

Union County Standard Operating Guidelines
Fireground Operations

Fireground Operations, SOG 3.14

FIRE STREAM MANAGEMENT

1. Scope

The purpose of fire stream management is to promote the most effective and efficient deployment and utilization of fire streams possible during fire fighting operations. Fire streams shall be well coordinated and carried out in the most safe, effective, and efficient manner possible.

2. Responsibility

- a. The IC is responsible for overall coordination and management of fire stream operations.
- b. It is the responsibility of each fire company to provide its own uninterrupted, adequate supply of water. "Provide", in this case, does not mean they must lay the line or that they must pump it. It is their responsibility to get water into their pump, by whatever means appropriate.
- c. Company Officers must assume responsibility for the effectiveness of their fire streams. Such Officers must maintain an awareness of where the fire streams are going and their effect.
- d. All members involved in fire stream operations are responsible for safe operation of such fire streams.

3. Procedures

- a. Factors involved in fire stream selection and deployment are as follows:
 1. Size
 2. Placement
 3. Speed
 4. Mobility
 5. Supply
- b. Characteristics
 - i. Fire control forces must consider the characteristics of fire streams, the fire stream factors, and the fire problem in order to choose the proper nozzle and stream for the task.
 1. Solid Stream – More penetration, reach and striking power, less steam conversion.
 2. Fog – More gross heat absorption/expansion, low reach.
 3. 1 ½" lines – Fast, mobile, low volume.
 4. 1 ¾" lines – Fast, mobile, moderate to high volume.
 5. 2 ½" lines – Slow/immobile, big water, big knockdown.
 6. Master Streams – Mostly stationary, slow to set up, maximum water.
 - ii. Consider hose lines as pumping as much air as they pump water (particularly fog streams). Think of them as fans when making line placement judgments and use confinement and reduction of

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loss. When entering basement fire(s) do not open nozzles until you can see and are near the fire.

- c. Basic Hose Line Placement
 - i. The first stream is placed between the fire and persons endangered by it.
 - ii. When no life is endangered, the first fire stream is placed between the fire and the most severe exposure.
 - iii. Second line is taken to secondary means of egress (always bear in mind the presence of men opposite the second line) if not used for back up of first line.
 - iv. Succeeding lines to cover other critical areas.
 - v. Whenever possible, position hose lines in a manner and direction that assists rescue activities, supports confinement, and protects exposures.
 - vi. Hose lines should be advanced inside fire buildings in order to control access to halls, stairways, or other vertical and horizontal channels through which people and fire may travel.
- d. General Operations
 - i. Use the size of hose line that will eventually be required from the beginning; if you need a big line provide it from the onset. If there is any doubt from the beginning, go to the next size line.
 - ii. When you change commitment from offensive to defensive and pull hand lines out of the fire building, do not continue to operate them as hand lines – convert them to exterior master streams. Give priority to water supply and application. The operating positions of such streams must also be evaluated.
 - iii. Do not operate fire streams into smoke – fire location must be determined before water can be effectively applied.
 - iv. Fire streams must deliver an effective rate of flow (GPM) in order to overcome the amount of heat being generated by the fire (BTU). In other words, the amount of water and the rate at which it is applied to the fire must be enough to absorb more heat than is being generated by the fire.
 - v. As soon as a fire is knocked down, the rate of flow (GPM) should be reduced or discontinued according to the situation to hold water damage to a minimum.
- e. Attack Lines
 - i. Offensive attack lines must be highly mobile. As their movement slows down, they necessarily become more defensive in nature and effect. Many times effective offensive operations are referred to as “aggressive”.
 - ii. Offensive attack positions should achieve an effect on the fire quickly, consequently back up judgments should also developed quickly. If you apply water to an offensive attack position and the fire does not go out react; back it up.

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- iii. Beware of hose lines that have been operated in the same place for long periods. Fire conditions change during the course of fire operations and the effect of hose line operation must be continually evaluated. If the operation of such lines becomes ineffective, move, adjust, or redeploy them.
 - iv. Beware of the limitations of operating nozzles through holes. The mobility of such streams is limited and it is generally difficult to evaluate the effectiveness of such streams. Sometimes, you must breach walls, floors, etc., to operate – realize the limitations of such situations.
 - v. Have attack lines ready during forcible entry operations. Attack crews should be fully protected and supervised before forcible entry is started.
 - vi. If you commit attack crews to inside operations, do not operate exterior streams into the same building – particularly ladder pipes. Do not combine interior and exterior attacks in the same building. It may be necessary to coordinate pulling crews out of the building while an exterior heavy stream knockdown is made. Know when to shut down nozzles – many times continuing operations of large streams prevent entry and complete extinguishment.
- f. Aerial Streams
- i. Ladder pipes are particularly useful and effective when operated on large open-type fires. A good general rule is that you have, in effect, written off the building (or portion) when you initiate ladder pipe operations and you are essentially in the defensive mode.
 - ii. Ground crews should be advised before ladder pipes go into operation.
 - iii. Do not operate fire streams down ventilation holes during offensive operations.
- g. Water Supply
- i. During large-scale operations, Fire Officers must be mindful of the fact that when several engines attempt to draw from the same water system, considerably less water is available and at a reduced residual pressure.
 - ii. During alarms in which large quantities of water supply is anticipated as, or becomes a problem, the IC should request a Water Supply Officer.