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October Newsletter Guidelines for Stretching Hoseline at Structural Fires
by Vincent Dunn

When and where a fireground commander orders the first attack hoseline to be stretched is a critical decision at a building fire. Most structural fires are extinguished by the first hoseline. If the first hoseline stretched is sent to the right location and it extinguishes the blaze, the second hoseline will not be needed or is stretched only as a precaution.

A properly positioned first attack hoseline saves most lives at a fire, confines the fire and reduces property damage. If the hoseline goes to the right place and extinguishes the fire, every other firefighting tactic will go smoothly. The searches will proceed quickly, firefighters will get into position and venting to save lives will be effective; sufficient personnel will be available for laddering, examination for fire spread will be performed safely above the fire and rescues of trapped victims will proceed with less danger to firefighters.

There are no hard and fast rules for hoseline placement. A fire chief and company officer must be flexible. However, there are some general guidelines of hoseline placement. The following hose placement procedures have proven effective in the FDNY.

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Photo by: Robert Mitts August 15, 1997

Placement of the first attack hoseline. For a room and/or content fire in a house or apartment, the first attack hoseline is stretched by firefighters through a front, rear or side doorway. The hose stream nozzle is positioned and used to drive heat, flame and smoke from inside to outside through a vented window or other door or through an opening created by an "outside vent firefighters" The first attack hoseline stream is usually not directed into a flaming window. One of the advantages of advancing the first attack hoseline through a door rather than directing it through a window is that unconscious, trapped victims are often found inside the door or in the hallway leading from the door to the fire. An analysis of fire victims trapped and killed in burning buildings revealed most fire victims are discovered in the fire area. The next location in which fire victims are discovered is in the hallways or corridors leading to an exit. They were trying to escape the flames and were rendered unconscious by smo e, heat or toxic gases in the path to the door. Firefighters advancing the first attack line through a doorway often come across these victims on the way to extinguishing the fire.

Placement of the second attack hoseline. Most fire departments in America do not have enough firefighters at a fire scene to stretch a second hose. Mutual aid or a firefighter responding from home must arrive before a backup hose is stretched, so this makes correct placement of the first line even more important. However, when there are enough firefighters to stretch, where should the second line go? If there is an exposure problem, such as flame spreading to a nearby structure, the second line goes there; flame coming out a window is not an exposure problem if there is no nearby building. At most building fires there are no visible outside exposure. The exposure problem is most often an inside exposure.

What if flames are sweeping up a stair or shaft, or fire is spreading inside a wall or concealed ceiling space? To protect against inside fire spread the second line is needed inside the burning building. The second hoseline stretched follows the path of the first line up the interior stair or to the side door or rear entrance. The advantage of having a backup, second hoseline , stretched into the burning building right behind the first line are:

1. This is a safety action to protect firefighters operating the first attack hoseline in case of explosion, flashover or collapse.
2. If the first hose suffers a burst length or broken nozzle, the second hose team can move into position and attack the blaze.
3. If there is too much fire for one hose attack team to extinguish, two hose lines working side by side may be successful.
4. If there is no need for the second hoseline, and the first hose attack team can handle the room and content fire, it is important to get the second hoseline up to the floor above, the attic or an adjoining room to cut off spreading fire.

Improper hose placement. Once I did not follow the above hose placement guidelines during a fire and it almost became a disaster. The fire occurred on the second floor of a four-story multiple dwelling of ordinary construction. An inexperienced firefighter was assigned to perform forcible entry. Upon arrival, flames were blowing out one window which led directly to a fire escape on the front of the building. The first hoseline had already been stretched up the interior stairs and charged with water. You could hear the firefighters' tool-pounding attempts to force the door. After I ordered a second hoseline, flames broke out a second window and began to spread into an open window on the floor

above. An unusual radio report from inside stated they could not force open the heavily padlocked apartment door. As firefighters stretching the second hose passed in front of me, I redirected them to stretch up the fire escape and advance in on the fire through the fire escape window. I also ordered the hose team inside to bring the hose up to the apartment above to stop the "auto exposure fire spread." As the firefighters advanced through the burning apartment from the fire escape, disaster struck! The forcible entry team suddenly forced open the door to the second-floor apartment. The firefighters advancing the hose from the fire escape drove flames out into the public hall and up the interior stairs. Now I had fire spreading up the interior stairs and a fire company with a hoseline trapped on the floor above the fire. After several "Maydays," the firefighters with the initial hoseline up the interior stair fought their way back down the stair with the hose, and the firefighters advancing the hose from the fire escape window extinguished the fire in the second floor apartment. After the fire was out, I realized what an error of hose placement I had made.

