Chapter 7.0

Hose Evolutions

Hose evolutions are designed to provide basic fundamental skills and abilities that can be used in many different circumstances and scenarios during emergency operations. They build knowledge, skills, and abilities in areas such as hose handling, making and breaking connections, water supply, etc. These evolutions should be incorporated into hose training regularly, but are not the sole component of hose training. Individual hose handling and advancing techniques, such as those illustrated in the previous chapter, should be practiced frequently and consistently for individual confidence and competency. This chapter will be broken down into the following sections:

7.1 Individual Task Performances
7.2 Company Task Performances

Individual Performance Standard
Taking a Hydrant for a Supply Line

SUBJECT: Taking a hydrant for a 5" forward lay supply line.

OBJECTIVE: To secure a water supply line for a fire engine from a hydrant.

CONDITIONS:

A. A fire engine with an engineer will be placed at a predetermined location.

B. The "individual" will be equipped with full structure PPE including: helmet, coat, pants, boots, and gloves. No SCBA.

C. The individual will start in the jump seat. When given the signal to start, he/she will exit the jump seat and remove the hydrant bag and place it near the hydrant. The individual will remove the 5" hose from the lay bed and secure it to the hydrant and signal the fire engine to lay the line.

D. The individual will, when the fire engine is no longer pulling tension on the hose:

1. Unwrap the hose from the hydrant or lift the hose strap from the hydrant.
2. Using the hydrant wrench, remove the steamer port and 2 ½" caps and place the hydrant wrench on top of the hydrant.
3. Connect the hydrant gate valve to the outlet away from the fire.
4. Connect the Storz valve to the steamer port.
5. Connect the 5" hose to the Storz valve on the steamer port.
6. When given the signal the engineer is ready for water, fully open the hydrant to charge the supply line.

TIME: **A.** Time will start when the individual's foot touches the ground.
B. Time will stop when the hydrant is fully open.

DEPARTMENT STANDARD: 2 MIN.

Individual Performance Standard
Make-n-Break

SUBJECT: Make-n-Break Hose Evolution.

OBJECTIVE: Connect two 2 ½" gate valves to the hydrant ports, connect three lengths of 2 ½" hose together, place a 2 ½" nozzle on the end of the hose, remove the 2 ½"nozzle from the hose, disconnect the three sections of hose, remove the gate valves, and replace the hydrant caps.

CONDITIONS:

A. A hydrant wrench shall be placed on top of the hydrant.

B. Two 2 ½" gate valves will be connected together, but not tight, placed next to the hydrant and connected to a 50' section of 2 ½" hose stretched out away from the hydrant.

C. A second section of 2 ½" hose shall be stretched out from the first section and not connected.

D. A third section of 2 ½" hose shall be stretched out from the second section and not connected, a 2 ½" nozzle will be placed within reach of the end of the third section.

E. The evolution will begin at the hydrant, this is the make portion of the evolution, he/she will remove the hydrant wrench from top of hydrant, remove the two 2 ½" caps, attach one gate valve to one port and the gate valve with the hose attached to the other port, he/she will proceed to the end of the first 50' section of hose and make that connection, then proceed to the end of the second 50'section and make that connection, then to the end of the third section and place the nozzle on the end.

F. Now for the break portion of the evolution, he/she will remove the nozzle put it back, reverse course and disconnect the second and third section of hose, disconnect the first and second section of hose, then proceed to hydrant, remove both gate valves, replace caps, tighten them, and place hydrant wrench on top of hydrant.

TIME: **A.** Time will start when he/she touches the hydrant wrench.
B. Time will stop when he/she places hydrant wrench safely on top of hydrant and removes hands.

