

“The Safe and Effective Use of Fog Nozzles: Research and Practice”

Written by John E. Bertrand and John D. Wiseman

A review by George Oster, Fire and Emergency Services Consultant.

If you are satisfied with attacking structural fires based on myths, misconceptions and bad science don't bother with this book!

If you are content with hurting yourself and your fire fighters by making manual fire attack less effective and more dangerous than it needs to be, ignore this book!

If you like progress but hate change, don't bother.

Too bad I need to be so blunt but none of us have enough time to mince words – the next bell could strike and you'll be out the house with our straight bore nozzles, over application of water and under application of your ability to do better.

Fog Nozzles is a must read for everyone on the spike, every officer, pump operator and, even you truckies – you're getting burned by bad water application so listen and read up! Bertrand and Wiseman have used keen senses of the scientific approach, a thorough knowledge of how we got to where we are and first-hand experience and observation to help us understand what happens when the wet stuff hits the hot stuff. However, the real strength of this book lies in their ability to teach us how to do a better job of fire fighting – a mean job we still needed done.

The first part of this finely written book traces the early, faltering steps of the fire service trying to figure out methods to make water application more effective in fire fighting. This section describes the early fog nozzles, used over 100 years ago, the indirect method of attack described by Layman and the first controlled experiments of the post war and 1950's era. Don't skip this part – it demonstrates the basic format for the research that came later and the scientific approach we must today use if we are to progress.

The mid section of *Fog Nozzles* provides one of the best explanations of the science behind the application. These are the facts, not the fiction, of water application. This is the book's backbone, dispelling many of the myths (“pushing the fire”), pseudo science (producing steam is bad in fire attack) and just plain wrong ideas (restricting fog nozzles to use only in attics) floating about the fire service regarding use of water to extinguish fire.

The mid section is followed by the fun stuff – the tactics of fighting fires. Its premise is based on 15 strategic principles, which set out the guidelines for the tactical techniques of proper water application. The simple principle of “put the right amount of water in the right place” is carefully expanded to the 15 principles and the tactics of applying water to achieve the principles is fully described.

The chapter following tells us how this tool, the fog nozzle works, offering a detailed description of the several designs utilized by nozzle manufacturers. Also provided, again, is some of the science behind the fog nozzle -- hydraulics and reaction formula. These are important concepts if you really want to know whether you're attacking that next room and contents or warehouse blowout.

If I were to suggest one addition to this book, it is the a view towards the more strategic. That is, what can be done with the buildings too big for manual suppression? How can the Rate-of-Flow Formula be applied to rationally determine building codes, sprinkler requirements? How could this information be taught to public policy makers and elected officials to help guide them to better, cogent codes, requirements and community planning. However, the good thinkers who read this book will make the leap and be able to apply to these important issues the principles taught by the authors.

I must, however, emphasize, from a purely personal viewpoint, the last, short chapter of *Fog Nozzles*. This is my favorite. I am among the few remaining "fire folk" that had the pleasure and instruction of working with both Bill Nelson and Keith Royer, developers of the Iowa Rate-of-Flow formula. I have the scars of trying to explain, demonstrate and teach application of their principles and formula. Now, I have the satisfaction of saying "Ha, told you so" and the documentation is in Chapter 9. In these 7 brief pages, Bertrand and Wiseman offer us proof that the Rate-of-Flow formula is accurate and applicable to oxygen limited, structural fires. They write of two separate, independent research approaches, separated by 36 years and half a world, each yielding the same results! They cross reference and demonstrate the similarity of the Royer/Nelson work in the U. S. and the Grimwood formula from Europe. There the SAME thing! Most satisfying.

Folks, you can keep using your straight bore nozzles if you want. Burn yourselves because you've incorrectly applied water or provided inadequate water protection or inadvisable interior attacks. Keep on applying way too much water, requiring excessive water supplies, buying more and bigger pumpers than you can ever utilize. Don't bother making your building and sprinkler ordinances make sense from a fire fighting viewpoint. Ok by me. Or, go out and read *The Safe and Effective Use of Fog Nozzles*. Learn how, practice how, and preach how to fight fires the best you can!