Tempe Fire Department Policies and Procedures
Fire Stream Management
207.06
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The following items represent an index of the tactical effectiveness of hose lines:

. Size
. Placement
. Speed
. Mobility

These factors also represent the options involved in fire stream management.

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.

Basic Hose Lines Placement

A. The first stream is placed between the fire and persons endangered by it.

B. When no life is endangered, the first stream is placed between the fire and the most severe exposure.

C. Second line is taken to support the initial attack.

D. Succeeding lines to cover other critical areas.

E. Whenever possible, position hose lines in a manner and direction that assists rescue activities, supports confinement, and protects exposures.

Hose line judgments generally involve the trade-off of time versus pure tactical placement.

When you make a decision on what size fire stream to apply, select the size that is actually required. Beware of automatically going for the size you use most often; or the size that is fastest/easiest.

When you change commitment from offensive to defensive and pull hand lines out of the fire building, do not continue to think in terms of hand lines -- convert to exterior master streams. Give priority to water supply and application. The operating positions of master streams must be evaluated.

Fire control forces must consider the characteristics of fire streams:

Solid Stream

Advantages:
- Greater reach, penetration
- Better visibility due to the stream characteristics and less steam generation
- Stream of choice for CAFS, less prone to clog

  Guidelines for operating solid streams should include the following:
  - Open the valve all the way
  - Due to the constant nozzle reaction operating inline is the preferred method
  - Apply water on the burning material

Disadvantages:
- Limited mobility
- Conductive
- Less heat absorption

- Often the best ways to move a solid stream is to shut down completely, redeploy, and then operate the nozzle.

Fog

Advantages:

- Adjustable pattern
- High steam conversion
- Adjustable gallonage
- More heat absorbtion

Guidelines for operating fog streams include the following:

- Open the valve all the way
- Twist the tip to the RIGHT for a TIGHT (straight stream) pattern, to the LEFT for a LARGE (wide) pattern
- Twist the gpm selector to the RIGHT for LIGHT (low gpm) water, and to the LEFT for LOTS (high gpm) water
- Use an indirect or direct attack for fire control
- Pencil into hot gasses overhead to prevent flashover

Disadvantages:

- Less reach, penetration
- Can disturb the thermal balance
- Higher nozzle reaction (can be reduced is set on a wide angle)

1 ¾ " Lines - Fast, mobile, low volume.

2-1/2" Lines - Big water, big knockdown, requires more manpower for mobility.

Master Streams - Mostly stationary, portable master streams can be slow to set-up - maximum water.

Piercing Applicator Nozzles – May prove very effective in difficult to reach and/or confined space fires, i.e. attic fires, basement fires, fires in walls or other concealed spaces.

Choose the proper nozzle and stream for the task.

Offensive attack activities 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."

Beware of the limitations of operating nozzles through holes. The mobility of such streams is necessarily 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.

Consider that hose lines pump as much air as they pump water (particularly fog streams). Think of them as fans when making line placement judgments and use the fan characteristics in a manner that provides for confinement and reduces loss.

If you use an exterior stream, use a big one. Straight bore tips provide better penetration for heavy streams.

Have attack lines ready during forcible entry operations. Attack crews should be fully protected and supervised before forcible entry is effected.

Do not apply water to the outside of a roof and think you are extinguishing the fire. Such water application may offer effective exposure protection; but, if part of the roof is intact, it will shed water just like it was built to do and will prevent water from reaching the seat of the fire. This is particularly true of ladder pipe operations.

Do not operate fire streams down ventilation holes during offensive operations.

Fire streams are used to reduce the heat from a fire and to provide protection to firefighters and exposures through the following methods:

- Applying water or foam directly onto burning material
- Reducing the potential of a flashover by cooling the high temperatures of smoke and gases that exist overhead of interior crews
- Hydraulically venting out of windows and doorways to prevent the mushrooming effect of interior fires
- To cool exterior surfaces of exposures
- To create a barrier between the fuel and oxygen using water or foam