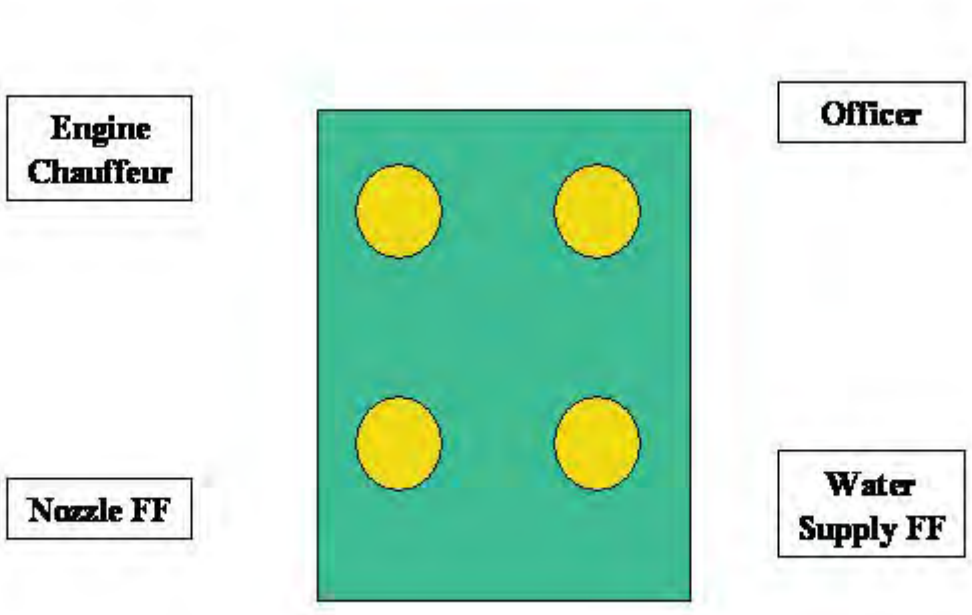
DEPARTMENT STANDARD: **3 MIN**

Engine Company Riding Assignments

SUBJECT: Working Positions

DEFINITION: Individually assigned numbers refers to the working positions on apparatus'. This is for convenience in training scenarios and to clearly assign task responsibility.

- #1 – Officer
- #2 – Engineer
- #3 – Nozzle Position
- #4 – Hydrant Position



Company Performance Standard #1
2 PERSON ATTACK

SUBJECT: 2 Person Engine Company Attack

OBJECTIVE: To safely and quickly initiate control operations at a structure fire with limited initial manpower.

CONDITIONS:

- **A.** Simulating a single family dwelling structure fire.
- **B.** Engine will arrive with 2 personnel in full PPE(no SCBA).
- **C.** #1 will exit the engine and Don an SCBA without going on air.
- **D.** #2 will put pump in gear exit the engine and chock apparatus and set the pump.
- **E.** #2 will Don an SCBA without going on air.
- **F.** #1 will pull the 1 ¾" cross lay to the door of the structure, dress the hose for entry and put on mask/hood/gloves and call for water.
- **G.** #2 will charge the line.
- **H.** #2 will join #1 on the end of the hose line and put on mask, hood, and gloves.
- **I.** The firefighters will operate the hose line and flow water from the exterior of the structure until the next arriving engine arrives.

TIME: **A**. Time will start when the engine stops at the designated point and the first crew member steps to the ground.
B. Time will stop when the pump is set properly and the nozzle is flowing an effective stream and both firefighters are on the end of the line on air.

DEPARTMENT STANDARD: 3 MIN.

2 PERSONNEL

Company Performance Standard #2

ATTACK ENGINE SUPPLIED BY NEXT ARRIVING ENGINE

SUBJECT: Forward supply line lay to attack engine by second arriving engine.

OBJECTIVE: To safely and quickly attack the structure fire with first arriving engine using tank water, while utilizing second arriving engine to supply attack engine with forward lay from hydrant.

CONDITIONS:

- **A.** E-1 will respond with 4 personnel in full PPE, #3 and #4 with SCBA harness on and mask around neck.
- **B.** E-1 will stop at designated spot approximately 200' from hydrant and prepare to put two 1 ¾" pre-connect attack lines into operation from tank water.
- **C.** #2 will put pump in gear, exit the engine, chock the apparatus and set the pump.
- **D.** #3 and #4 will exit the engine and pull two 1 ¾" pre-connect attack lines to the entrance of the structure and dress hose for entry and call for water.
- **E.** #1 will exit the engine and don an SCBA then join #3 and #4 at the nozzles.
- **F.** E-2 with 2 personnel in full PPE #1 with SCBA harness on will stop at hydrant, #1 will exit the engine and prepare to take the hydrant.
- **G.** E-2 will lay a 5" supply line to E-1 from the hydrant, #2 will assist E-1 with connecting supply line, and E-2 #1 will charge the supply line from the hydrant.
- **H.** E-1 #2 will switch from tank water to hydrant water without causing a large surge in the attack lines or pressure gauge.
- **I.** E-2 #1 will help man the attack lines with E-1 personnel #1, #3, and #4.

