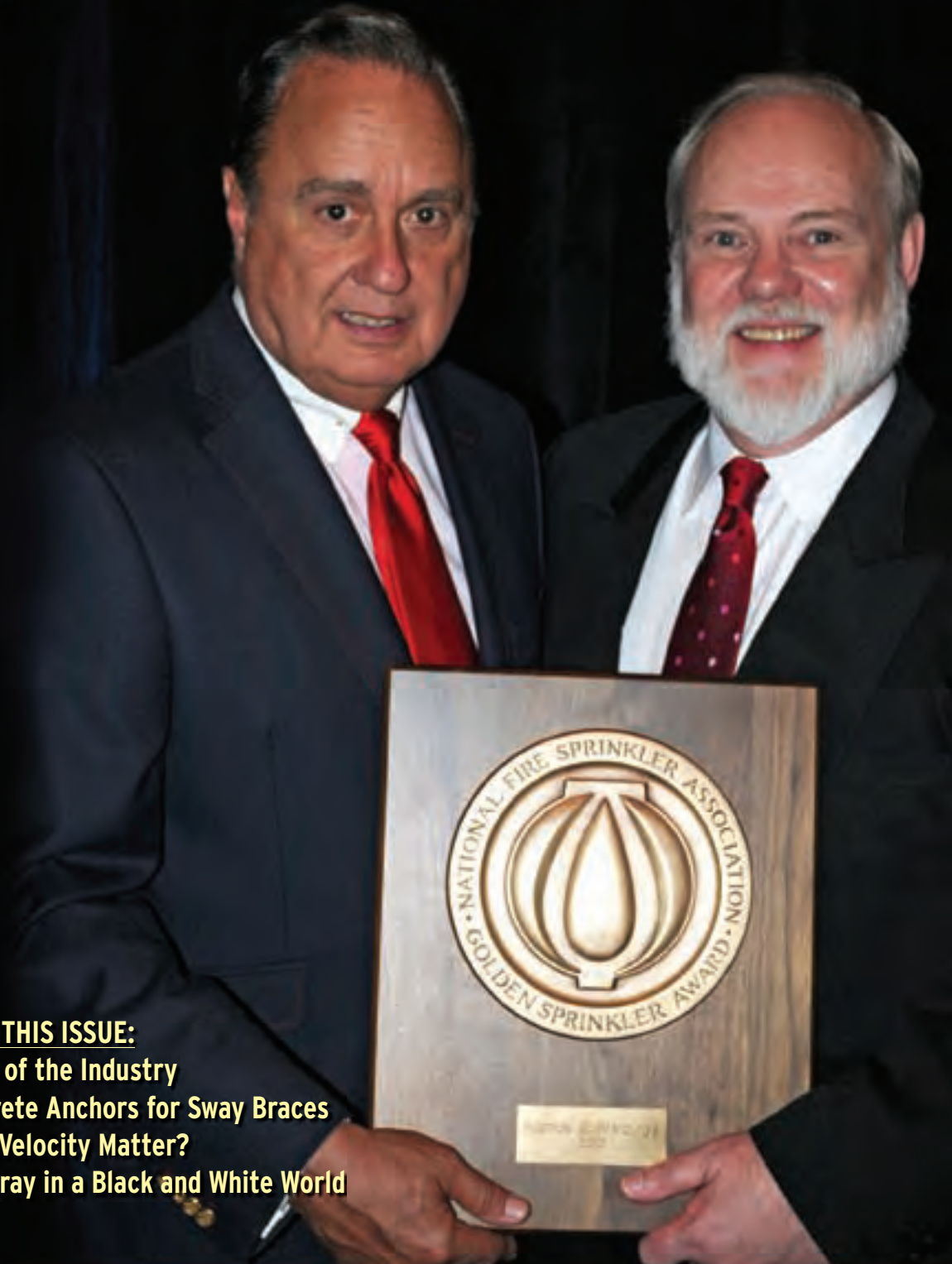




SEPT/OCT 2010 / No. 162

Journal of the  
National Fire Sprinkler  
Association

# SQ



## INSIDE THIS ISSUE:

- State of the Industry
- Concrete Anchors for Sway Braces
- Does Velocity Matter?
- The Gray in a Black and White World



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September - October 2010 • no. 162

ON THE COVER:

This year's Golden Sprinkler Award recipient, Aus Marburger, is pictured with NFSA President John Viniello. Aus was presented the award during NFSA's Annual Seminar opening ceremony held in Chicago April 15 - 16.



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# 2010 State of the Industry Address

*Editor's note: This is an edited version of NFSA President John Viniello's State of the Industry Address given at the 2010 NFSA Annual Seminar at the Chicago Fairmont on April 15, 2010.*



## John Viniello

**B**efore I begin my formal remarks, let me take this opportunity to thank each and everyone one of you for attending this year's conference during what can only be described as an extraordinarily difficult and challenging business environment. Hopefully things will show some improvement in the coming months.

Let me also congratulate those recipients of the technical and public service awards- Chief Ronny Coleman and Don Pamplin, both of whom I have known throughout my career, and please remember Jerry Pepi in your prayers. I worked with Jerry very closely in the early 80s and I can tell you he was really looking forward to attending this conference and renewing old acquaintances. He will be missed. Let me also acknowledge the work of a man who will be retiring in July. After 17 years of outstanding service as a Regional Manager in the Midwest, Dan Gengler, our Associate Director of Regional Operations, has decided to "hang up his spikes" Dan, thanks for all your hard work and your contributions to our industry. You will be missed.

We learned just last week that Common Voices, which is now officially a 501c (3) not-for-profit entity with its own tax ID number, has received a federal grant in the amount of over \$222,000. The Common Voices families, all of whom have suffered mightily from the loss of loved ones in fires, have bonded together to collectively testify to the features and benefits of the product that you install, manufacture and supply- the fire sprinkler. The vision of forming this organization came from three board members and their wives; Aus and Laurie Marburger, Gregg and Clairese Huennekens and Wayne and Sharon Gey. I must say that their message is a powerful one that saves lives. And of course a big vote of thanks to our own Vickie Pritchett, NFSA Associate Director of Public Fire Protection, for "putting all the pieces in place" applying for the federal grant and making things happen.

Let's also welcome John Galt, who is serving his 20th year as president of the Canadian Automatic Sprinkler Association

(CASA). Beginning in 2013, CASA will be joining NFSA at our conference and biennial exhibition. John will be arriving later today. Last, but certainly by no means least, let's acknowledge Aus Marburger for receiving The Golden Sprinkler Award, and his wife Laurie. If anyone emulates the spirit of that award it's Aus.

And now for this year's state of the industry address. We will focus on a number of areas to get everyone "up to speed" on the very latest on what are becoming some fast-breaking developments for a number of projects and programs your association is working on. But before I get to that, as someone once said, "It's never about money until it's about money."

In the last 18 months each and every company represented here and indeed throughout our industry, has made significant cuts to their business operations. NFSA isn't any different. Having said that, let me take a moment to describe what your association has done to reduce costs. But, also remembering that the time we are needed the most is during an economic downturn.

During 2009 we eliminated the position of Director of Membership and rolled those responsibilities into our Communications Department headed by David Vandeyar. Our Regional Manager from the South Central states retired and was not replaced. My assistant, Moira Ravel, passed away and was not replaced. The assistant to the Labor Department retired and we consolidated our database and training assistants' positions by moving Dawn Fitzmaurice to the Labor Department, for a total savings to NFSA and IP budgets of \$450,000, on an annualized basis. NFSA publications; GrassRoots, Regional Reports and LaborLine have all gone digital for a combined printing and postage savings of \$25,000.

All salaries have been frozen for 2010. As I reported at the Board of Directors meeting this morning, NFSA budgeted a loss of over 1.3 million dollars for 2009. Yet, by implementing these

>> CONTINUED ON PAGE 5

## calendar

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 NICOLE SPRAGUE

**BOOKKEEPING:**

LINDA DALY  
 THERESA SCALONE

Sept 1	Rochester Hills, MI	Plan Review Policies & Procedures
Sept 2	Rochester Hills, MI	Commissioning & Acceptance Testing (1/2 day)
Sept 2	Rochester Hills, MI	Introduction to Sprinklers (1/2 day)
Sept 8	Seattle, WA	Sprinklers for Dwellings
Sept 9	Seattle, WA	Plan Review Policies & Procedures
Sept 10	Seattle, WA	Commissioning & Acceptance Testing (1/2 day)
Sept 10	Seattle, WA	CPVC Piping (1/2 day)
Sept 14	Dayton, OH	Plan Review Policies & Procedures
Sept 15	Dayton, OH	Inspection, Testing & Maintenance
Sept 16	Dayton, OH	Basic Seismic Protection (1/2 day a.m.)
Sept 16	Dayton, OH	Standpipe Systems (1/2 day p.m.)
Sept 16	Concord, NH	Sprinkler Protection for General Storage
Sept 17	Concord, NH	Sprinkler Protection for Rack Storage
Sept 18	Concord, NH	Plan Review Policies & Procedures
Sept 21-22	Brea, CA	Two-day NFPA 13 Overview
Sept 23	Brea, CA	Plan Review Policies & Procedures
Sept 28-30	New Castle, DE	Inspection & Testing for the Sprinkler Industry*
Oct 13	Hillsboro, OR	Plan Review Policies & Procedures
Oct 14	Hillsboro, OR	CPVC Piping (1/2 day)
Oct 14	Hillsboro, OR	Commissioning & Acceptance Testing (1/2 day)
Oct 15	Hillsboro, OR	Inspection, Testing & Maintenance
Oct 19	Woodland, CA	NFPA 13, 13R & 13D Update 2007/2010
Oct 20	Woodland, CA	Sprinklers for Dwellings
Oct 21	Woodland, CA	Residential Sprinklers: Homes to High-Rise
Oct 25	Fairbanks, AK	Plan Review Policies & Procedures
Oct 26	Fairbanks, AK	Hydraulics for Fire Protection
Oct 27	Fairbanks, AK	Sprinklers for Dwellings
Oct 28	Fairbanks, AK	Inspection, Testing & Maintenance
Oct 29	Fairbanks, AK	Commissioning & Acceptance Testing (1/2 day)

These seminars qualify for continuing education as required by NICET. Meets mandatory Continuing Education Requirements for Businesses and Authorities Having Jurisdiction.

To register or for more information, contact: Michael Repko at (845) 878-4207, E-Mail: [seminars@nfsa.org](mailto:seminars@nfsa.org). Or register online at [www.nfsa.org](http://www.nfsa.org).

\*For more information, contact Nicole Sprague using [Sprague@nfsa.org](mailto:Sprague@nfsa.org) or by calling 845-878-4200 ext. 149.



**NFSA Annual Seminar**  
**Hilton Los Cabos Resort**  
 Los Cabos, Mexico  
 May 3-5, 2012

**UPCOMING SEMINARS**

**NFSA Annual Seminar**  
**& Exhibition**  
**The Baltimore Hilton**  
 Baltimore, Maryland  
 April 7-9, 2011

**NFSA Annual Seminar**  
**& Exhibition**  
 Las Vegas, Nevada  
 2013



&gt;&gt; CONTINUED FROM PAGE 3

cuts, delaying the hiring of new employees as part of what we called "Fire Sprinklers Reigning Down" and excellent managing of budgets by all department heads, NFSA showed a surplus to the bottom line on December 31, 2009 of more than \$400,000. Our reserves are approaching 2.5 million dollars and our mortgage of approximately \$600,000 for land and building is at an interest rate of 100 base points below prime. The rent roll from our tenant, who leases 12,000 square feet, easily pays for the debt service on the mortgage. As such, we are in a very solid financial position.

