

## READING SMOKE IS ONE THING - BREATHING IT IS COMPLETELY DIFFERENT

BY ROB SCHNEPP

REVOLUTION: a drastic and far-reaching change in thinking and behavior.

Americans are, by and large, assaulted with a steady stream of so-called "revolutions." There's been no shortage of fitness and dietary revolutions over the years, each one offering unbelievable results with a money back guarantee. The ongoing technology revolution has promised increased productivity and more free time, while the computerized banking industry has almost rendered cash obsolete. And while each of these examples has had an impact on daily life, they appear to be more evolutionary than revolutionary. It's gotten to the point where "revolution" has become synonymous with benign terms like change, development, or progress. Unfortunately, such common usage of the term has watered down its meaning.

In reality, true revolutions are anything but benign.

Revolutions are fueled by a new way of thinking, risk taking, and the courage to do things completely differently. Something the American fire service is not entirely comfortable with. This is not to say that the fire service is backward or unable to embrace new ideas. It is however, accurately characterized as 200 years of tradition unimpeded by progress. Why all the talk of revolution? Because the fire service is on the eve of one. A far-reaching and possibly tumultuous revolution that will challenge everything we thought we knew about smoke - the constant companion of the firefighter.

Research conducted over the years has proven that smoke is bad - we all know that. We all know that smoke kills more people than flames and that breathing smoke isn't good. So why do we still go to fires and not wear our SCBA? And I'm not talking about wearing the tank with the mask dangling around your neck. After the fire is knocked down, why is it that firefighters drop their SCBA and perform overhaul in the smoldering debris, breathing all those products of incomplete combustions? Why do we put so much effort into rapid intervention teams, when the current method of medically treating someone after the rescue is largely

ineffective? We've figured out a better way to rescue our own, but have not completed the loop by providing an effective antidote to correct a potential cause of death in smoke inhalation victims - cyanide poisoning. Typically, when someone dies in a fire, it's attributed to the nebulous cause of "smoke inhalation." In truth, it's more complicated than that - we just haven't been looking at it the right way. We haven't really digested the combustion chemistry to truly understand why the smoke is so nasty. Understanding the basics of combustion chemistry is the first step toward gaining a new respect for an old foe. It's fitting that this smoke revolution finds its roots in a busy fire department like Providence, Rhode Island - a key player in the American Revolution. In this supplement, Chief of Department David Costa provides a detailed description of a series of fire incidents that are emerging as a shot heard 'round the world for the fire service. He describes an investigation that reached an unexpected conclusion: a large number of his firefighters were exposed to cyanide - from the smoke - after fighting a series of structure fires. These firefighters were operating at the same kind of fires occurring every day in each and every part of this country - the typical residential structure fire. I encourage you to read about Chief Costa's journey. A journey that every Fire Chief hopes to avoid - one that ends with a visit to a firefighter's spouse, telling them that their loved one has been injured on the job. I hope you'll take the time to read the articles following Chief Costa's foreword. You'll learn about combustion chemistry, better ways to manage your air while fighting fire, the signs and symptoms of smoke inhalation, and why current methods of treating smoke inhalation victims may be futile. The last piece, written by Dr. Jean-Luc Fortin, offers a look inside a successful resuscitation of a firefighter in Paris, France. The firefighter, overcome by smoke after getting lost inside a structure fire, is alive and well today because of aggressive pre-hospital care and an antidote for cyanide poisoning. The bottom line is this - the fire service needs to become better educated about smoke. Hopefully, an increased level of knowledge will reinforce the importance of respiratory protection on the fireground, and the need to properly

manage your air supply. It's better to avoid getting into trouble than relying on a rapid intervention team to come in and find you! Unfortunately, a low air emergency does not come with a "money back" guarantee.

Smoke has become such a constant companion for us that we may have lost respect for it. According to Chief Costa, his department was shocked by the cyanide exposures. "We haven't come up with a firm grasp of what will be different," he says. "It's too early to tell. There is, however, a lot of lively discussion going on around the firehouse coffee table."

And that's what we need to better appreciate the immediate and long terms effects of breathing smoke - a lively discussion. We also need a drastic modification of our attitude toward smoke. Most of all, it's important to keep an open mind about the research and data presented here. You might discover some solutions on the following pages, but more than anything, I hope it raises some questions.

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