

MUNICIPAL DEPARTMENT

HYDRANTS AND WATER SUPPLY.

(Continued from last issue.)

The practice in the large eastern cities is to have two steamer openings on each hydrant, and as many of the latter as possible; often two at each street intersection and one at alley corners.

This same principle is just as valuable to the smaller towns and should have careful consideration. A pressure of 75 pounds at hydrant or steamer will throw a stream 111 feet high through 100 feet of hose, and only 50 feet when 1,000 feet is required, and in each case with inch nozzles. Larger streams and pressures result in much greater waste for the friction increases as the square of velocity with which the water moves in the hose. Consequently much is gained by having plenty of hydrants, and it should be remembered that while there is not much difference in cost between a section of hose and a hydrant, the latter is practically a permanent investment and will outlast a very large value in hose. How much easier it is to handle a large fire when the lines of hose do not exceed three or four hundred feet!

This matter of the waste of power by friction has resulted in the trial of hose with larger diameters than the standard two and one-half inches, but here we are restricted again by the great weight of the big hose when filled. Any foreman who has put in several hours dragging the standard hose around a fire will not be surprised to learn that the water alone, in fifty feet of two and one-half inch hose, weighs nearly 100 pounds, with the hose and couplings it amounts to nearly 160 pounds. An increase of but quarter of an inch makes an additional weight of 22 pounds of water and a total excess of about one-fifth, while fifty feet of three-inch hose holds 152 pounds of water, a weight nearly equal to that of a section of standard hose filled. Of course, these diameters effect considerable saving in friction, but it is a question whether this is not counterbalanced by the great additional weight and the complication and confusion resulting from couplings of different diameter.

Some of the large city fire departments probably have enough men in the companies to handle such hose, but they complicate matters again by carrying one and one-half inch hose to attach and carry up into buildings. As the friction in these small diameters is simply enormous it is a question whether it would not be just as well—as it is much quicker and simpler—to make the whole line two and one-half inch.

It is worth while knowing that doubling a line of two and one-half inch—streaming into an outlet—practically decreases its length three-fourths. Or in other words, if a second line be laid alongside one a thousand feet in length and both connected into the nozzle, there is then no more friction than in a single line of 250 feet. This

offers an easy solution of the problem of throwing large streams on fires, and there is no excessive weight to handle at the multitude of smaller 'blazes.'

Who is to impress these matters upon the people and strike for better conditions if not the fire chief? Much is sometimes expected of the insurance men, but if the matter be looked at in its proper light, they are not the ones to agitate for better fire protection except as against conflagrations. The real province of the underwriter is to take risks as he finds them and establish rates accordingly, and he makes the most money when conditions are dangerous—providing the terrible sweeping fire does not come. Besides it is no uncommon thing for his suggestions as to requirements to arouse opposition from those who will not see that the property owner's interests are vastly greater than those of the insurance men.

The chief will find that he is the architect of his own fortunes and whatever improvements are needed can best be advocated and urged by himself. He need not expect any large amount of thanks or even credit for his efforts, especially if he be a volunteer chief, but he can have the satisfaction that comes from duty well performed, whether he be successful or not.

Insist upon good hydrants—there are several reliable patterns—and object to any four-inch diameters unless you must take them with single outlets or for residence districts. Get as many of them as you can, not with the argument of having more streams on fires, for you will have to use good judgment not to put on any more than your mains will well supply, but to save the waste caused by friction and to get better and more effective streams. Impress upon your council the important fact that when water is brought to your line of hose under heavy pressure, this power is too costly and valuable to throw away in the friction of long hose lines. If you have one or more engines do your best to have plenty of places where they may take suction at all times, with the least possible effort to place them in position, and if these be at salt water make sure of getting fresh water for the boilers. In fine, neglect no effort that can render your water supply more available.

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