### **IRC UPDATE**

Our Regional Managers, headed by Vice President of Regional Operations Buddy Dewar, are constantly monitoring where the provisions for the IRC model code requirement are being adopted at the state and municipal level. Go to the NFSA website and click on the IRC Update link to see the latest news. While we continue to receive opposition from the local home builder chapters, we are delighted to report that after a meeting in Washington, D.C. on March 3 with the President of the National Home Builders' Association (NAHB), Jerry Howard and his executive staff, a recommendation was made to their key chapter chairmen that meetings begin between them and the code and technical staff of NFSA to seek areas of common interest. This is a major breakthrough and was initiated by NFSA following a recommendation I made to NFSA's Residential Committee. It's easy to disagree, but productive discussions can lead to real progress. Look for updates on our website.

### **FIRE SPRINKLER INCENTIVE ACT**

Federal legislation that would amend the 1986 Internal Revenue code to a more realistic depreciation schedule for fire sprinkler installations will be attached to a "jobs bill" later during this Congressional Session. Key sponsors in both the House and Senate are very optimistic that this will get done in 2010 and be signed into law. Stay tuned.

### **ADFSC**

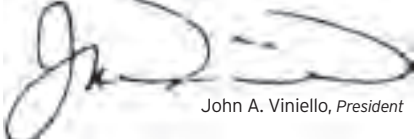
As reported last year we are about to launch the Accredited Dwelling Fire Sprinkler Contractor (ADFSC) Program. The Center for Public Service Excellence, an adjunct to the International Association of Fire Chiefs, which presently accredits fire departments, has our business plan and is crafting it to fit their own business model for implementation. The program, which I have characterized as the sprinkler industry's "good housekeeping seal of approval" features a 40-hour class and test before accreditation can be achieved. We are approaching several insurance carriers to seek homeowner's insurance reductions in excess of 20% for home fire sprinklers systems installed by ADFSC contractors. This program is about preserving the outstanding record that fire sprinklers have enjoyed for more than 100 years - never having had a multiple death from fire in a building that was protected by a properly installed and maintained system. This is a record that stands without parallel for any life safety device on this planet and one that all of us should be justifiably proud.

We want to be absolutely certain that contracting companies installing these systems are qualified to do so. As we have said before, if a plumbing system fails, someone is inconvenienced, if a fire sprinkler system fails, someone may be injured or killed. The choice is an easy one. It's simply the right thing to do to protect the homeowner. This program is a comprehensive training initiative that covers all aspects of installing fire sprinklers from the layout of the system, the actual installation and the aftermarket. This cannot possibly be done in a one- or two-day program, which in my view is a recipe for disaster. The ADFSC seal of approval will give the builder and/or the homeowner the confidence to know that these life safety devices, when properly installed and maintained, will work when called upon to do so. It's an idea whose time has come.

### **THE SPRINKLER ECONOMY**

What can I say that hasn't already been said? This, without question, is the worst recessionary cycle in the history our industry. I've been through four of them and hands down this is truly an "economic perfect storm." The general economy is showing signs of recovery, but when will that translate into business for our industry? On the down side we have two things working against us, excess inventory for both residential and non-residential buildings and a lack of credit availability. That does not bode well for a v-shaped recovery. What, if any, are the upsides? All businesses have made reductions in their workforce, resulting in high unemployment, and other dramatic cost cutting measures. This has certainly improved balance sheets, which should lead to very strong corporate earnings. But remember, it's not revenue driven. While traditionally the consumer has led us out of previous recessions, this time around I believe that business investment, both domestic and foreign, will lead the way. Consumer spending is showing an uptick. The rate of growth of 3% is not high enough to improve high unemployment, so look a very sluggish growth for the balance of this year.

You know, the business that we have chosen is a noble one. Each and every person in this room, either directly or indirectly, has saved the life of someone they never met; a mother, a father a child or someone loved by another. I think that is something for which we should all be justifiably proud. In closing, let me leave you with this thought, it's a poem that the legendary football coach from the University of Alabama Paul "Bear" Bryant kept in his wallet as a life lesson. To me it has meaning, as it should to each and every one of you. It epitomizes the very essence of the business we have chosen - to protect lives and property from the ravages of unfriendly fire. It goes like this: "This is the beginning of a new day. God has given me this day to use as I will. I can waste it or use it for good. What I do today is very important because I am exchanging a day of my life for it. I want it to be a gain, not loss, good not evil, success not failure. In order that I shall not forget the price I paid for it." Thank you ladies and gentlemen, it's always a pleasure. 🙏



John A. Viniello, President

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Tennessee	Tennessee		
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# As if for the first time

Gregg Huennekens



**K**nowing that this issue of **SQ** would feature a pictorial summary of the Annual Seminar held back in the middle of April in my hometown of Chicago started me reflecting on the event. Being from Chicago, like anyone else who may live in or around a large city, I have found that even the most significant accomplishments of man's influence on his environment can, as time passes, begin to go unnoticed. Probably having something to do with over familiarity, we begin to take things for granted, things that the casual observer may consider quite spectacular - not being able to see the forest for the trees, one might say.

I was reminded of this, call it, desensitization, while standing just outside of the Fairmont where NFSA hosted the Annual Seminar. Now, being a longtime resident of Chicago, over the years I have become familiar with all its local charms and attractions, even the building some folks I overheard were talking about. It was obvious from their conversation they were from out of town. Funny thing, though, as I looked up with them as they marveled over the uniqueness of this building's architecture, it made me feel as though I was witnessing it again for the first time. Who would have thought that something I had seen a hundred times before, in that moment, could make me feel so, well, rejuvenated. Up to that point I was only thinking about how beautiful the day was. What an enjoyable, unexpected experience. The building? Aqua!

For those who are unfamiliar, as the Sears Tower became a modern-day landmark in the city of Chicago, at one time being the tallest building in the world, so now has Aqua. Its wave-like structure standing some 80 stories in the city-center affords its occupants with commanding views of Lake Michigan and can be seen from miles around. For those on the ground looking up, one almost sees an unsupported vertical column of water, as if that

were even possible. It's one of the most unique looking buildings you'll ever see.

Though subtle, there's a correlation here - one between NFSA and the work it does to promote the fire sprinkler industry and all the Aquas of the world; one of seeing something as if for the first time through someone else's eyes. Here's a case in point.

Each year at the Annual Seminar we are privileged to have in attendance members who are with us for the very first time; newcomers. They may be there to share in the experience of a colleague receiving an award; to join with their peers for a few days of training and networking, or perhaps, they may be new members wanting to simply see just what the association that represents their industry is all about. Whatever their reasons, we are always glad they decided to join us. For me, it is through the comments I hear from them that remind me, like overhearing the strangers on the street talking about Aqua, to every once in awhile, take a step backwards, if only for a moment, and take a look again at the fine group of people we have working for all of us at NFSA. Experts that are sought out and respected for their opinions, Regional Managers that work tirelessly in support of the membership in their areas, department heads who pride themselves on maintaining their respective departments with the utmost professionalism and office personnel that go out of their way to meet members' needs. These people are doing their jobs because they love their jobs and truly believe in the cause for which they work. In today's world, that is a very rare quality indeed. Also, let's not forget the services NFSA provides that have become commonplace, especially to those of us who are longtime members - services we may have begun to take for granted. When we do, we come to realize, as if for the first time, just how special those services - and the people that provide them - really are. 🙏

A handwritten signature in black ink, appearing to read "G. Huennekens".

Gregg Huennekens, *Chairman*

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## New York Prompt Payment Act

*Editor's Note: Stuart Zisholtz comments on New York State Law.*

In 2002, New York State enacted the Prompt Payment Act for construction work on private projects. The purpose of the Act was to provide contractors with certain rights in order to recover monies owed for work performed and materials furnished.

Unfortunately, as I wrote in the past, the Act was unsuccessful because there were numerous loopholes available to owners and no weapons available for the contractor.

Recently, the New York Legislature amended the Act. Now, the new amended Act establishes the maximum time period of 30 days in which an owner may make payment on an interim or final invoice which cannot be changed by contract.

Moreover, the new Act prohibits contrac-


tors and subcontractors from withholding anticipated liquidated damages from subcontractors, tradesmen or material men.

Finally, the Act provides for a binding, expedited arbitration proceeding in the event an owner and/or contractor fails to make payment of an invoice within the required time period. The contractor and/or subcontractor may resort to an expedited binding arbitration to resolve the late payment dispute.

As always, in order to establish a claim and support your position, you must maintain proper documentation and records. Without the documentation or records, your claim could be jeopardized.

**Remember, never let your lien time run out!**

*For a free copy of a pamphlet pertaining to payment bond claims and mechanic's liens, please contact Stuart Zisholtz at Zisholtz & Zisholtz, LLP, 170 Old Country Rd. Suite 300, Mineola, NY 11501 tel: 516.741.2200 fax: 516.746.1024. ☎*



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By Don Pamplin

I saw a sign that said

## “The First Victim When a Tragedy Happens is the Truth”

**T**he author of this quote is anonymous, but it is believed to have originated from a quote by Hiram W. Johnson, a staunch Republican isolationist from California who served in the U.S. Senate for nearly 30 years. His quote was: “The first casualty when war comes is the truth.” Ironically, on the day of his death in 1945, the U.S. dropped its first atomic bomb on Hiroshima.

I saw this sign many years ago at a Mothers Against Drunk Drivers Rally. The speaker was strongly making her point that, unfortunately, many tragedies happen because people just don't pay attention to what recognized experts are saying about various habits. She told of what happens when people ignore the well-documented and proven safety truths of those given situations.

Yes, we all know how irresponsible it is to drink and drive. And we all know how innocent people get killed or seriously injured for life because of that stupidity. Yet it happens over and over again and it's almost as if there is an invisible shield that keeps common-sense truths from penetrating the logic section in our brains.

It's not quite the same in the fire safety world. People don't purposely flaunt fire safety rules the way drinkers do when they drive a car while impaired. But, they do get penalized when people in authority don't tell them the truth about community fire safety.

Fire departments around the world spend enormous amounts of time and

money telling people the truth about the dangers of uncontrolled fire, especially in a residential setting. Yet, many times those truths are ignored and people keep doing the same dangerous things over and over again. They don't fully realize what dangers they and their families constantly face on a daily basis. A recently completed Oregon Fire Fatality Committee Study has just been released by the Oregon State Fire Marshal's Office which analyzed civilian fire deaths in Oregon from 2004-2008. During that five-year period, there were 26,773 reported residential fires in which 120 of those resulted in 138 fatalities. Some key findings of the study are:

- 51% of the fire fatalities occurred in one- or two-family housing, 31% occurred in mobile homes or trailers used as residences and 17% occurred in apartments or other multi-family housing;
- The top four causes of fatal fires are smoking materials, candles, electrical and combustibles too close to a heat source;
- 68% of the victims were age 50 or older;
- 32% of the fatalities occurred where there was no smoke alarms;
- An additional 17% of the fatalities occurred where there was a smoke alarm but it did not operate.

These Oregon statistics probably are fairly representative of many states across our nation. The irony of these statistics is that Oregon is a “mini-max”

state where many politicians and building officials oppose residential fire sprinklers!

On Saturday, June 10, 2010, one of the deadliest fires in the past four decades occurred in a Seattle three-bedroom, two-story apartment on NW 41st Street which is owned by the Seattle Housing Authority. The fire is suspected of having started when a mattress stored in a closet on the first floor was in contact with a turned-on light bulb (a heat source).

After a period of smoldering, the mattress burst into flame, igniting other adjacent areas of the apartment and then fully engulfing the entire residence. One adult and four children died in that inferno. The ages of the victims were 22, 13, 7, 6 and 5. The fire spread so fast, they were unable to safely exit the apartment. Initial investigative reports indicated that the smoke alarm did activate. This is not an isolated occurrence of hearing a smoke alarm and not making it out of a building that's on fire. It happens hundreds and hundreds of times each year in America. Hearing a smoke alarm does not guarantee that you will get out alive!

