Temporary Standpipe Operations with 5” supply lines

In the event of a total failure of a building’s standpipe system or a problem with water supply or adequate fire flow to combat a fire in a building equipped with a standpipe system the following method has been developed to supply water into a building utilizing standard fire department 5” supply line and associated appliances. Unless pre-planned, this evolution is not the initial attack method, but a secondary method in the event of problems with a standpipe operation. This can also be used to supplement the use of a master stream device in a high rise fire.

Reasons for problems:

1. Damaged, inoperable or defective standpipe system.
2. Pressure Restricting Valves or Pressure Reducing Valves (PRV’s) that cannot be overridden.
3. Heavy volume of fire requiring greater fire flow.

A 100 foot section of 5” supply line weighs approximately 103 pounds without water and 955 pounds with water. It is possible for a 2 person crew to easily deploy an uncharged single section of 5” supply line into a building via the interior stairs. It is impossible to move the hose once it is charged in the stairway, requiring proper execution of this evolution.

1. Estimate the distance from the entrance door of the building to the stairwell and determine the number of feet needed to complete that stretch.
2. Estimate the number of flights of stairs to be ascended. Allow one 100’ section for every three floors of the building.
3. Remove the 5” hose from the apparatus and lay it on the ground as demonstrated in Figure 1 with each section of folds being 5 feet in length.

Figure 1

4. Make 2 stacks of hose per 100’ section with 10 feet between each stack of hose. Refer to Figure 2.

Figure 2

5. Two fire fighters place the hose on their shoulder and proceed to the designated stairwell. Refer to Figure 3, 4, and 5.

Figure 3

Figure 4

Figure 5

6. Deploying one section of hose is a 3 person evolution. One fire fighter remains at the entrance door to hold the hose, one fire fighter follows the 2 fire fighters deploying the hose to flake hose and make smooth bends on the flights of stairs.

7. Proceed to the designated entry point of the building and flake hose from the entry point to the stairwell designated for fire attack. One fire fighter remains at the entry point and begins to flake hose from the shoulder of the fire fighter in the rear at the entrance to the building. Refer to Figure 6.

Figure 6

8. Flake the hose up the stairs as you ascend. The fire fighter in the rear will have hose deploy from his shoulder first as the fire fighter in the front firmly grasps the hose on his shoulder until its time to deploy his hose. Refer to Figure 7. Move slowly, this evolution requires quality over speed.

Figure 7

9. The trailing fire fighter should make sure the hose makes smooth bends in the stairway prior to charging the hose. Once water is in the hose it will be impossible to move. Refer to Figures 8, 9 and 10. Note: Figure 10 doesn't allow a proper bend in the hose, resulting in a kink. This is the most vital step of the entire procedure.

Figure 8

Figure 9

Attempt to Eliminate Kinks or Sharp Bends

Figure 10

10. Doors should be chocked open on floors below the fire as hose is being deployed to avoid blocking an exit for civilians and fire fighters. Once the hose becomes charged against a door leading to a floor or exit, that egress point becomes useless. Refer to Figures 11 and 12. **EXTREME CAUTION SHOULD BE EXERCISED IN THE EVENT OF A PRESSURIZED STAIRWAY IN A HIGH RISE SITUATION. IF MULTIPLE DOORS ARE LEFT OPEN, IT WILL BE IMPOSSIBLE TO PRESSURIZE THE STAIRWAY TO EXPELL SMOKE.**

