprinklers delivering water directly over the seat of a fire generally use far less water while doing a better job of cooling and extinguishing than hose lines. In many instances, sprinklers are the only means of delivering water to the seat of a fire where conditions of dense smoke make it impossible to tell whether a hose stream is being used effectively. Intense heat may even prevent hose men from reaching the fire at all.

JUNIOR SYSTEMS

“Junior systems” may be encountered from time to time which are designed to provide simple, inexpensive protection for light hazard occupancies where not over three or four sprinklers are likely to operate. The system is connected directly to the service water supply through a one-inch brass pipe and electric water flow alarm. There is no fire department connection or drain valve. The system itself is a loop of three-fourths of an inch or one inch of copper tubing fitted with small orifice (one-fourth of an inch or three-eighths of an inch) sprinklers. They will discharge about one-half as much water as the standard one-half inch sprinkler, and are distinguished by a pintle extending beyond the center of the deflector. (For identification purposes only.)

CHECK LIST FOR OFFICERS

1. Have a list of all sprinklered buildings in the area with sketches showing connection locations and main sizes.
2. Be aware of water supply and auxiliary sources in the area.
3. Inspect fire department connection and control valves periodically.
4. Hook up and pump into sprinklers whenever the need is evident.
5. Exercise extreme caution when shutting down systems.

6. Be sure that all auxiliary fire fighting equipment is restored to service before leaving.
7. Hold periodic drills on all of the above.

Further information on this subject can be found in NBFU Special Interest Bulletin No. 270; National Fire Code, Volume IV, Chapters 13, 13A and 13L; and NFPA Handbook of Fire Protection, Chapters 51 to 60.