>> CONTINUED ON PAGE 10



NFSA's Regional Manager for the Pacific Northwest

Don Pamplin



There were no fire sprinklers in these housing units. The first arriving fire truck was not the one that should have responded because that truck was busy at another call and a secondary unit that was further away had to be dispatched. When this secondary unit arrived, it was unable to pump water on the fire. That alleged fireground deficiency is now under investigation.

When that secondary fire truck did arrive approximately 5 minutes after Seattle Fire Dispatch received first notification of the fire, reports stated that the apartment was billowing black smoke and flames which would indicate that the fire had passed the point of "flashover". When that happens, occupants in a fire structure are at great risk. They don't usually survive a fire that has reached that intensity level of interior heat, which can quickly exceed 1100 degrees Fahrenheit.

Fire intervention statistics across our nation have clearly shown that "flashover" is a deadly killer. Even the best fire departments in our nation have great difficulty saving trapped victims in structures where fire is out of control with that level of heat generation. That is why residential fire sprinklers are so vital in helping the American Fire Service protect citizens in their communities. They extinguish or control a fire so that "flashover" does not occur before the fire department arrives. Fire sprinkler intervention provides a greater chance of safe evacuation of the occupants from that structure fire.

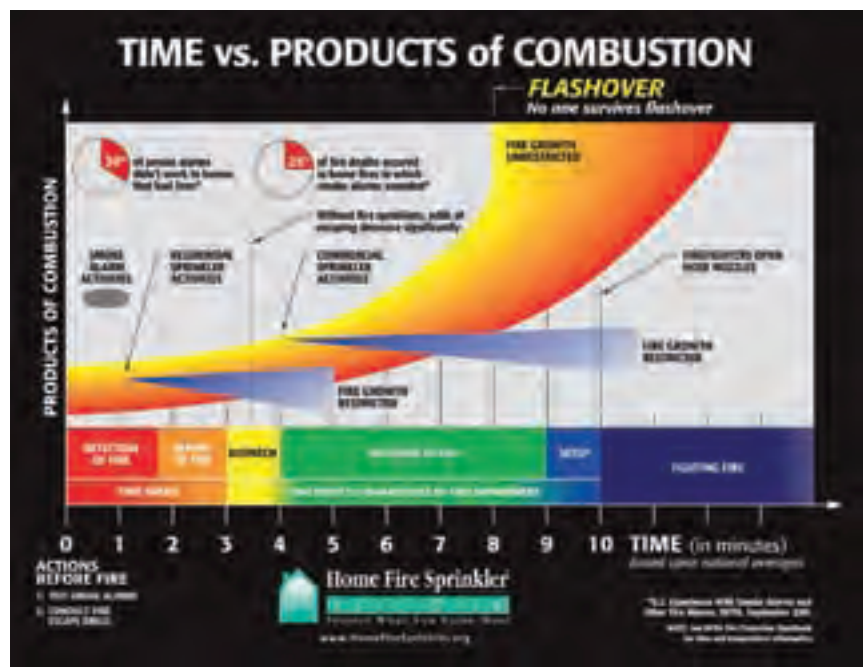
Look at the "Time vs. Products of Combustion" graph below. If fire sprinklers are not present, then fire can quickly grow (see the horizontal minutes) exponentially to the point of "flashover". This usually happens before the fire department arrives and is able to apply an extinguishing agent (water) to the fire. Attacking a fire after "flashover" usually means that the fire department is not able to make an interior "offensive" attack on the fire in the area or room of fire origin. That means "defensive" fire tactics are employed. Those less effective procedures intensify the overall risk of victims being trapped in the fire structure.

Look at the linear elapsed time. This is commonly known as the "Total Invention Time" (TIT) of a responding fire department. I like the "set-up" time. You would have to have a fire department where everyone is a Gold Medal Olympian in order to achieve that one minute segment. I had a "Class One" fire department and we couldn't do it, even when we were four blocks from the fire and we still had fire fatalities that we couldn't prevent.

Is that the fire department's fault? No it isn't. The problem lies in the first four minutes of the fire. It has a head start on its way to "flashover" if there is no fire sprinkler intervention. Look at the acti-

sad to have to ask; "Why aren't these vulnerable residents protected by residential sprinklers?" The answer that is usually given is; "They weren't required in the code at the time of construction."

And that brings us to where we are in America today. The American Fire Service has been trying to get residential fire sprinklers in building and fire codes for years. Now, on the verge of accomplishing that almost nationwide, they are being defeated by "killer legislation" that has been introduced by politicians all across America, having the effect of prohibiting the use of residential sprinklers at the state or local government level.



vation time of the residential fire sprinkler. On average, it starts fighting the fire before the fire gets reported to fire dispatch. This is why Fire Chiefs across America are really pushing for residential fire sprinkler protection. It's not only for the safety of their citizens, it's also for the safety of their firefighters, who quite often get caught in these raging infernos that can cause "lightweight structural" collapse within minutes of flashover. Firefighter deaths from these collapses are becoming more common each year, especially in high density areas of homes using manufactured wood products.

When a horrible Seattle-type tragedy happens anywhere in America, whether it's one victim or five, it's so very, very

This is where "the truth" becomes the first victim and those politicians become "donation pawns" of building and real estate corporate interests. Every politician who introduces and/or supports such legislation or prohibitive policies should have their names permanently carved on a state or national "Wall Of Shame" so that those communities will know what a terrible thing those politicians have done and that they can be held accountable for it, especially at the ballot box!

Don't listen to the lies that some homebuilders and real estate profit-hawks continue to tell! Listen to the truth that your local Fire Service is saying and don't let that truth be the first victim in a tragedy that may happen to you or your family! 📞

# Protecting Airport Terminals

By Bob Treiber

As I travel across the United States, I'm shocked at the number of airport terminals that lack fire sprinklers. Many of which have large shopping areas containing significant fire loading. Many terminals have become small shopping centers and some of the newer ones are really small malls, again, with significant fire loading.

How do you protect an air terminal structure? Many are small Ports of Authorities which are, in essence, a local or state government unit. Because of the safety and security issues many airports have restricted exiting. After 9-11 all the airports have tighten their security measures, which is good for security safety, but often creates restrictions for emergency egress and fire department access.

For those airport terminals that are regulated by the building codes, the use group categories would range from mercantile - (M- retail sales) to places of assemblies (A-3 - Passenger Stations - Waiting Areas). The sprinkler requirement generally for an A-3 or M Occupancy would normally be 12,000 square feet, or an occupancy threshold of 300 or more. Most of today's air terminals fall under these requirements. Many terminals are normally existing structures, but many have had extensive new additions that have been added. It would appear that many terminals have not been required to comply with the modern building codes when additions or major renovations have been done.

The National Fire Protection Association (NFPA) has a special Standard for air terminals; *NFPA 415 Standard on Airport Terminal Buildings, Fueling Ramp Drainage, and Loading Walkways*.



Even though many building codes do not reference NFPA 415, it provides great guidance in properly protecting airport terminals. NFPA 415, Section 4.5 covers the fire protection requirements and basically has a similar threshold as that required in the national building codes. It requires sprinkler protection when the air terminal exceeds 12,000 sq. ft. total floor area. The standard goes on to provide details on the design of the sprinkler density. Section 4.5.1.3 specifies that passenger-handling areas shall be classified as Ordinary Hazard Group 1 as specified in NFPA 13. Section 4.5.1.4 requires the baggage, package and mail handling areas to be classified as Ordinary Hazard Group 2 as defined in NFPA 13. Section 4.5.1.5 specifies that other areas shall be protected in accordance with

Chapter 5 of NFPA 13. This would require the retail sales areas to be protected as Ordinary Hazard Group 2. Areas such as passenger cross-over tunnels and offices would normally be protected as light hazard occupancies.

Glazing Materials/Covered Openings Facing Ramps shall comply with NFPA 415, Section 4.1.5.3. Where potential fuel spills

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Bob Treiber

Based in Centerville, Ohio, Bob is NFSA's Director of Training & Education.



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point are located less than 100 feet horizontally from glazing material-covered openings in airport terminal building walls facing the airport ramp, they shall be provided with an automatically activated water spray system in accordance with NFPA 15 Standard for Water Spray Fixed Systems for Fire Protection or an automatically activated (listed) fire shutter system in accordance with 4.1.5.3.2 (See Annex C). The water spray system shall be designed to provide a density of at least .025 gpm/ft<sup>2</sup> over the exterior surface area of the glazing material. Where multiple water spray systems are used, the water supply shall be capable of supplying all systems that could be expected to operate as a result of one fire incident. The detection system design analysis for the water spray system shall include consideration of false alarms and detector response time.

Section 4.5.3 requires fire hydrants to be provided on both the ramp and street sides of the airport terminal buildings. Such hydrants shall be located so that no portion of the terminal building is no more than 500 feet from a hydrant. Standpipe and hose systems shall be provided for all airport terminal buildings in excess of two stories in height or 100 feet in shortest horizontal distance. Class I standpipe systems shall be provided in buildings protected throughout by an approved fire sprinkler system.

The water supply from public or private sources shall be adequate to supply maximum calculated fire sprinkler demand plus a minimum of 500 gpm for hose streams. The supply shall be available for the rate specified for one-hour minimum.

Fire Protection needs at airports can be very difficult. When coupled with security needs, the minimum protection needed for most airports should call for sprinkler systems. The next time you walk through an airport look it over, and see how many areas are not sprinklered. Why anybody would do a major remodel and not include sprinklers in an airport structure seems very dangerous. It has been a while since we have had a major fire at an airport, but one only has to examine fire loss history to see that both the United States and Europe have experienced some major fire losses. Today's airport, coupled with the high fire loads and lack of fire sprinklers, is a disaster waiting to happen. To learn more about fire protection requirements, contact NFSA for all your educational needs.



Major remodel and still no sprinklers



Aiport retail shopping area - no sprinklers!







# Building a Winner

In large installations like the new, state-of-the-art professional sports stadium in Dallas, the need to protect thousands of fans and staff from fire is a monumental challenge.

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# Does Velocity Matter?

By Kenneth E. Isman, P.E.

**F**rom time to time, sprinkler contractors are asked (in specifications or by an Authority Having Jurisdiction) to limit the velocity of the water flowing through the pipe. Many of these requests limit the velocity of the water in the pipe to 30 ft/sec, although we have seen a number of different values used as a threshold over time in the industry. The question is, "Are these concerns valid?" Should we be limiting the velocity of the water in the pipe?

In order to answer this question, we need to examine the concerns of the individuals that are asking for the velocity to be limited. When asked to express their concerns on the issue, two different responses are generally repeated regarding a concern for excessive water velocity:

- 1) Concern over the wear and tear on the pipe and fittings when water flows inside them at a high velocity.
- 2) Concern that the Hazen-Williams formula does not accurately predict friction loss when the water flows through the pipe at a high velocity.

## Wear and Tear

The first concern is a legitimate concern for mechanical engineers designing plumbing and mechanical equipment. When water constantly flows through pipes, the engineer does need to be concerned about how long those pipes can take the wear and tear of the constant motion. But that concern does not translate to fire protection systems. Fire protection systems are

not constantly flowing water. Pipes in a fire protection system will rarely, if ever, experience flows anywhere near the demand that is calculated. When, in rare cases, this high velocity flow does exist, the pipe will only experience that flow for an extremely short duration, which will not affect the life of the pipe.

The concern over wear and tear of the pipe is not a legitimate concern for fire protection system design.

## Hazen-Williams

The second concern, about the accuracy of the Hazen-Williams formula, has been floating around the industry for many years. It has achieved Urban Myth status, with many people claiming that the Hazen-Williams formula does not accurately predict friction loss when the velocity exceeds 32 ft/sec, but nobody seems to be able to site a reference that clearly substantiates that there is a problem.

In an effort to put the discussion to rest a few years ago, Roland Huggins of the American Fire Sprinkler Association did some calculations and presented them to the NFPA Committee on Sprinkler System Installation Criteria during the preparation of the 1999 edition of NFPA 13. That committee inserted the following language into NFPA 13, "It is not necessary to restrict the water velocity when determining friction losses using the Hazen-Williams formula". That language was originally inserted in section A-8-4.1 in the 1999 edition and continues today as section A.22.4.1.

