



A kink is a kink is a kink: Or answering the smoothbore fog question, again.

By charles bailey for tinhelmet.com

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I was recently asked by a reader about smooth bore nozzles and fog nozzles. I don't really remember if I have written anything about that on this site and so I will here because it is easier to write it again than to look all over again for an old statement that I might no longer agree with.

A good friend of mine likens the smooth bore v. fog debate to the Ford v. Chevy debate. I have heard passionate ramblings about the virtues of both, and over the years have wavered back and forth between the two. This is what I think now. I think that if your department has been successfully fighting the fires that they usually fight with a fog nozzle and nothing has changed about the fires they fight, then the nozzle probably shouldn't change either. On the other hand if your department has successfully fought the fires it usually fights with smooth bore nozzles, they should probably leave things be as well.

Each type of nozzle has a place, but in the end it still takes a crew to stretch the line to the fire and put water onto burning surfaces. There is some really neat science behind water droplet size and heat absorption. But the simple fact, again, is that someone still has to stretch a line into the burning building.

Many myths still abound about the differences between the smoothbore and fog. I will take a stab at a few of them:

Smooth bore nozzles flow more water.

Pound for pound of nozzle reaction this used to be true. But with the advent of 50psi automatic nozzles you can get the same flow at the same nozzle reaction out of a fog.

Smooth bore lines are easier to kink.

Well here we are again at the nozzle pressure issue. If I am pumping 100psi to a fog nozzle as the nozzle pressure sure there is a higher pressure in the line making it less likely to kink. However, the trade-off is that it is harder to move and well with the advent of the low pressure fog nozzles you are back to square one.

You know what you are flowing with a smooth bore. (i.e., under pressurized lines are readily noticeable.)

This is true to a certain extent. I think some people really believe that they know, without a flow meter within three states, what they are flowing. The pressures we use are all estimations in one way or another. While you may be able to tell that you have a poor stream from your smooth bore line you may still be flowing a tremendous amount of water. The water pressure/supply guru of the College Park, MD Vol. Fire Dept. has experimented with using a 35 psi nozzle pressure for smoothbore lines to find that he lessens the nozzle reaction considerably for an only slightly reduced volume. It is not how pretty the stream is that matters it is how much water in the right configuration is making contact with the burning surfaces.

Smoothbore nozzles have greater reach and penetration than their fog nozzle cousins.

Well, that depends on a few things, not the least of which is what nozzle, hose, and pressure combination you measure and how you measure that. Just know that the Branchville Volunteer Fire Company did some really rudimentary test on total and effective reach to find no practical difference between our fog nozzles on straight stream and the smooth bore nozzles. Others have conducted more scientific research and come to the same conclusion.

Finally, the smoothbore nozzle cannot protect you like the fog nozzle can.

My answer to this is simple. Protection comes in the form of adequate fire flow as part of a well coordinated fire attack. In other words if you bring 100 GPM to a 500 GPM fire it does not matter how the water is delivered...YOU LOSE. If you are flowing water on a fire at 150 GPM for 10 minutes and the fire is just as big as when you started, you should have started out bigger. The idea is that a handline will put out as much fire as it can put out in about 90 seconds...after that you are wasting time and waiting for it to burn out. Putting the fire out is protection enough for me.

Now the idea I think people are referring to with this argument is the idea that the fog nozzle somehow pushes the fire away from you. I don't remember where I saw some recent research on handlines and airflow (please write in if you remember). That research showed that a fog nozzle on straight stream does not introduce that much more air into the room than a smoothbore but you can move just as much air with a smoothbore nozzle as with a fog, should you want to (like venting a room) if the bail on the smoothbore is opened only halfway.

Conclusion

I know that there is so much more to this discussion. I know that there are people on both sides of the fence chomping to hash this debate out over and over again. I don't know if that Ford v. Chevy metaphor is the best but I do know that a professional NASCAR driver can make it around the track faster than me no matter what car he is driving, likewise a professional fireman should be able to

put the fire out no matter what nozzle he has in his hand. I personally prefer the smooth bore simply because it is cheaper, easier to maintain, and passes larger debris. Ain't much fancy about that.

In the end it ain't about the nozzle, it's about the team, the tactics, and the man on the end of the line.