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LEADERSHIP IN THE FIELD OF FIRE PROTECTION

By Richard Schulte

"*It is a fundamental requirement of leadership to be able to say no.*" John Fricke

There seems to be something wrong-not sure that I can put my finger on it, but the times seem a bit out of kilter as it relates to my profession these days. Perhaps it's just that the "balance of power" in the profession has changed, but something seems definitely wrong.

When you look at the fire safety statistics, there is little doubt that America has never been more fire safe. The statistics show that the number of structure fires and the number of fire fatalities continue to dwindle with each passing year even though the population of the United States continues to grow.

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NFPA statistics tell us that the average number of Americans who die annually as a result of fires in office buildings is one. Yes, that's correct-one. These statistics also tell us that our schools are even more safe from fire than office buildings. Typically, the number of American children who die as a result of fire in educational occupancies is zero on an annual basis.

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While a little more than 80 percent of fire fatalities which occur in America annually occur in residential occupancies, few fire fatalities occur in residential occupancies protected by a sprinkler system. In other words, we have the know-how to prevent fire fatalities in residential occupancies, but we need to implement this knowledge.

In the 1960's and before, the installation of sprinkler systems in office buildings, schools, hospitals, nursing homes, hotels, restaurants and other places of assembly was rare. Back then, the installation of sprinkler systems was mainly limited to large retail, industrial and storage buildings. A revolution in fire protection occurred sometime during the 1960's when it was realized that sprinkler protection could not only be used for property protection, but could also be utilized to protect the occupants of a building and fire fighters.

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The problem with sprinkler protection in the late 1960's and early 1970's was cost. While the cost of sprinkler protection in large retail, industrial and storage buildings was offset by fire insurance credits, the fire insurance credits for installing sprinkler protection in buildings classified as light hazard (per NFPA 13), office buildings, schools, hospitals, nursing homes, etc.) were minimal. In order to encourage the installation of sprinkler protection in buildings where insurance credits were minimal, the concept of reductions in passive fire protection requirements when sprinkler protection was provided was conceived. This reduction in passive fire protection is commonly referred to as “sprinkler trade-offs”.

The “sprinkler trade-offs” that have been developed work. There is little doubt about that. For instance, since the early 1970's when we first began to provide sprinkler protection in high rise buildings in the United States, a major fire has never occurred in a sprinklered high rise building (except on September 11th). When you think about it, that’s a pretty amazing statistic.

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In the 1970's, the fire service actively supported “sprinkler trade-offs”. That support has seemed to have faded in the last decade or so. Why? That’s something that’s difficult to understand. Sprinkler protection is more effective than ever. We know from our experience from providing sprinkler protection in single-family dwellings that sprinklers can protect both the young and the old even while they are asleep. We also know from our experience from providing sprinkler protection in single-family dwellings that sprinklers provide reliable protection even in an occupancy where the systems are unlikely to receive as much maintenance as in a commercial occupancy.

In the last decade, the passive fire protection industry has mounted a savage attack on the reliability of sprinkler systems. It wasn't all that long ago when consultants representing the passive fire protection industry told us that sprinkler systems failed in 1 in 6 fires large enough to activate sprinklers. That statistic came to us courtesy of William Koffel, Koffel Associates, Inc., a long-time member of the NFPA 13 committee and former president of the Society of Fire Protection Engineers (SFPE). It turns out that that statistic was developed using "bad data", but damage to the reputation of the reliability of sprinkler systems was done.

Many in the fire service actually believed the sprinkler failure statistic despite the fact that their experience told them that sprinkler system failures were rare indeed. How the fire service was taken in by the ruse put forth by the passive fire protection industry seems to be beyond comprehension. I guess if you repeat false statistics over and over and over again, people will begin to believe the statistics even though their own experience indicates otherwise.

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The attack on the reliability of sprinkler systems was combined with the emergence of a concept referred to as "balanced fire protection". The proponents of "balanced fire protection", once again consultants retained by the passive fire protection industry, told us that building safety in the International Building Code relied to heavily on sprinkler protection-that there were too many "sprinkler trade-offs". It seems that the fire service forgot about their battles in the 1970's and the 1980's to get sprinkler protection into buildings and their use of "sprinkler trade-offs" to accomplish this mission.

In a way, the fire service seems to be using "bait and switch" tactics. First, support "sprinkler trade-offs" as a means of gaining the public's acceptance of sprinkler protection and then "pull the rug out from under" "sprinkler trade-offs" and support the repeal of the "trade-offs". If the statistics indicated that we were going backward as far as our progress against fire, it would seem that this might be a reasonable approach, but with sprinkler "trade-offs" in place for more than 30 years, each year we make a little more progress.

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At present, the number of Americans who die annually in fires in non-residential buildings varies between 100 and 200 with the number being closer to 100 in recent years. Yes, big fires still occur occasionally, such as the fire at The Station night club in Rhode Island, but the number of Americans who die in fires in non-residential buildings provided with a sprinkler system is near zero year after year. (Sprinkler protection was not provided in The Station night club.)

Given the statistics and the major progress that we've made against fire since the early 1970's, there seems to be little need for more restrictive fire safety provisions in our building codes. Yet, each code change cycle proposals for more restrictive requirements are introduced. Why? For what purpose?

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What we need are not more restrictive building code requirements, but more "sprinkler trade-offs" to encourage the installation of even more sprinkler protection. What we also need is more involvement by the fire service in making sure that fire safety features which were included in buildings when the buildings were constructed are being maintained. Yes, that means we need more emphasis on building fire prevention inspections.

Even though sprinkler protection is reliable, the reliability statistics can still be improved. How do we do that? Building fire prevention inspections. NFPA statistics on sprinkler system failures indicate that around 60 percent of sprinkler system failures are due to closed water supply control valves. Inspecting sprinkler systems to verify water supply control valves are open is something every fire fighter can be taught how to do and should be doing.

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Rather than just throwing money at the fire problem in the United States by adopting more and more restrictive fire safety requirements, what we really should be doing is enforcing the fire safety requirements already contained in our building and fire codes.

Sprinkler system failures are not only failures of the main fire protection and fire safety system provided for buildings, but are also a failure of the building fire prevention inspections. Any sprinkler system failure should be considered to be unacceptable to the fire service. There is no reason why the reliability rate of sprinkler systems shouldn't be close to 100 percent.

With respect to the quote with which this article opened, it time for fire protection professionals to say “no” to more and more building fire protection requirements. The level of fire protection which we have in our codes presently is more than adequate. Simply piling on requirement after requirement on building owners doesn’t make sense based upon the statistics. Of course, we know that non-residential building owners don’t pay for building fire protection-they simply pass it on to their customers.

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No one likes to pay for things that are unnecessary and, given our financial problems, we simply can’t afford more and more restrictive code requirements.

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