It was our hope as an industry that

this would put the issue to bed once and for all, but the rumors and restrictions persist. Just this spring, a major insurance, laboratory, and standards writing organization put out a new version of their data sheets regarding the design of fire sprinkler systems. In this new package of data sheets, they prohibit the use of the Hazen-Williams formula in situations where the water velocity exceeds 30 ft/sec and require the use of the Darcy-Weisbach method of friction loss calculations for these high velocity situations.

But, the Darcy-Weisbach method of calculations isn't perfect either. The remainder of this paper will be dedicated to comparing the Hazen-Williams formula to the Darcy-Weisbach method and explaining why pushing people to the Darcy-Weisbach method might be a mistake for sprinkler systems that contain only water.

## Darcy-Weisbach

The Darcy-Weisbach method of calculating friction loss is generally considered as a more accurate method of calculating friction loss because it accounts for turbulence in the water, changes in temperature and density in the water, and even

>> CONTINUED ON PAGE 16



**Kenneth E. Isman, P.E.**

Vice President, Engineering for NFSA. Ken represents NFSA on the NFPA Technical Committee on Sprinkler System Discharge Criteria



changes in the gravitational field in which the fluid flow is occurring (which would be important if we were designing a sprinkler system for a moon base).

But the Darcy-Weisbach method of calculating friction loss has challenges of its own. Most of the time, it is impossible to know the temperature or density of the water that will be flowing through the pipe, so assumptions have to be made. Another challenge with the use of the Darcy-Weisbach formula is the difficulty in finding the friction factor "f". There is no direct formula for calculating "f" for most of the turbulent flow region. Instead, people performing Darcy-Weisbach generally use a diagram known as the "Moody Diagram" to determine the friction factor "f". But the Moody Diagram is complex with multiple variables that are not linear, making interpolation extremely difficult when the values of the solution are not the exact values of the curves on the Moody Diagram.

A third challenge with the Darcy-Weisbach method of calculation is the determination of an epsilon-factor, which describes the relative roughness of the interior of the pipe. There are well published epsilon-factors for new steel pipes, but NFPA 13 does not permit the use of pipe roughness for new pipe. Instead, NFPA 13 requires the user to prove that the sprinkler system will work years after it is installed by forcing calculations using aged pipe. In order to make a true comparison of friction loss between the Hazen-Williams and Darcy-Weisbach methods, a realistic epsilon-factor for aged pipe under the Darcy-Weisbach method would need to be used so that friction losses in aged pipe could also be compared to each other as well as friction losses in new pipe.

### Comparison for New Pipe

In this article, a comparison of friction losses in schedule 40 steel pipe of sizes 1 inch, 1-1/2 inch, 2-1/2 inch and 4 inch pipe will be done for demonstration purposes. Other pipe sizes could be used for a comparison, but these four sizes are fairly representative of the situation and should be sufficient for this discussion. The following list shows the comparison of the friction loss in various situations:

**TABLE 1 - Friction Loss in New 1-inch Steel Pipe**

Pipe Size	Internal Diameter	Flow (gpm)	Velocity (ft/s)	Friction Loss: Darcy-Weisbach (f=0.0018)	Friction Loss: Hazen-Wil. (C=140)	Difference	Difference %
1 inch	1.049	26.9	10	0.154	0.169	-0.015	-9.1%
		53.0	20	0.612	0.612	0.000	0%
		79.5	30	1.346	0.928	0.422	31%
		105.8	40	2.361	1.295	1.066	45%
		131.7	50	3.755	1.723	2.032	54%
		157.2	60	5.527	2.204	3.323	60%
		182.3	70	7.676	2.747	4.929	63%

**TABLE 2 - Friction Loss in New 1-1/2-Inch Steel Pipe**

Pipe Size	Internal Diameter	Flow (gpm)	Velocity (ft/s)	Friction Loss: Darcy-Weisbach (f=0.0018)	Friction Loss: Hazen-Wil. (C=140)	Difference	Difference %
1 1/2 inch	1.610	62.8	10	0.090	0.101	-0.011	-12.2%
		125.7	20	0.363	0.363	0.000	0%
		188.5	30	0.814	0.550	0.264	32%
		251.3	40	1.460	0.721	0.739	51%
		314.2	50	2.385	1.025	1.360	57%
		377.0	60	3.598	1.312	2.286	63%
		439.8	70	5.100	1.632	3.468	68%

**TABLE 3 - Friction Loss in New 2-1/2-Inch Steel Pipe**

Pipe Size	Internal Diameter	Flow (gpm)	Velocity (ft/s)	Friction Loss: Darcy-Weisbach (f=0.0018)	Friction Loss: Hazen-Wil. (C=140)	Difference	Difference %
2 1/2 inch	2.469	149	10	0.087	0.062	0.025	28%
		298	20	0.338	0.214	0.124	37%
		447	30	0.667	0.334	0.333	50%
		596	40	1.000	0.477	0.523	69%
		745	50	1.411	0.632	0.779	77%
		894	60	1.897	0.811	1.086	84%
		1043	70	2.457	1.096	1.360	89%

**TABLE 4 - Friction Loss in New 4-Inch Steel Pipe**

Pipe Size	Internal Diameter	Flow (gpm)	Velocity (ft/s)	Friction Loss: Darcy-Weisbach (f=0.0018)	Friction Loss: Hazen-Wil. (C=140)	Difference	Difference %
4 inch	4.026	395	10	0.047	0.035	0.012	27%
		790	20	0.170	0.126	0.044	26%
		1185	30	0.358	0.190	0.168	43%
		1580	40	0.544	0.266	0.278	50%
		1975	50	0.729	0.354	0.375	47%
		2370	60	0.912	0.453	0.459	51%
		2765	70	1.095	0.564	0.531	52%

- Table 1 shows the friction loss in new 1 inch schedule 40 steel pipe
- Table 2 shows the friction loss in new 1-1/2 inch schedule 40 steel pipe
- Table 3 shows the friction loss in new 2-1/2 inch schedule 40 steel pipe

- Table 4 shows the friction loss in new 4 inch schedule 40 steel pipe

In order to develop the tables, the pipe roughness for new pipes needs to be determined. The Hazen-Williams formula uses a "C-factor" to estimate the roughness of the pipe. It has widely been reported that new steel pipes have a C-factor of 140. In a study published in the November 1968

**TABLE 5 - Friction Loss in Aged 1-Inch Steel Pipe**

Pipe Size	Internal Diameter	Flow (gpm)	Velocity (ft/s)	Friction Loss: Darcy-Weisbach (ε=0.004)	Friction Loss: Hazen-Wil. (C=120)	Difference	Difference %
1 inch	1.049	26.9	10	0.15436 (0.27)	0.225	-0.071 (ε=+0.046)	-46 (ε=+17)
		52.9	20	0.994	0.814	0.180	18
		67.3	25	1.514	1.228	0.286	19
		80.8	30	2.137	1.725	0.430	20
		94.7	35	2.807	2.293	0.600	21
		107.7	40	3.744	2.931	0.813	22
		121.2	45	4.996	3.647	1.089	22
		134.6	50	6.769	4.428	1.341	23

**TABLE 6 - Friction Loss in Aged 1-1/2-Inch Steel Pipe**

Pipe Size	Internal Diameter	Flow (gpm)	Velocity (ft/s)	Friction Loss: Darcy-Weisbach (ε=0.004)	Friction Loss: Hazen-Wil. (C=120)	Difference	Difference %
1 1/2 inch	1.610	62.8	10	0.157	0.134	0.023	15
		125.7	20	0.577	0.484	0.093	16
		157.1	25	0.882	0.732	0.150	17
		188.5	30	1.249	1.035	0.214	18
		219.9	35	1.679	1.392	0.286	19
		251.3	40	2.169	1.745	0.424	19
		282.8	45	2.725	2.171	0.554	20
		314.2	50	3.329	2.638	0.701	21

**TABLE 7 - Friction Loss in Aged 2-1/2-Inch Steel Pipe**

Pipe Size	Internal Diameter	Flow (gpm)	Velocity (ft/s)	Friction Loss: Darcy-Weisbach (ε=0.004)	Friction Loss: Hazen-Wil. (C=120)	Difference	Difference %
2 1/2 inch	2.460	149	10	0.092	0.883	0.009	10
		298	20	0.327	0.298	0.029	11
		373	25	0.515	0.451	0.064	12
		448	30	0.702	0.634	0.066	13
		522	35	0.979	0.841	0.138	14
		597	40	1.267	1.078	0.189	15
		671	45	1.589	1.338	0.251	16
		746	50	1.948	1.628	0.321	16

**TABLE 8 - Friction Loss in Aged 4-Inch Steel Pipe**

Pipe Size	Internal Diameter	Flow (gpm)	Velocity (ft/s)	Friction Loss: Darcy-Weisbach (ε=0.004)	Friction Loss: Hazen-Wil. (C=120)	Difference	Difference %
4 inch	4.026	385	10	0.050	0.646	0.004	8
		770	20	0.184	0.367	0.017	9
		967	25	0.284	0.353	0.028	10
		1185	30	0.397	0.354	0.043	11
		1382	35	0.534	0.471	0.063	12
		1580	40	0.690	0.603	0.087	13
		1777	45	0.866	0.750	0.116	13
		1974	50	1.060	0.911	0.149	14

Fire Technology journal, C-factors for new steel pipe were reported to be as high as 145 or 146 (Merdinyan, 1968), although Hazen and Williams themselves reported smooth new pipe to have C-factors as high as 140 (Hazen and Williams, 1905). It would seem reasonable to use a C-factor of 140 for this analysis.

For the Darcy-Weisbach method of friction loss calculation, the pipe roughness

is approximated by an epsilon-factor. For new steel pipe, the epsilon-factor is reported as 0.00015 ft (Daugherty, Franzini and Finnemore, 1985). Since the pipe sizes used in this analysis are in units of inches, the epsilon-factor needs to be converted into inches. A factor of 0.00015 ft is equal to a factor of 0.0018 inches.

In order to eliminate the error involved with reading the Moody Diagram, a com-

puter program can be written to determine the Darcy-Weisbach friction factor "f". Unfortunately, a number of different formulas can be used to determine "f" (Jeppson, 1976). For all turbulent flows (Re > 4,000), the following formula can be used:

$$\frac{1}{\sqrt{f}} = 1.14 - 2 \log_{10} \left( \frac{\epsilon}{d} + \frac{9.35}{Re \sqrt{f}} \right)$$

But for turbulent flows between 4,000 and 100,000, Jeppson also says that the following formulas can be used to determine "f":

$$f = 0.316 / Re^{0.25}$$

or

$$\frac{1}{\sqrt{f}} = 2 \log_{10} (Re \sqrt{f}) - 0.8$$

Unfortunately, with these different formulas for finding "f", there is whole range of values for the potential friction loss for the lower velocity situations, making it more difficult to determine the base number to compare the Hazen-Williams friction loss to. In cases where the formulas produce widely ranging values for "f", the range has been reported in the tables.

Using these values for the roughness of new pipe, tables can be generated for friction loss in four different sizes of pipe (each a foot long) at many different flows representing different velocities. The last two columns in each table show the difference in friction loss calculated and the percentage that the Hazen-Williams calculation varies from the Darcy-Weisbach method.

As you can see from the results in tables 1-4, the Hazen-Williams formula is not very accurate at recreating the friction loss in new pipe. Depending on the pipe size and flow, the Hazen-Williams formula is between 26 and 32 percent off. But the friction loss does not get less accurate as the flow or velocity increases. The Hazen-Williams formula is roughly the same in accuracy regardless of the velocity. If you agree that the Hazen-Williams formula is accurate enough to use for friction loss calculations, there is no reason to believe that the formula can't be used at higher velocity.