TIME: A. Time will start when E-1 with 4 personnel in full PPE stops at designated point and the first crew member steps to the ground.

B. Time will stop when E-1 is supplying two effective streams of at least 125 GPM off hydrant water and both lines have two personnel in full PPE with SCBA operating them.

DEPARTMENT STANDARD: 4 MIN.

6 PERSONNEL

Company Performance Standard #3

5" FORWARD SUPPLY LINE

SUBJECT: Single Engine Forward Supply Line

OBJECTIVE: To safely and quickly secure your own water supply and put a 2 ½" pre-connect into operation.

CONDITIONS:

- **A.** E-1 with 4 personnel in full PPE, #3 and #4 with SCBA harness on, will proceed to the hydrant and position to lay a 5" forward supply line.
- **B.** #4 will exit E-1 and grab the hydrant bag and 5" line and wrap the hydrant with the hose or secure the strap around the hydrant and signal E-1 #2 to "Lay it".
- **C.** E-1 will proceed to the designated location approximately 200' from the hydrant.
- **D.** #4 will take the hydrant according to department standards and charge the line when #2 calls for water.
- **E.** #2 will put the pump in gear, exit E-1 and chock it.
- **F.** #1 will exit E-1 and don SCBA harness without masking up.
- **G.** #3 will exit E-1 and pull either the 2 ½" cross-lay or rear pre-connect, and dress the hose for defensive hose line operation and call for water.
- **H.** #1 will join #3 on the attack line.
- **I.** #2 will supply the attack crew from tank water.
- **J.** #2 will disconnect the 5" from the hose bed and attach it to the large diameter intake(LDH) on E-1 and call for water.
- **K.** #2 will switch from tank water to the hydrant supply line. There should be very little surge or loss of pressure while switching to hydrant supply.
- **L.** Cavitation of the pump or loss of prime while switching to hydrant supply will be considered a failure of the standard.

TIME: A. Time will start when #4 sets foot on the ground.

B. Time will stop when the 2 1/2 "attack line is discharging an effective stream (approximately 250 GPM) utilizing the supply line.

DEPARTMENT STANDARD: 4 MIN. 4 PERSONNEL

Company Performance Standard #4
DRY TAIL SUPPLY LINE

SUBJECT: Combination Forward/Reverse Lay Supply Line

OBJECTIVE: To safely and quickly provide an adequate water supply for a long hose lay when the Attack-engine has to drive down a long drive/lane, or when the hose lay will be longer than 1000'.

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CONDITIONS:

A. E-1 with 4 personnel in full PPE, #3 and #4 with SCBA , will proceed to a designated spot, E-1 will stop and #4 will exit E-1 and grab the hydrant bag and the 5" supply line and secure the hose and instruct #2 to "Lay in".

B. E-1 will proceed forward approximately 200' to the fire scene, #2 will put the pump in gear, exit E-1, set chocks.

C. #1 will exit E-1 and don SCBA.

D. #3 will exit E-1, #1 and #3will pull 2-1 3/4'" cross lays to the entrance of the structure, dress the hose for entry, and call for water, #2 will charge the lines.

E. E-2 will proceed to the end of E-1's dry tail, E-1 #4 will pull the 5" supply line and signal #2 to "lay in"

F. E-2 will proceed away from the fire to the hydrant approximately 200' away.

G. E-1 #4 will connect the two supply lines and proceed to E-1 to assist on back-up line.

H. E-2 #1 will connect the hydrant to the pump intake with the 5" pony section and charge the hydrant, then don SCBA and proceed to back up E-1 attack line.

I. #2 will then connect the 400' hose lay to the large diameter discharge port.

J. E-2 #2 will charge the line when E-1 is ready for water. E-1 should have no more than 100 psi and no less than 20 psi intake pressure.

K. E-1 #2 will change over from tank water to supply line with minimal change in discharge pressure.

TIME: A. Time will start when E-1 #4 exits the engine.

B. Time will end when E-1 is receiving adequate water from E-2 and supplying two 1 ¾" attack lines with adequate pressure and attack line personnel are on air and flowing water.

DEPARTMENT STANDARD: 6 MIN. 6 PERSONNEL

Company Performance Standard #5
TOWER – 1 FORWARD LAY FROM HYDRANT

SUBJECT: Forward Lay to Tower.

OBJECTIVE: To safely and quickly secure your own water supply, set up the Tower, and show an effective elevated master stream.

