

Prerequisite Training

Learners must have received basic instruction in the use of personal protective equipment, hose, nozzles, have developed basic proficiency in nozzle operation from a fixed position (see Hose & Nozzle Technique: Drill 1), movement of hoselines coordinated with nozzle operation (see Hose & Nozzle Technique: Drills 2 & 3).

Learning Outcomes

1. Recognize key indicators of potential extreme fire behavior
2. React to rapid fire progression in conjunction with ineffectiveness of fire control efforts.
2. Demonstrate tactical withdrawal while maintaining effective flow from the nozzle.

Reference

Grimwood, P., Hartin, E., McDonough, J., & Raffel, S. (2005). 3D Firefighting: Training, Techniques, & Tactics. Stillwater, OK: Fire Protection Publications.

Resource Requirements

This drill requires a pumping apparatus and sufficient hose and nozzles to provide each team of learners with a hoseline. If possible teams should be limited to no more than five learners to maximize practice and minimize session duration. If possible, the same nozzles that will be used operationally should be used for this drill.

Training Prop

Initially this drill can be conducted in an open area where a hoseline can be advanced and withdrawn in a straight line. However, as skill develops, training activity should be moved into a structure with varied size compartments (rooms, hallways, stairwells) where water can be discharged and sufficient water supply to allow all learners to have ample opportunity to practice their skill in moving backward while maintaining effective nozzle operation.

CFBT Instructors

One instructor is required for each team of learners during this lesson.

Learners

The maximum number of learners is dependent on the availability of resources and instructors.

Safety

Inspect the training area prior to conducting this evolution to ensure that there are no walking or working surface hazards. Instruct the participants to use caution when directing water from hoselines.

Personal Protective Equipment

Learners should wear structural firefighting clothing and self-contained breathing apparatus during this drill.

Scene Control

Scene control will vary to some extent based on the specific training location. The immediate training area will be limited to participants and (accompanied) observers of the training activity.

If in-service apparatus is at the training location, position it to ensure ease of egress.

Instructional Activities

This lesson involves the following instructional activities. Base your instructional approach on learners experience level and understanding as the lesson progresses. It is essential that learners have mastered basic hose handling and nozzle technique as developed in Hose and Nozzle Technique Drills 1-3. If necessary, provide a quick review of these skills.

1. Review the key indicators of the potential for extreme fire behavior.

Use questions to elicit key indicators of potential for extreme fire behavior, emphasizing the importance of beginning size-up before entry and continuing to assess conditions while operating inside the building.

- a. Flashover:
- b. Backdraft:
- c. Smoke Explosion:
- d. Flash Fire:

Note: Reinforce that the best way to deal with extreme fire behavior phenomena is to prevent them. Operations should focus on proactive control of the fire environment and extinguishment of the fire. However, firefighters must always be prepared to react immediately in the event that they cannot control the fire and safely maintain their operating position.

2. Identify key triggers for immediate tactical withdrawal (to a safer area).
 - a. Flaming combustion overhead that is not controlled by gas cooling
 - b. Increasing temperature that is not alleviated by gas cooling and requires a position lower than a kneeling crouch.
3. Have the learners practice immediate nozzle operation and tactical withdrawal.
 - a. Have the learners practice moving the hoseline backward while applying long pulses or a continuous application of water in a fog pattern.

Water that is turned to steam in the hot gas layer does not increase the volume of hot gases and steam (contraction of the hot gases exceeds the expansion of steam). However, water that turns to steam on contact with hot surfaces adds to the volume of hot gases and steam (as there is little contraction of the hot gases). While it may be difficult, the nozzle operator should work to maximize cooling of flaming and unignited hot gases while minimizing water application to hot compartment linings.

Reinforce the importance of managing the hoseline behind the nozzle team. This may require use of a third team member at the door or the firefighter in the “tools” position may need to drop back in order to assist in hose movement.

- b. Have the learners practice moving the hoseline backward in a complex environment (around corners and through doorways) while applying long pulses or a continuous application of water in a fog pattern.

Emphasize the importance of using doors as a barrier to fire spread. This is particularly important when dealing with wind driven fire conditions. Close the door to control the air track and block the flow path of hot gases and flames.

4. Debrief all participants focusing on observations and conclusions.

Integration

Hose and Nozzle Technique Drill 8 can be used as a stand-alone training exercise or elements of this drill can be integrated into other training activity. For example, when conducting hose evolutions (focused on deployment of supply and attack lines), elements of Hose and Nozzle Technique Drill 8 can be integrated with deployment of attack lines.