>> CONTINUED ON PAGE 18



### Comparison for Aged Pipe

The saving grace for the Hazen-Williams formula is that we don't allow people to use it for new pipe. We force the calculation of sprinkler systems with a roughness for old pipe in order to make sure that the sprinkler system will work when it gets older and corrosion occurs. For wet pipe sprinkler systems, NFPA 13 mandates a maximum Hazen-Williams C-factor of 120.

NFPA 13 does not mandate a specific epsilon-factor for roughness of pipe using the Darcy-Weisbach method. Instead, a value for aged pipe needs to be determined. In a separate paper, this author went through the exercise of determining a reasonable epsilon-factor of 0.004 inches for aged pipe that is equivalent to a Hazen-Williams C-factor of 120 (Isman, 2001). Using this epsilon factor for aged pipe and C-factors of 120, the following tables can be prepared to show the comparison of the friction loss calculated with the Darcy-Weisbach and Hazen-Williams methods:

- Table 5 shows the friction loss in aged 1 inch schedule 40 steel pipe
- Table 6 shows the friction loss in aged 1-1/2 inch schedule 40 steel pipe
- Table 7 shows the friction loss in aged 2-1/2 inch schedule 40 steel pipe
- Table 8 shows the friction loss in aged 4 inch schedule 40 steel pipe

Tables 5 through 8 clearly show that the Hazen-Williams formula does much better at predicting friction loss in aged pipe than it does in predicting friction loss in new pipe. There is some slight increase in the lack of accuracy of the Hazen-Williams formula as the velocity increases, but that slight increase is minimal.

It is difficult to justify a completely different (and much more complicated) calculation technique for the rare situations where the velocity in a few of the pipes of the sprinkler system turns out to be high. Rather than make the sprinkler technician perform a whole new calculation, it might be better to use different C-factors in the Hazen-Williams formula when veloci-

**TABLE 9 - Friction Loss in Aged 1-Inch Steel Pipe with Modified C-Factor**

Pipe Size	Internal Diameter	Flow (gpm)	Velocity (ft/s)	Friction Loss: Darcy-Weisbach ( $\epsilon=0.004$ )	Friction Loss: Hazen-Wil. (C=110)	Difference	Difference %
1 inch	1.049	35	35	2.893	2.693	0.200	7
		40	40	3.744	3.443	0.301	8
		45	45	4.696	4.284	0.412	9
		50	50	5.760	5.201	0.559	10

**TABLE 10 - Friction Loss in Aged 1-1/2-Inch Steel Pipe with Modified C-Factor**

Pipe Size	Internal Diameter	Flow (gpm)	Velocity (ft/s)	Friction Loss: Darcy-Weisbach ( $\epsilon=0.004$ )	Friction Loss: Hazen-Wil. (C=110)	Difference	Difference %
1 1/2 inch	1.610	35	35	1.679	1.601	0.078	5
		40	40	2.166	2.058	0.108	5
		45	45	2.723	2.550	0.173	6
		50	50	3.329	3.098	0.231	7

**TABLE 11 - Friction Loss in Aged 2-1/2-Inch Steel Pipe with Modified C-Factor**

Pipe Size	Internal Diameter	Flow (gpm)	Velocity (ft/s)	Friction Loss: Darcy-Weisbach ( $\epsilon=0.004$ )	Friction Loss: Hazen-Wil. (C=110)	Difference	Difference %
2 1/2 inch	2.469	35	35	0.970	0.908	0.062	-1
		40	40	1.267	1.206	0.061	0
		45	45	1.589	1.575	0.014	1
		50	50	1.948	1.912	0.036	2

**TABLE 12 - Friction Loss in Aged 4-Inch Steel Pipe with modified C-Factor**

Pipe Size	Internal Diameter	Flow (gpm)	Velocity (ft/s)	Friction Loss: Darcy-Weisbach ( $\epsilon=0.004$ )	Friction Loss: Hazen-Wil. (C=110)	Difference	Difference %
4 inch	4.026	35	35	0.314	0.553	-0.239	-3
		40	40	0.380	0.709	-0.329	-3
		45	45	0.466	0.881	-0.415	-2
		50	50	0.560	1.071	-0.511	-1

ties exceed 30 ft/s. This would have the value of allowing the sprinkler technician to continue to use the same computer program and simply change one variable rather than going to a completely different calculation technique for the entire system when a few pipes are the object of concern.

Rather than use a C-factor of 120 for a wet pipe system, a C-factor of 110 was used to close the gap in the prediction of friction loss. Tables 9 through 12 show the friction loss for the modified Hazen-Williams technique compared to the Darcy-Weisbach method.

As tables 9 through 12 show, it would be much better to simply alter the Hazen-Williams C-Factor for velocities over 30 ft per second than it would to require a completely different calculation technique if such a level of accuracy is sought in the calculations. For the larger pipe sizes, this

would have the effect of the Hazen-Williams formula over-predicting friction loss and creating additional safety factors.

### Conclusion

It is difficult to directly compare the Hazen-Williams friction loss formula to the Darcy-Weisbach friction loss calculation method because of the complexities of the Darcy-Weisbach equation and the unknowns and assumptions that have to be made in order to use the Darcy-Weisbach equation.

The accuracy of the Hazen-Williams formula does not vary significantly with water flow velocity. In the new pipe comparison, no appreciable increase occurred. In the aged pipe comparison, only a slight increase of 6% occurred between the 10 ft/sec and the 50 ft/sec values.



>> CONTINUED FROM PAGE 18

It would be better for the fire sprinkler industry to allow the use of the Hazen-Williams formula when the velocity exceeds 30 ft/sec and simply decrease the C-factor to 110 for those pipes where the high velocity exists rather than force the sprinkler contractor to undertake a completely different calculation technique for the entire sprinkler system.

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(from l. to r.) Jack Thacker of Allan Automatic Sprinkler, a rep from the Inland Empire 66ers, West Regional Manager Bruce Lecair and Sprinklerman get ready to throw out the first pitch at the 66ers game in San Bernardino, California on June 30.



Jack Thacker of Allan Automatic Sprinkler winds up to deliver the first pitch at the 66ers game.

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## Our presenters are:

**Fire Sprinkler Industry - Best Practices Project Manager Paul Johnson** (PJohnson@FSI-bp.org) - Paul's responsibilities include general management, relationships with Subscribers and Program Sponsors as well as coordination and development of content and relationships with program sponsors. A 25-year veteran of fire sprinkler industry with an MBA from Rollins College, he is also President of Bardane, Inc., a firm focused on improving competitiveness and profitability of America's workforce.

**Risk Management Specialist Brian Cullen** (BCullen@FSI-bp.org) - Based in the Chicago/Milwaukee area, Brian heads a team of professionals focused on providing risk management coaching and innovative solutions utilizing Best Practices. With over 30 years of experience in insurance underwriting, marketing, and brokerage management he is extensively experienced in developing risk management techniques for fire sprinkler contracting firms and other contractors. Additionally, he is Founder of Cullen Group, a consulting firm with practices in business coaching and risk management.

**Technical Specialist John Karnatz** (JKarnatz@FSI-bp.org) - John leads a staff of 14 technical professionals responsible for planning, developing and maintaining the FSI-bp.org website. His career includes professional and executive positions at IBM, American Express and James Martin & Company before forming TSD Group, a consulting firm that helps clients develop new products and services using information and web-based technologies. He is based in the Chicago area.

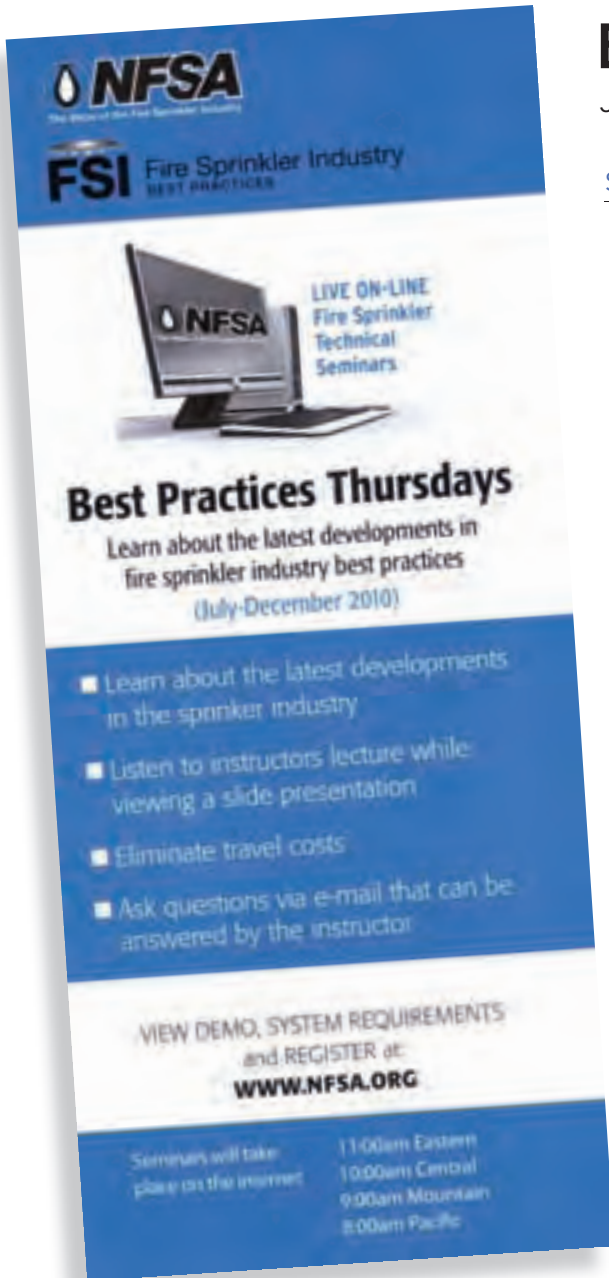
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# Limited-Combustible – The Gray in a Black and White World

By Jeff Hugo, CBO

If I could define the term, codes and standards; it would go like this: A myriad of terms, methods and assemblies somehow working together to form a safe and viable structure. The key word being “somehow” and if I could put a color to it, it would be gray. As we go through code and standard cycles and enforcement of these, we somehow produce a building that we live and work in safely. A designer, contractor and an AHJ can come to a quick conclusion that there are gray areas in the books that regulate construction.

The purpose of articles such as this is to clear up the gray areas. Currently limited-combustible is on top of the gray radar. There is a stance that the NFPA term, “limited-combustible,” only fits into the International Building Code (IBC) combustible category and/or does not fit into the IBC at all. This, some say, results in the limited-combustible concealed spaces being sprinklered as they are considered combustible in the IBC. This stance is incorrect and far from gray.

The term and definition, “limited combustible,” is introduced in the 1975 edition of NFPA 220. The principle of the definition has not changed much over the years, but where and how it is used has. First, limited-combustible refers to a building construction material not complying with the definition of noncombustible material that, in the form in which it is used, has a potential heat value not exceeding 3500 Btu/lb when tested according to NFPA 259. Along with this limitation on heat

value, the material must:

- 1). Have a structural base of non-combustible material with the surfacing not to exceed 1/8” with a flame spread index not greater than 50.
- 2). Materials other than described in (1) above, in the form and thickness used:
  - a). neither having a flame spread index greater than 25, and
  - b). no evidence of continued progressive combustion, and
  - c). be of a composition, when exposed by cutting (on any plane) would not have a flame spread index greater than 25. (flame spread index is determined by ASTM E 84 or UL 723)

Some examples of material that meet the limited-combustible definition are:

1. Drywall (paper faced gypsum board) 760 btu/lb - flame spread 15
2. Rock wool with paper facing 1050 btu/lb - flame spread <25
3. Some roof insulated sheathing 3380 btu/lb - flame spread 0 - <25

With limited-combustible defined, let's take it over to the building code setting. The IBC limits to combustible and non-combustible types of construction. This means the primary and secondary structural members (horizontal and vertical) are one of the two types, or in some cases (such as Type III construction) a mixture of both.