CONDITIONS:

- **A.** TO-1 with 4 firefighters in full PPE, no SCBA, will proceed to the hydrant and position for a forward supply line lay.
- **B.** #3 will exit TO-1 and take the hydrant and charge the line when #2 calls for water.
- **C.** TO-1 will proceed approximately 200' to a designated location and prepare to set up an elevated master stream.
- **D.** #1 and #4 will exit TO-1 and Don SCBA with no mask and Safety Belts.
- **E.** #2 will put power to the aerial platform, place pump in gear, exit the tower, chock the wheels, disconnect the 5" supply line, connect it to the pump intake, and call for water.
- **F.** #1 and #4 will begin setting the outriggers' and #2 when done with supply line will assist with setting up the tower.
- **G.** #1 and #4 will proceed to the bucket.
- **H.** #2 will have the pump operational before the tower raises.
- **I.** #1 and #4 will have their air supply hooked into the tower supply and operational.
- **J.** #1 and #4 will raise the ladder to an angle between 60 and 75 degrees, and extend it at least 70'.
- **K.** #1 and #4 will call for water and #2 will supply the platform with the appropriate pressure to have an effective stream with 1000 GPM.

TIME:

- **A.** Time will start when #3 exits TO-1 to take the hydrant.
- **B.** Time will stop when TO-1 is supplying an adequate stream at a 1000 GPM.

DEPARTMENT STANDARD: 7 MIN 4 PERSONNEL

Company Performance Standard #6
REVERSE LAY FROM PORTABLE MONITOR

SUBJECT: Reverse lay from a portable monitor.

OBJECTIVE: To safely and rapidly place a portable monitor into operation with an adequate water supply using E-1.

CONDITIONS:

- **A.** The E1 with 4 personnel in full PPE will stop at a predetermined location and #3 and #4 with SCBA harness on will remove the required equipment. (Portable monitor, base, hose fittings, spanners, and securing chain/rope)
- **B.** Pull the 5" supply line and secure it to a stationary object, or use proper technique for a dry tail, and signal the driver to "lay in". (At least 200ft).
- **C.** The portable monitor will be secured using the chain or rope (Either using a keenan's loop or to a stationary object) if possible
- **D.** E-1 will proceed to the hydrant and #2 will connect to the hydrant.
- **E.** #1 will disconnect the 5" from the hose bed and connect it to the large diameter discharge and #2 will pump to the portable monitor. Supply the monitor w/ 1000 GPM
- **F.** #1 will don an SCBA harness and proceed to the monitor.
- **G.** #2, will set the governor / relief valve before the evolution is complete.

TIME:

- **A.** Time will start when the E1 stops at the predetermined location.
- **B.** Time will stop when E-1 is connected to the hydrant and supplying an adequate stream at a 1000 GPM.

DEPARTMENT STANDARD: 5 MIN 4 PERSONNEL

Company Performance Standard #7
REVERSE LAY TO HYDRANT

SUBJECT: Reverse lay from an incident to the hydrant.

OBJECTIVE: To place attack lines into operation away from the fire engine using reverse lay.

CONDITIONS:

- **A.** Using E-1 or E-2 and a 4 person engine company in full PPE, #3 and #4 with SCBA harness.
- **B.** Engine will stop at a designated spot, everyone will exit the engine and remove the necessary equipment: (200' of 2 ½" hose, 2 house bundles, 2 ½" nozzle, 24' extension ladder, axe, pike pole, RIT bag and irons, 2 SCBA, 2 spare bottles, TIC, 5" to 2 ½" manifold).
- **C.** A 5" dry tail supply line will be pulled and secured to a stationary object, or use proper technique for a dry tail, and signal the driver to "lay in", at least 200'.
- **D.** #4 will get back on and the engine will proceed to the hydrant, #2 will connect the 5" supply line to the large diameter discharge and the other end will be connected to the 5" to 2 ½" manifold.
- **E.** #4 will connect to the hydrant using the 5" pony roll.
- **F.** The #1 will don SCBA and #3 will connect the 2 ½" line to the appliance (advance at least 100'), attach a nozzle and flow water.
- **G.** The engineer will provide an effective fire stream.

TIME:

- **A.** Time will start when the engine stops at the designated starting location to unload equipment and crew.
- **B.** Time will stop when an effective stream is being discharged from the attack line(250 GPM).

DEPARTMENT STANDARD: **5 MIN**

4 PERSONNEL