

FIREHOUSE®

Weekly Drill

DRILL #76: DIRECTING THE STREAM

Introduction

It is not hard to understand that hoseline placement is crucial to fire extinguishment. Being able to get the most water to the seat of the fire as quickly as possible is the key to a successful operation. Therefore, firefighters need to understand how to properly direct a stream so it will be most effective as it pertains to our fire-ground operations.

For this lesson, we are going to look at the placement of outside streams. Gravity plays a big role on the effectiveness of the stream. As soon as the water stream leaves the nozzle, gravity begins pulling it downward causing the water stream to actually take a curved path to our target area rather than a straight line. This curvature actually becomes an advantage for us because the stream will carry farther into the building.

When using master streams from outside, the stream will reach farther into the building before striking the ceiling and being deflected. Additionally, because the stream strikes farther into the building, the deflection of the water off the ceiling has a smaller angle, which allows the water to spread even farther into the building.

Higher is Not Always Better

A good rule of thumb to use when directing a stream into a building from outside, is that the third floor is the highest floor level at which a stream thrown from the street will be effective. In reality, it might be possible to reach higher floors, but this will necessitate moving the appliance farther away from the building to keep the angle of the stream below 45 degrees. The problem with a 45-degree angle is that the most effective angle is actually 30 degrees. Remember, the lower the angle the more reach the stream will have in penetrating the building. Steeper angles will reach the higher floors, but the stream will be less effective as its reach into the structure is diminished greatly.

Having the nozzle placed 40 feet away from the building and directing a stream into the third floor window will give the stream that all-important angle of approximately 30 degrees, which is what we are looking for the reach into the structure. Remember this angle is the one that produces the greatest effective horizontal reach of the stream.



On many engine companies today, we will find a pre-piped monitor or deck gun attached to them. This generally will raise the master stream about nine feet above ground level. In many cases, the firefighters would think this elevation of nine feet would allow them to reach the fourth floor, but this is not always the case. The rule of thumb for maximum effective stream into a building from outside is always the third floor.

In addition to master stream appliances, handlines with smooth bore tips are great for quick attacks on fires. The maximum tip size should not exceed half the hose diameter. So, on a 2½-inch hose, the tip can be 1¼ inches and on a 3-inch line, the size can be 1½ inches.

Safety is always a concern when operating at major fires where master streams are in operation. Building collapse can occur and oftentimes does to some extent. Keep all firefighting personnel out of the collapse zone and, where possible, position their operations in a flanking position at the corner of the structure.

—Prepared by Russell Merrick