Do non-combustible types of construction (Type I & II) have combustible materials such as drywall or rock wool insulation?

Yes. Isn't the paper facing of the gypsum wallboard or rock wool combustible? Yes. Aren't gypsum wallboard and rock wool defined as limited-combustible? Yes. However, does that matter in the building code type of construction? No, according to IBC Section 603.1 a Type I or II building can have a number of combustible finishes regardless of sprinklers, such as: thermal and acoustical insulation (flame spread index <25) and gypsum wallboard. This section even goes on to refer to Section 717.5 that states “Combustible materials shall not be permitted in concealed spaces of buildings of Type I or II construction, except combustible materials in accordance with Section 603.” In short, Section 603 allows gypsum wallboard and thermal and acoustical insulation in a Type I or II building, Section 717.5 allows it in a concealed space. Meaning, the limited-combustible term of the NFPA fits into the IBC.

In addition, the section (717.5) goes on to exempt (in concealed spaces): combustible materials in plenums (Section 602 IMC), Class A interior finish materials, combustible piping within partitions or

>> CONTINUED ON PAGE 24



Jeff is NFSA's  
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>> CONTINUED FROM PAGE 23

shaft enclosures (IBC, IMC, IPC) and combustible insulation on pipe and tubing in concealed spaces other than plenums.

In the development of the 2012 IBC, the General Code Committee disapproved introducing the limited-combustible definition into the text of the IBC. The committee stated, "The term limited combustible is not used in the International Building Code. Where such term is included in a referenced standard, the definition in the referenced standard should be used."

With these sections and code development actions in place, why is there still trouble with the NFPA 13 and NFPA 13R definition of limited-combustible? Why is there doubt when sprinklers are exempt

in concealed limited-combustible spaces? Why are some still insisting PVC drain pipes above a ceiling in a chain drug store be sprinklered? Some AHJs insist that NFPA's limited-combustible does not apply to the IBC and these so called "combustible" spaces are required to be sprinklered. I disagree. The sections quoted above (Section 603 and 717.5) and the committee statement proves me to be correct.

The king of the color gray (and pioneer of the "green" movement), Dr. Seuss, may summarize IBC Sections 603 and 717.5 this way, "Would this, could this, should this combustible, be a limited-combustible?" ①



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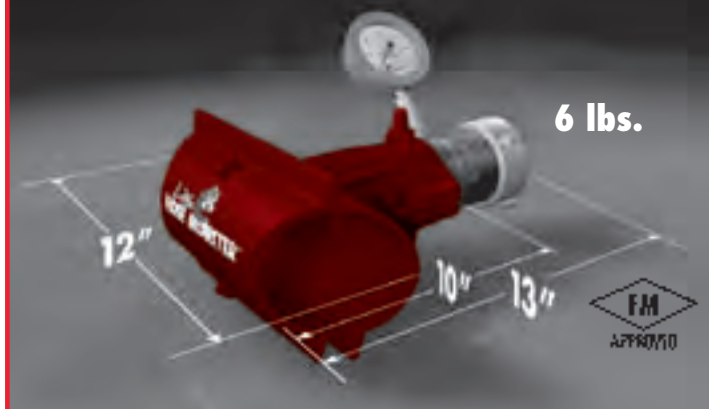
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# Concrete Anchors for Sway Braces

**T**he 2010 edition of NFPA 13 modified the requirements for concrete anchors used in sway brace installation. The goal of the sway brace is to keep the system piping rigid to the building structure so that it will move with the structure when subjected to earthquake forces. Sway braces and recognition of earthquake forces have become more prevalent since 2000 with the new editions of the model building codes. While focusing on the sway brace protection of the sprinkler system, each of the assembly components also needed to be examined.

Anchors in concrete can handle substantial gravity loads. However, the cyclic motion of an earthquake can be difficult for concrete to absorb and diffuse. This may result in cracks from the stresses of the seismic motion and the displacement the building will experience. The cracks created can vary in size. The larger the crack, the more the strength of the concrete is weakened, which in turn will affect the capacity of the anchor.

Concrete anchors that are commonly used in fire sprinkler systems are post-installed anchors. A post-installed anchor is a mechanical anchor that has not been cast in place in the concrete. These include wedge anchors and undercut anchors, both of which have generic load values provided in Figure 9.3.5.9.1 of NFPA 13. A wedge anchor is installed in a predrilled hole in the concrete. When it reaches the appropriate depth for the installation the end of the anchor expands in width to lock it into place. An undercut anchor is one where a special drill bit is used to create the space for the anchor to expand within

the concrete. There is also a design where the undercut anchor is self-drilling and would not require a special drill bit. Other types of anchors may be permitted but they would have to be listed and would therefore have loads and limitations provided by the manufacturer.


The change in the 2010 edition has resulted in these types of anchors having to be prequalified, which correlates with model building code requirements. NFPA 13 Section 9.3.5.9.7.1 states, "Concrete anchors shall be prequalified for seismic applications in accordance with ACI 355.2, *Qualification of Post-Installed Mechanical Anchors in Concrete and Commentary*, and installed in accordance with the manufacturer's instructions." The referenced standard is published by the American Concrete Institute.

Some of the tests in this document are for cracked concrete. Cracked concrete for testing purposes is defined in Section 2.1.6 of the 2007 Edition of ACI 355.2 as "a concrete test member with a single, full-depth, approximately uniform width crack." In the tests that are conducted, there are eight tests that use cracked concrete conditions. The width of the crack ranges from 0.004 inches to 0.020 inches (0.1 mm to 0.5 mm) depending on the specific test. Although some of the cracks are physically small, the load capacity of the anchor can be dramatically reduced by their presence.

Currently the International Code Council Evaluation Services produces reports on many products, including mechanical anchors, which are available on its website ([www.icc-es.org](http://www.icc-es.org)). The standard that con-

tains the requirements for these anchors is ACI 193, *Acceptance Criteria for Mechanical Anchors in Concrete Elements*. This document also ties the requirements back to ACI 355.2. However, the reports must be read in detail as some of the reports indicate that the information provided is only for uncracked concrete. This would not be adequate for areas that are subject to moderate or high seismic forces.

A brief review of the reports indicates there are eight manufacturers who have 18 products qualified for cracked concrete. These products range in style and applications as the criteria for the mechanical anchors apply across the board and not just for fire sprinkler systems. There are a handful of products that are applicable to the typical fire sprinkler installation of sway braces.

In general, this is a new requirement applied to the concrete anchors of sway bracing in NFPA 13 sprinkler systems. The modification is a necessity to ensure that a system designed for life and property safety remains operational post-earthquake. Also, as the requirement is present in the model building codes, it is an important correlation. 



NFSA's Director of Product Standards

Victoria B. Valentine, P.E.





# NFSA 2010 Annual Seminar Fairmont Chicago / April 15-16, 2010

This year's Annual Seminar was held April 15 - 16 at the Fairmont Hotel in Chicago. Those familiar with the events leading up to this conference will remember it was originally scheduled to be held at the Fairmont Orchid on Hawaii's Big Island, but to be responsive to the fire sprinkler industry in light of the current economic conditions, NFSA made the difficult but responsible decision to change venues. In light of the circumstances, it turned out to be a very good choice.

While attendance was off by about as much as could be expected during a bear market, ease of travel to the popular Midwestern city provided contractors from both sides of the Mississippi with a practical, cost-effective opportunity to share in the wealth of information disseminated throughout the conference. Since the entire program was compressed into two days from the usual three, registrants spent less time away from their businesses while being able to immerse themselves in a multitude

of educational workshops and topical plenary session presentations. Overall, the conference was very well received.

Next year, the Annual Seminar & Exhibition will be held April 7 - 9 at the Baltimore Hilton in the totally revitalized Inner Harbor area of Baltimore, Maryland. NFSA hosted its 1997 annual seminar there and the location was applauded by all in attendance. It's a wonderful venue with lots of family-oriented activities such as the Orioles, science center, aquarium, IMAX and a host of museums. Dining is world-class with blue crab fresh from the Chesapeake Bay topping a long list of local culinary favorites. Moving back to the traditional three-day schedule, there will be plenty of time for contractors to visit vendors over the two-day exhibition where they will also be able to cheer-on their favorite Top Tech Competition team. Suppliers and manufacturers are reminded to reserve booth space now as this show will likely sell out early. Save the dates. We'll see you then! 📅



The smiling faces of Cathy Lia And Candy French of the Northern Illinois Fire Sprinkler Advisory Board were a welcome site at the registration desk



Guests make themselves comfortable just before the opening session



NFSA Chairman of the Board, Gregg Huennekens opens the conference with welcoming remarks



Awards Committee Chairman, Kevin Ortyl, makes NFSA's Leadership in Public Safety Award presentations to this year's recipients Don Pamplin and Ronny Coleman



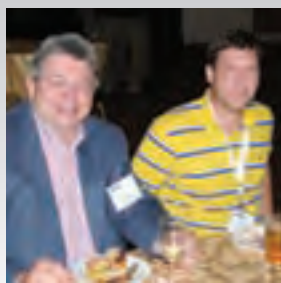
Last year's Golden Sprinkler Award recipient, Wayne Gey, makes the presentation to this year's recipient, Aus Marburger



NFSA President John Viniello makes his traditional "State of the Industry" address



David Webster of Mastergraphics talks about BIM "The Next Big Thing"



John Pasko of F.J. Moran & Son and Ahren Lehner of Cybor Fire Protection at the welcoming cocktail reception



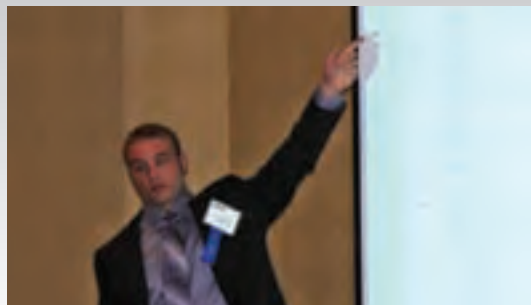
Jeff Courtney of Viega, Eric Skare of Uponor, Brian Fiorisi of Zurn/PEX and Mike Cabral of Rehau (not pictured) head up a panel discussion on the use of PEX in residential sprinkler systems



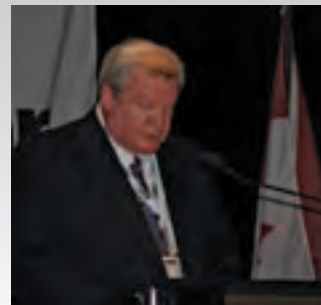
Dan Madrzykowski of NIST presents a workshop on the latest in fire dynamics



NFSA's Vice President of Regional Operations, Buddy Dewar, leads a workshop on the student housing retrofit market



The newest member of the engineering department, Karl Wiegand, delivers a workshop featuring the best questions asked of the EOD, NFSA's Expert of the Day program



Serving as Chairman of the Day, Vice Chairman of the Board, Dennis Coleman, makes remarks to open the final plenary session



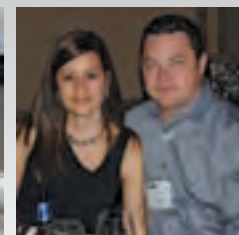
Canadian Automatic Sprinkler Association President John Galt explains the Canadian experience with residential fire sprinklers



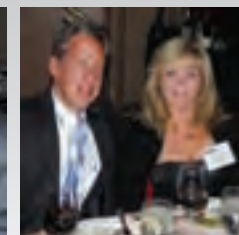
Juergen Teschner, Bodo and Andrea Mueller and Doris Goldenbaum, all of Job GmbH, enjoy a cocktail during the banquet



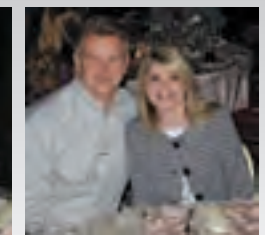
Buck Buchanan, a member of the Seminar Planning Committee, and Bob Worthington of Globe Sprinkler



Jason & Cindy McKeown of Northstar Fire Protection of Texas



John & Mary Jane Abbate of Davis-Ulmer Sprinkler Company



Jon & Kim Ackley of Dalmatian Fire



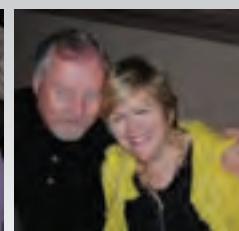
The association welcomed back Fred Barall, Senior Vice President of Industrial Relations. He is joined by his wife Mary and daughter Melissa



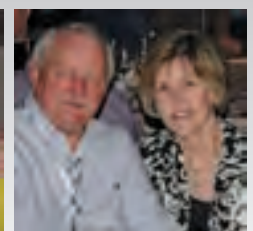
Jamie & Cheryl Reap of United States Fire Protection



David & Susan Herron of Fire Protection Industries



NFSA Chairman of the Board with his wife Clairesse



Special thanks to Buddy and Adele Dewar for taking all the photos used in this Annual Seminar review section





**Thank you!**

I cannot express the depth of my appreciation; I am still processing this honor. I have been a sponge of the people in the sprinkler industry for thirty years. On the job, at seminars, through committees and task groups and at council and board meetings, I sensed the privilege of being present and involved. I know the caliber of people you have recognized. To be invited to be among them is a validation of the person I always hoped to become. Accepting this honor is an incredible gift for which I am eternally grateful.