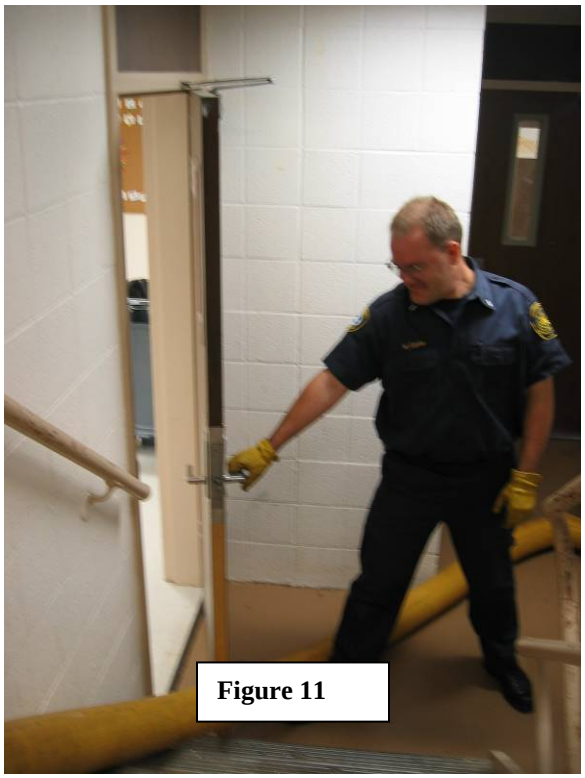

Figure 11

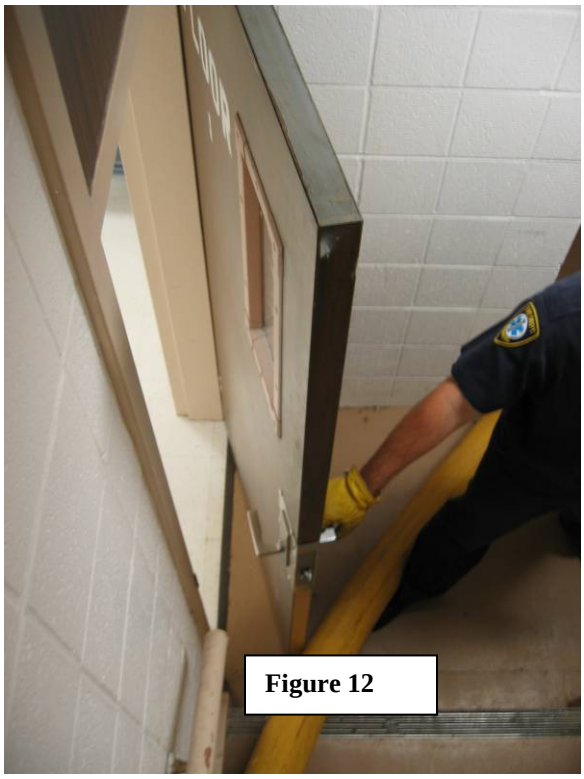

Figure 12

11. At the end point of the 5” hose standpipe evolution place a 3-way stortz valve and stretch fire lines from that point forward into the building. The 5” hose stretch should terminate a minimum of one floor below the fire floor. Consider stretching the 5” into the hallway or common area of the floor below if needed. Refer to Figure 13.

Figure 13

Notes:

1. Fire fighters need to make connections in the hose as the line is stretched up the stairwell. It is essential to make the connections prior to deploying the next section of hose in stretches that require more than one hose length. Make sure fire fighters are equipped with wrenches. Refer to Figure 14.

Figure 14

2. Pump adequate pressure into the hose from the supply engine company. An in-line pressure gauge should be placed at the discharge point of the 3-way stortz wye to monitor pressure in the system (just as you would in a standard evolution if you were using a standpipe connection). Refer to high rise drill book pages for the proper pressure to maintain at that point in the system.
3. This evolution is a labor intensive operation. One fire company is going to be needed per section of hose deployed. One section of hose will stretch approximately 3 stories. Refer to the following chart to estimate the number of sections of hose needed to complete the evolution.

Hose Estimator for stairway:

Engine Company to Entrance of Building near Stairwell - Estimate of this distance

Building Entrance to Stairwell: *Estimate of this distance*

1 to 3 floors	1 section	24 to 27 floors	9 sections
3 to 6 floors	2 sections	27 to 30 floors	10 sections
6 to 9 floors	3 sections	30 to 33 floors	11 sections
9 to 12 floors	4 sections	33 to 36 floors	12 sections
12 to 15 floors	5 sections	36 to 39 floors	13 sections
15 to 18 floors	6 sections	39 to 42 floors	14 sections
18 to 21 floors	7 sections	42 to 45 floors	15 sections
21 to 24 floors	8 sections	45 to 48 floors	16 sections

4. If hose is raised vertically up a stairwell it should be strapped and tied off approximately every 10 feet with nylon webbing or rope.
5. Depending on conditions and situations present, Incident Commanders should consider allowing fire fighters to wear fatigue uniforms and regular shoes during this evolution as long as they remain below the fire floor. This will allow for better rested fire fighters to perform fire fighting work once this task is completed.