The lessons I learned were:
1. The importance of forcible entry and coordination with the first attack hose line
2. The first hoseline goes to the seat of the fire and attacks the fire from a door and pushes the fire outward and protects the interior stairs.
3. The second hoseline should back up the first hoseline and if necessary goes to the floor above.
4. If necessary, the third hoseline should be stretched and advanced from the fire escape window.
5. A hoseline should not pass fire.
6. When forcing open a door, it is important to control the door and not let it swing open into the flaming apartment. A gloved hand or six-foot hook can sometimes reach in and close a door or a rope tied to the door knob during forcible entry can control the door.

Get water in the first hoseline before you stretch a second hoseline.

A wise old pump operator told me "Kid, hose lines should be stretched in series, not parallel." During the initial attack on a burning building, flame and smoke may be visible at several locations. Fire may show at the front door, rear windows and side alleys. People in the street will call for help from several locations and urge you to stretch hose lines to several different places at the same time. If three or four hose lines are stretched at the same time to different locations, this can create a disorganized operation and actually delay water being delivered into the fire. Firefighting resources well be fragmented and ineffective.

Generally, it is more effective for all firefighters on the scene to stretch one hoseline at a time. Get water in this first hoseline before you start another. All the firefighters are needed to connect the pumper to the hydrant, choose the nozzle and hose, stretch the hose from the pumper to the fire and charge the hose with water. After this is completed, start the second line. After the second hoseline is stretched and charged, start the third line if necessary. There is a saying in the fire service: "Stretch the first hoseline right and you may not need another."

Size-up the hose stretch. A veteran fire chief told me that one of the most important size-ups to make at a fire is to size-up the hose stretch of the first attack hoseline.

The first line stretch is a critically important task. It determines the outcome of the entire fire. If there are any problems with the first hoseline stretch, such as, dry, hydrant, burst hose, coupling disconnect , broken pumper, the chief must take action to solve the

problem. After you size-up the fire, then size-up the hose stretch.
An experienced fire chief will usually stay in the street and observe the first line stretch before going inside to supervise the interior firefighting attack if needed. A quick glance at the pump operator, the hydrant hookup, the flow of the hose layout and stretch will tell a lot about how things are going. Watching the hose jump and straighten out while being supplied with water and listening to the radio messages between the hose team officer and pump operator will tell of low pressure or kink problems.
A good predictor of how the entire firefighting effort will proceed is the success or failure of the first attack team's hose stretch. A frozen or broken hydrant, rubbish in the hydrant that may clog the strainer on the pumper inlet, centrifugal pump failure, a hose length bursting from overpressure, kinks or bends in the hose, or broken nozzles can indicate failure unless action is taken by the fireground commander.
Stretch a hoseline to the front of a building. After one, two or three hose lines have been stretched into a burning building and firefighters are advancing them toward the fire, sometimes there is no obvious need for another hoseline. This is the time to have firefighters stretch a hoseline to the front of the building and "stand fast" until there is another call for a line.
When you order a fire company to stretch a hoseline to the front of the burning building and stand by, you are being proactive with your hoseline placement. If there is a sudden need for a hoseline to cut off spreading fire in a building, the firefighters standing fast with the line nearby can quickly take it inside the building. The advantage of stretching a hose to the front of the building and standing by is that the most time-consuming part of the hose stretch is completed. The firefighters must find a nearby pumper, select the proper nozzle and hose size, and stretch the hose to the front of the building with excess hose folded nearby. If the hose line is not needed, however, you can order the fire company to "take it up."
Hose stretching from a standpipe outlet. The initial attack hoseline stretched from a standpipe system during a serious fire in a commercial building should be connected to the outlet on the floor below the fire, not to the outlet on the same floor as the fire. The advantages to connecting the hose to the standpipe outlet on the floor below the fire are:
1. It prevents overcrowding. The forcible entry team has space to use tools, control the door and make preliminary searches from the stair landing on the fire floor, while the hose team on the floor below can stretch out and connect the hose and nozzle on the stair landing out of the way.
2. If flame and heat explode out the door to the fire floor, that could prevent a firefighter from operating the nearby standpipe outlet valve controlling water pressure. Also, firefighters operating the hoseline could temporarily back down the stairs several steps to avoid heat and direct the stream through the open door.
3.Excess hose can be played out in the hall and stairs safely on the floor below the fire. FDNY Firefighter John King Engine company 23 was killed at a fire in which he was laying out excess hose being connected to a standpipe on the same floor as the fire. As he played the uncharged hose folds up the stairs, the door was forced open. So much fire, heat and smoke burst out of the doorway that King was trapped on the stairs above the fire.