I believe in fundamental values, core beliefs that make us who we are.

I know my reputation for “sometimes” being a little over the top, a touch passionate, maybe a bit opinionated, and possibly long winded. For that, I have decided not to disappoint. This is a unique opportunity and I want to share.

The most important value in my life is family. When I was a college sophomore, my parents, with my sisters, moved from our rural Pennsylvania home to Knokke, Belgium. By the time they returned eight years later, we, as brothers and sisters, had lost a sense of connection, closeness, the bonds of family and community were largely gone. We all were affected by the loss. I still feel an emotional relationship with the anthem from the TV series Cheers, “You want to be where people are all the same. You want to go where everybody knows your name.” Separation teaches a deep appreciation for belonging.

Today I am blessed. I fortunately became a member of a number of great families and I want them to be recognized:

The Marburgers and the Wierzbickis:

My partner, my love, my friend and life coach, my wife - Laurie

Our two exceptional sons:

Aus

Wilton and his companion Brittany

My in-laws Ted & Clara Wierzbicki

Ted and Clara could not be here today but are represented by our niece and nephew Amelia and Garrison Wierzbicki

**Fire Protection Industries:**

For thirty years, these good people have gotten the job done with a high sense of integrity and tolerance for my industry absences and eclectic behavior. We have an arrangement. They have my back and I theirs. FPI is a credit to the fire sprinkler industry.

Representing FPI are the members of the management team, a few long term associates and their spouses.

**The FE Moran Group:**

FPI was an international affiliate for several years, being owned by French and then English corporations until being repatriated in 1993 by the Moran family. The FE Moran Group is based in the northern Chicago suburb of Northbrook. FPI operated rather independently initially; but more recently has benefited from a strong peer group that has been forged under the leadership of Brian Moran. The personal value of the interplay of this group is immeasurable.

Representing the Moran Group are the architects, Owen (Casey) and Brian Moran, members of the executive team and operating leadership.

**The National Fire Sprinkler Association:**

This is a family too. In articles a few years back, I enjoyed using the phrase “the coalition of the willing.” You are the comrades that have made fighting for the potential of a fully-sprinklered built environment worth the effort. Not primarily for commercial gain but on the moral grounds of occupant and first responder safety. We all share a commitment to

the value propositions of property protection, conservation of resources, public expense, infrastructure, tax base and more. The coalition of the willing is family. NFSA, I asked you to stand up and show your appreciation for one another; please give your neighbors a hug.

There is another close knit family for who I, along with Wayne Gey and Gregg Huennekens, like to see ourselves as devoted uncles. This family is Common Voices.

These ladies you have come to know. These dedicated good Samaritans we love. By sharing, they have inspired and unleashed the emotion and power of our national emergency services. The impact has been game changing for home safety. Through the inspirational leadership of Vickie Pritchett, and the support of Jim Dalton and now Shane Ray, they have raised the bar for citizenship in service to the public welfare: Vina Drennan, Donna Henson, Gail Minger, Bonnie Woodruff, Amy Acton and Justina Page; along with Vickie and Shane. Please acknowledge Common Voices.

I also wish to recognize organized labor. This relationship has its challenges but also its virtues. The countless hours with training committees, in negotiations, pursuing code adoptions and with legislative agendas has been an important part of my business life. I have a healthy respect for and have learned much from both sides of the table.

Over the years much has been accomplished. Fire sprinkler systems have progressed from a voluntary intervention to a minimum requirement. We live in an increasingly safer country where the construction threshold for sprinklers is now virtually zero. With this codification and growth, however, have come a number of structural changes that pose new challenges:

- Casualty insurance carriers were once focused on loss prevention; some time ago they reversed their business model to loss recovery. This historic shift has caused contractors to be demoted from the lofty role of partner to a much less desirable one, target defendant.
- The inherent restraint of an integrated supply chain of manufacturers as installers is history. Manufacturers went through a reverse migration to much less risk adverse silos; passing title with distribution. Enter the age of buyer/installer beware.
- NFPA #13 the small red pamphlet of wisdom is gone. It has grown to a level of complexity that challenges all users to grasp the intent; with every revision the potential for error and conflict increases.
- Product approvals, listings, have expanded to allow a new class of special application materials and products with qualifications atypical to the standards themselves. These niche approvals have introduced requirements that contain overtones of risk transfer intermixed with legitimate instruction.

The result, the country is increasingly safer from fire; regrettably, however, those who made it so, the installers, are at much greater risk for their efforts. We should all take notice of a very simple fact that, “without contractors, sprinklers are heads on a shelf with no place to go.”

I feel strongly this great industry has an obligation to its founding visionary members, Henry Parmelee, Frederick Grinnell, and to itself to find a way back to the trust and cooperation, the interplay of manufacturer and installer, which got us here; a commitment to the highest standards, the highest quality, the greatest efficiency, the best value, and to cooperative transparent problem solving when issues arise. What brings us together and makes everything possible is sprinkler magic, the simple practice of putting the wet stuff on the red stuff. In this industry, we are fortunate; we have a purpose. On a bad day sprinkler people save lives, reduce injury and protect property from the ravages of fire.

After many years, that thought still gets me up and on my way work with enthusiasm.

Again I sincerely wish to thank you, the coalition of the willing, each and every one of you, for being here and sharing this day with me and my families. I am blessed; I am eternally grateful. ①



# Unsolved Mysteries

By Barry Waterman

**A** good correspondent, I read once, has the ability to take seemingly unrelated events and make a convincing argument by stringing the events together in a cohesive way. My own undersized but hyperactive brain has been sending me a bunch of odd signals lately, but amazingly, I'm making some sense of what at first-look appears to be nonsense.

How about world cup soccer, national politics, the recent deaths of celebrities and the fire sprinkler industry blended into a coherent, insightful, entertaining piece? Hang on, because I'm not sure how this is going to turn out.

Now as a contractor I mostly chuckled at all the claims made in their advertisements by the manufacturers of sprinkler heads in our business, but I estimate at least a third of my hair loss is the result of scratching my head over how any object could have a hole in it bigger than the thing itself (a lot of fractions, here).

Even those of us who are not Ph.Ds or PEs learned fractions, usually in grade school. With a bit of scratch paper we (well, most of us) can determine that  $\frac{17}{32}$  of an inch is MORE than  $\frac{1}{2}$  of an inch. The manufacturers would have us believe that they can make a device with a hole in it bigger than the thing itself. Talk about mission impossible, but strangely, everybody believes this. And, until this expose', nobody has even questioned this.

Even more baffling, I have personally submitted drawings showing the use of  $\frac{17}{32}$ " orifice,  $\frac{1}{2}$ " sprinklers on a project.

More baffling still - respected public officials and major insurers have returned the drawings for these projects *with full approvals!* Nobody (until now) has ever questioned this obviously impossible device.

Moving on without the slightest attempt at segue, I also sadly report the recent death of former NBA player Manute Bol. Bol, for you non-sports fans, was seven feet, seven inches tall. (His parents - both standing more than six feet eight - must have chuckled when naming him Manute - rhymes with "minute," as in "tiny"). He is the only player in NBA history to have more blocked shots in his career than points scored. And remember, a basket counts two points. He just was inept at catching and otherwise handling a basketball, but he could swat away an opponent's shot with great skill, even ease.

His mark on history, however, lies outside the boundaries of the basketball court. He was, simply put, a great humanitarian. He devoted his after basketball life and much of the wealth he received as a player to helping those in his native Sudan.

Sudan, I'm sorry to say, is just a mess of a country. The people suffer in every conceivable way. Bol built schools, health clinics and other community facilities. He personally devoted himself to working with the young. He was a hero to his people - actually to all of us. He was the gentle giant of fables, and he gave his life by continuing his work when his health problems needed better care than he

could receive in Sudan.

He did one more thing for history. He coined the phrase "my bad."

During some game in a long season, he committed some infraction that affected the outcome, a loss by his team. When a reporter questioned him about this incident, he simply replied, "My bad."

Bol's English was respectable but not perfect. However, "my bad," is not some awkward remark by someone unschooled in the language. It is a simple and brilliant acceptance of responsibility. How refreshing would it be to hear a person in public life say, "My bad" instead of some ridiculous spin?

Oh yes, public life. I was watching my first World Cup soccer game with my daughter, who played some soccer as a child. There was this awful, annoying noise behind the comments of the broadcasters. "What the hell is that racket?" I asked. "Oh, Dad, those are the vuvuzelas," answered my more clued-in daughter.

"Whew," I replied. "For a while I thought Nancy Pelosi was over there at the game." The horrific droning of the

>> CONTINUED ON PAGE 32



Barry Waterman


Independent consultant  
to the Northern Illinois Fire  
Sprinkler Advisory Board.

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vuvuzelas sound, to me, just like Nancy Pelosi's voice.

In fact, a Google search reveals that "vuvuzela" is a Zulu word meaning "a horn that makes the vu-vu sound." Well, that's the first definition. Like most words, the dictionary lists a number of definitions. The third definition of "vuvuzela" in Webster's reads: "A long plastic horn that makes a sound much like, but certainly just as annoying as the voice of Nancy Pelosi."

You can look it up yourself. If you can't find this third definition in your dictionary - well, my bad.

A final, little-known but fascinating detail about the life of Manute Bol: at seven feet, seven inches tall, he could walk through a doorway seven feet six inches high without bumping his head. Is it possible that the mystery of the 17/32 inch orifice, 1/2 inch sprinkler died with him? 



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# 2009 Fire Protection Contractor Business Sale Wrap-Up, and Near Term Outlook

**2009** was a year of reduced revenues for most industries in the United States. Fire protection contractors' business activity levels, for the most part, were greatly reduced. Sprinkler head sales in the US, a good indicator of installation activity, are estimated to have been off by 41% in 2009 compared with 2006, the peak year, and off 36% compared with 2008.

The value of fire protection contractor companies for tax and estate purposes was in general less in 2009 compared with valuations in general in 2006, 2007 and 2008. The business sale value of a fire protection contractor was in general less in 2009 compared with the period from mid-year 2006 to spring of 2007 (The period considered by some to be the peak.), but not in all cases. The main contributing factors for this reduction in value: reduced revenue and a resulting reduction in profitability (or simply a reduction in profits or reporting of losses) in 2009 compared for the most part with the results of each of 2006, 2007 and 2008; and, lack of non-seller debt financing.

The number of fire protection contractor business sales, known to CB Partners LLC, in 2009 totaled six (6); 25% less compared to 2008. In spite of the economy, the merger, acquisition and other business combination route continues to be a viable method of growing revenues profitably when compared with some other methods of securing revenues and corresponding profits.

