



BUILDING BETTER FIREFIGHTERS

THE 5 MINUTE ENGINE CLINIC™

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VOLUME 1, ISSUE# 4 JUNE 24TH, 2013

HOSE BASICS; THE 2½ INCH ATTACK LINE

For many years the 2½ inch attack line was the mainstay of the American fire service. This was especially true in big cities where very large fires were the norm and man power was abundant. In the 1960's and 1970's fire duty in urban America was at an all time high and manning levels started to drop due to the financial crisis in our country. The fire service began to question the 2½ inch lines usefulness. Unfortunately this trend toward smaller, lighter easy to maneuver hand lines has lead many departments to abandon the 2½ all together. I will not dispute that 2½ inch hose is difficult to use. The water alone in a 50 foot section of 2½ inch hose weighs 106 lbs. The water in a 50 foot section of 1¾ inch weighs only 52 pounds.

But no combination of smaller hand lines can duplicate the pure knockdown power of one well placed 2½ inch attack line.



The 2½ offers the following benefits;

- Lower friction loss
- High fire flows
- Exceptional penetration
- Exceptional reach

One of the main benefits of the 2½ is the large volume of water applied at a single point. 1-2½ attack line flowing 326GPM through an 1¼ smooth bore tip is flowing a large volume of water which is making contact with the fire at a single point. 2-1¾ lines each flowing 150GPM has a total flow of 300GPM but the smaller volume of water does not make contact with the fire at a single point and does not have the same knockdown power! You need to know the limitations of the 1¾ attack line. The 2½ attack line may not be your primary choice for fire attack, but under the right conditions it is invaluable to your success at a fire. (see; The engines primary mission by Bryan T. Smith)

TACTICAL CONSIDERATIONS

When should we deploy the 2½ attack line?

- Whenever you encounter advanced fire conditions upon arrival, regardless of the type of occupancy!
- When an offensive fire attack is not appropriate or safe to conduct.
- Large un-compartmentalized structures such as supermarkets, warehouses, strip-stores

- Anytime you are unable to determine the location, size or extent of a fire. Always plan for the worst case scenario and be prepared.
- Fires in Hi-Rise buildings. Due to the delay in reaching the fire occupancy in a hi-rise you must always plan to encounter an advanced fire condition.

- Whenever you encounter a fire that cannot be safely extinguished up-close. This could be an outside fire such as a large area of trash or brush on fire.

At each of the fires described above you will need the 2½ attack lines. Hi-flow large volume flow and the deep penetration and reach of the stream to safely extinguish the fire.

FLOW RANGE

Traditional Rubber lined

2½ inch hose

Max flow-500GPM
Friction Loss (# = lbs.)
13# per-100' @ 250GPM
18# per-100' @ 300GPM
25# per-100' @ 350GPM
32# per-100' @ 400GPM
50# per-100' @ 500GPM

Woven polyurethane lined

2½ inch hose

Max flow-500GPM
Friction Loss (# = lbs.)
10# per-100' @ 250GPM
14# per-100' @ 300GPM
19# per-100' @ 350GPM
26# per-100' @ 400GPM
30# per-100' @ 500GPM

2½ Smooth bore stack tips

1 inch = 210GPM
1 1/8 inch = 286GPM
1 ¼ inch = 326GPM
@ 50 psi nozzle pressure

2½ Combination Fog Nozzle GPM settings

150-GPM
200-GPM
250-GPM
@ 100 psi nozzle pressure

To realize all of the advantages of a 2½ attack line firefighters and officers must be thoroughly familiar and well trained, are you?

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Firefighter Toolbox

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