Hose stretching to supply a standpipe and sprinkler. A fireground commander must always size up the front of a burning building to determine if it has a sprinkler system siamese. If it does, the system must be supplied with water. Fire departments have been

sued for considerable sums of money to compensate for fire damage when a sprinkler system was not supplied or the water supply to a sprinkler from a water main was diverted to pumpers. A sprinkler system can extinguish a fire quicker and more effectively than firefighters. The sprinkler head is already in position directly over the fire, and water supplied to the sprinkler is not impeded or slowed by locked doors, blinding smoke or failure to locate the fire. However, when a building has both a sprinkler system and a standpipe system and firefighters enter the building to fight the fire, the first supply line to the siamese should go to the standpipe system. This is to protect the firefighters. The second supply line should be connected to and supply the sprinkler system.

Stairway or shaft fires. When radio report from firefighters inside multi-story building state fire is spreading up a stairway or shaft, the fireground commander must order a hoseline stretched to the top floor. This line can be stretched up a ladder or fire escape to cut off the flames spreading up the stair or shaft. Stretching to the top floor up a ladder is safer than a fire escape. Firefighters stretching a hose line to the top floor, up through the well of a fire escape may be cut off by fire spreading out of an apartment below them. A stair or shaft fire means heat, flame and smoke will rapidly build-up on the top floor and spread to the cockloft, attic space and mushroom out to adjoining spaces on the top floor. The first hose may have already been stretched to the fire origin on a lower floor, but once fire is discovered spreading up a stair or shaft, the life hazard and fire spread danger on the top floor must be considered. Stretch a hose to the top floor; however, protect this hose team going above by placing ladders at the top floor for their escape and venting the top floor.

Venting Warning! Even before the hose line stretched to the top floor, the fireground commander must insure all skylights, scuttle covers and roof bulkhead-stair doors are vented to release flame and smoke and prevent mushrooming.

The FDNY conducted scientific full-scale tests with New York Polytechnic Institute on shaft fires in multiple dwellings. Tests revealed fire spreading up an open shaft (open at the top) will spread into the top floor through a window first at the top floor before it will spread into any of the lower floors. As the flames and combustible gases rise up the shaft they increase in temperature. The hottest temperatures were recorded at the shaft opening at roof level. So when fire spreads up a stair or shaft, vent the top floor and search this area for trapped victims and fire spread and get a hoseline to the top floor.

Lessons learned

One of the first lessons a fireground commander learns is that the hose stretch from the pumper to the fire is the most important action carried out at a successful firefighting. Most lives are saved at a fire by correctly positioning the hoseline and extinguishing the flames.

Questions

True or false

1. Most structural fires are extinguished by firefighters operating the first line.

Answer_____

True or false

2. If there are no exposures the second hose line is stretched to back up the first hose line.

Answer_____

3. Which one of the following is the correct answer?

A. It is better to stretch two hose line at a time
B. It is better to stretch one hose line then the second hose line
C. It is better to stretch three hose lines simultaneously if resources are available
D. All of the above are true statements

Answer_____

4. Which one of the following is an incorrect answer?

A. During the initial states of a fire when firefighter are available order them to stretch a hose line to the front of the fire building.
B. When stretching from a standpipe at a serous fire it is safer to stretch from the outlet on the floor below the fire.
C. When the building has both a standpipe and a sprinkler siamese inlet order the first supply line connected to the sprinkler for the safety of the firefighters
D. The first hose line stretch extinguishes most structural fires

Answer_____

5. During a fire spreading up a shaft of a multi story building it is best to order the company to stretch hose to the top floor by which avenue to prevent being cut off by fire?

A. Up a fire escape
B. Up an aerial ladder
C. Hoisting the hose up the front of the building with a rope to the fire floor
D. All of the above are safe avenues
Answer_____

Answers: 1.True; 2.True; 3.B; 4.C; 5.B

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