

FIREHOUSE[®]

Weekly Drill

DRILL #85: DIRECTING AND PENETRATING HOSE STREAM

Introduction

Firefighting can be a science at times and knowing how to direct the hose stream at a fire can, at times, be in this category. There are a lot of fire departments using automatic combination nozzles thinking they are getting the same reaction as a smooth bore nozzle when operating it in the straight stream position, but this is not the case. The combination nozzle, when used in the straight stream position is nothing more than a very tight fog pattern; the stream is hollow in the center.

For the best penetration of getting water at the heart of the fire, a smooth bore nozzle should be our weapon of choice. Which size nozzle? The rule of thumb is the nozzle diameter should not exceed half the diameter of the hose (on a 2½-inch hose, the nozzle should not exceed 1¼ inches).

One thing that we need to keep in mind is the fact that gravity will play an important part in having an effective stream reach. Once the water leaves the nozzle, gravity will start pulling it downward, creating a natural curve in the path the water takes. This curve is not a bad thing because it actually allows the water to extend further into the building than it would if it traveled in a straight line. Additionally, the deflection the water takes off the ceiling from this curved stream, actually will have greater penetration than if the stream was in a straight line.

Again, in order for us to have an affective stream, many in the fire service will tell you that the third floor may be the highest floor we can reach from the street and still be effective. Could we reach higher floors? Yes, but the penetration would diminish for the reason that we would have to move further away from the building to direct the stream through the window opening properly. Keep in mind the angle of travel the water takes. Too steep an angle of travel and the water will have little effect, reach or penetration into the fire area.

Another way of looking at it would be: The distance the nozzle is placed away from the building should be the same distance that the water stream will travel from the nozzle to enter the building. An angle of 32 degrees will give us our greatest horizontal penetration reach. We can still be effective with our stream, however, if a maximum angle of 45 degrees is not exceeded.

Master streams should be deployed for large fires where reach and penetration of large volumes of water will be more appropriate. If this is the way you are going go, it would be best to operate handlines off a different pumper from the one supplying the master streams. There is a tendency that these handlines could make for an ineffective stream on the master stream appliance. At the same time, operating these different streams for different sources will aid the pump operators, making their jobs less complicated.

—Prepared by *Russell Merrick*