In 2009, the purchasers of the fire pro-

GRAPH 1

**Business Sale Transactions  
Fire Protection Contractors**



Source: CB Partners LLC

tection contracting businesses consisted of strategic buyers (large fire protection contractors), former fire protection contractor business owners and private equity investors. The sale price of the companies varied. Some were in line with valuations paid in 2006 and 2007, while others were at lower prices than the valuations paid for similar size businesses in previous years. Valuation, in the latter situations, was not the only consideration for the sellers. The principal other consideration in these latter situations was the achievement of the objectives of the controlling shareholder (s) other than the value of the shares sold.

## Decline in Bank Lending a major contributing factor to decline in Fire Protection Contractor Revenues

Some, if not most, of the expansion in residential and non-residential construction that drove the increase in revenues from installation of new fire protection systems was funded by commercial bank loans.

And, some of the acquisitions of fire protection contractors that we witnessed in the period of 2006 to 2008 were funded in part by commercial bank loans.

Beginning in Spring of 2007, that all began to change. New funding commitments and renewals either became more expensive or disappeared as the world realized that the financing that supported the residential real estate market was in trouble. One company, that was using some non-seller, third party debt to fund cash portions of purchase price offers for fire protection contractors, failed to complete 8 to 10 transactions that it would

>> CONTINUED ON PAGE 34



Managing Director,  
CB Partners LLC

Greg Coggiano



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have been able to complete if bank and other debt financing were available at either reasonable interest rates or at all. Fire protection contractors, which depended on residential construction, at that same time, experienced declining revenues and backlogs.

Non-residential construction seemed, at the time, to be unaffected by the pause in residential construction, however, as it continued to grow at a nice pace (see chart).

But, as time marched on, instead of getting better, as we all know now, the financial crisis became worse. By Spring/Summer 2008, the CDO(collateralized debt obligation) market (the market that financed mortgages) was in bad shape. Washington Mutual and Bear Stearns, both weakened and near bankruptcy, were purchased by JP MorganChase. Lending ceased by September/October 2008 and the banking system came to a halt and almost collapsed. The Tarp plan and other efforts of the federal government since September/October 2008 brought the economy back from the brink, but, not all cylinders are functioning well. Bank balance sheets continue to shrink from their peak in 2008.

Non-residential construction peaked in September/October 2008 and declined along with the decline in commercial and industrial assets, and residential, and commercial real estate assets on the books of commercial banks.

Commercial and industrial loans on the books of commercial banks peaked in October 2008 while bank owned commercial real estate assets peaked in December 2008. Since that time both categories have declined; indicating that lending is not robust.

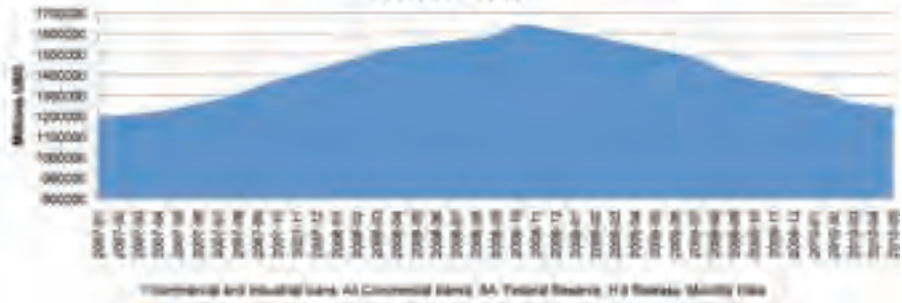
Residential and Non-Residential Construction Nationwide may have stopped its decline, and appears to have stabilized in 2010

Conversations with Fire Protection Contractors from across the nation at the recent NFSA conference in Chicago lead me to believe that business activity has stabilized and may be showing signs of improvement in 2010 in certain regions.

Indeed from the following chart, one can surmise that the decline in residential

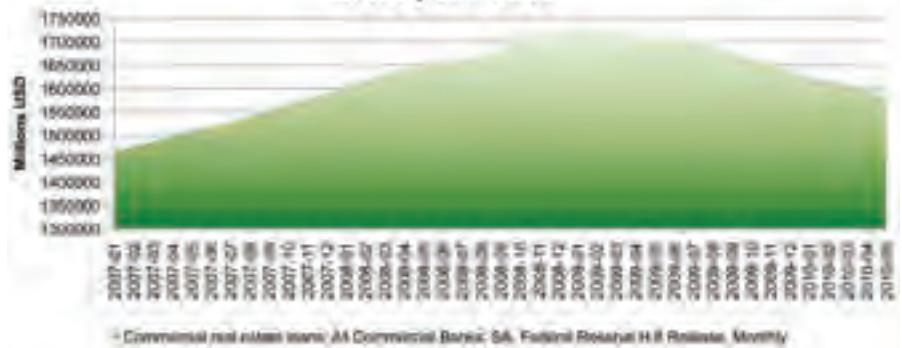
**GRAPH 2**

**Commercial and industrial loan assets off 24% since peak in October 2008**



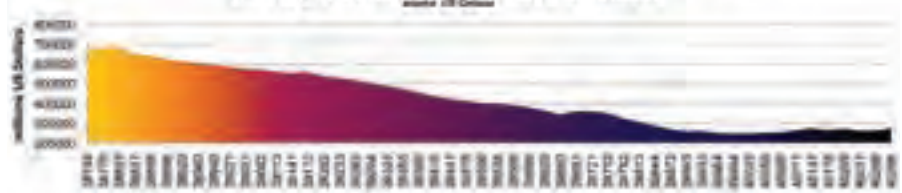
**GRAPH 3**

**Commercial real estate loans assets declined 8% since peak 12/08**



**GRAPH 4**

**US Residential Construction peaked in March 2006 and is 60% off that high; but, appears to have stabilized**



**GRAPH 5**

**US Non Residential Construction Put in Place exhibiting seasonal growth; but, is 18% below the peak of October 2008**



**GRAPH 6**

**US Non-Residential Building Construction Employment, Seasonally Adj.**  
Source: US Bureau of Labor Statistics



**GRAPH 7**

**US Non-Residential Specialty Trade Construction Employment, Seasonally Adj.** Source: US Bureau of Labor Statistics



construction has leveled off, is stable, and in some areas of the country is once again growing.

As well, from the chart below one might surmise, the US non-residential construction and employment market has reached its bottom, is stabilized or stabilizing, and may rise again in 2010.

The contributing factors to the stabilization are public spending through BRAC, other defense and GSA spending, and of course the \$787 billion Recovery Act stimulus plan. Private construction for the

most part showed reductions in spending from September 2008 to year end 2009.

Construction employment patterns appear to have stabilized in 2010

The following charts document the employment patterns for National non-residential construction pertinent to Fire Protection Contracting. While the numbers for April and May 2010 are preliminary, in both non-residential building construction employment and, non-residential specialty construction employment, the decline in employment that began in approximately

>> CONTINUED FROM PAGE 34

February 2008, it appears, may be bottoming out.

**Near Term Outlook:**

**Reasons why, for most of the country, 2010 and 2011 may be better for operating Fire Protection Contractors and those wishing to exit**

- The recovery appears to have begun in 2010 and may sustain moving forward if the following activities continue to move in a positive direction
- If bank lending continues to increase, more money will be available to fund residential and non-residential construction projects on which most Fire Protection Contractors depend for their revenue.
  - The rate of change in decline of commercial and industrial loan assets and commercial real estate loan assets appears to be flattening over the first 5 months of 2010 which may indicate that balance sheets are now stronger and lending activity may again resume.
  - Discussions with a handful of commercial bank lending officers from major US Banks suggest that lending is resuming and may be picking up pace: Large banks are reporting to be lending money to large companies at more aggressive terms than in the past because banks are now competing for assets whereas last year at this time less of this type of competitive activity for assets occurred.

- Buy/Sell activity appears to be increasing
  - Acquisition activity is increasing: More add-on acquisitions are occurring and corporations as well as private equity firms are paying money to retain intermediaries to search for attractive assets to acquire.
  - Sellers seem more willing to offer their companies for sale in 2010 than most were in 2009.

- The preceding charts that through May of 2010 both construction and employ-

>> CONTINUED ON PAGE 35

ment, on a seasonally adjusted basis, may have bottomed out nationally and may begin to trend more positively. This is something that did not occur at all in 2009. If one accepts that assumption and the assumption that capital is increasingly flowing into the construction market (*in accordance with comments from some fire protection contractor market participants*), then maybe the worst is behind us.

- Consumers seem to be spending once again and consumer loans grew on bank balance sheets in 2010.
- Major corporation earnings reports seem better than last year at this time, and the stock market appears to continue to recover.

**In spite of the positive indications of direction in 2010 noted above, there are reasons why the broader national recovery may be slower than in the past and may be volatile or reverse.**

- Strained balance sheets, higher taxes, weak wage growth, weak employment growth and subdued confidence of businesses and consumers alike may temper a sustained recovery.
- The financial crisis in Europe could spill over into US financial markets, tightening credit conditions once again for households and firms.

**Reasons for Fire Protection Contractors to expect a slower recovery than some other industries.**

- Non-residential real estate's vacancy rate continued growing for the first 3 months of 2010, according to industry experts. Pockets of demand are growing in some parts of the US, and, real estate experts expect the broader market will begin to recover in late 2010 or early 2011. If this does not happen, the recovery may take much more time than currently believed.
- Technological and social changes that are driving the growth in:
  - Demand for online retail at the expense of in store sales,

- The use of existing space at home or other locations instead of conventional office space may reduce overall commercial real estate demand in the future and its impact may result in a slower and less robust recovery than in the past.

- Building suppliers like USG, the largest supplier of drywall in the nation, reported a first quarter 2010 loss of \$110 million on revenues of \$760 million. The CEO noted that it was not a great quarter but believes that things have stabilized. The sentiment of USG, as expressed in a recent article that appeared in the Wall Street Journal, is very similar to other large building materials manufacturers and suppliers quoted in that article. Drywall suppliers were quoted as operating at 50% of capacity. The CEO of one supplier of wood, wood products and drywall, Temple Inland, stated that while he believes things are improving, he would prefer to see a longer period of increasing demand beyond the seasonal rally in March of 2010 before he would determine that the 2010 rally is sustainable.
- The lending that is occurring presently, lenders report, is selective rather than broad based, and is to companies within industries that have growing revenues and profits. News in print suggests that bank lending has been reduced to small businesses. Whatever the case, loan volume is not great enough at this juncture to show meaningful positive growth in commercial and industrial assets, and non-residential real estate assets on the books of commercial banks as of the end of March 2010.

Revenues and profits grow through two ways: acquisition of companies/revenues/profits; and, increased demand for the products generating those revenues. The fire protection contracting industry remains a regional business in the US. If revenues and profits are not growing in your marketplace due to increased demand, and/or there is an overhang of supply of building space and/or too much competition among fire protection contractors, then quite possibly, in your

particular market, you may wish to shift gears, if you have not already, and prepare a longer term strategy to prosper in that environment, as the help from the outside (Stimulus plan and the like) may come to an end in 2010, are largely known and are factored into this economy.

Some Fire Protection Contractors, like others have in 2009 and years past, may elect the acquisition or merger or other business combination route to build profitable revenues. In the long run, this may be a better strategy to grow and prosper compared with other methods of securing market share.

**A note about the Author:**

Greg Coggiano is a Managing Director, CB Partners LLC

CB Partners LLC represents buyers and sellers of businesses and values businesses in the Fire Protection Contracting industry and others. It is familiar with the focus and objectives of most of the companies and institutions that have interest in buying Fire Protection Contractors. Recently, it has completed business sales and valuations, market research, seminars and workshops related to Fire Protection Contractor business sales and valuation for the National Fire Sprinkler Association. CB Partners LLC is a member of the NFSA.

*For more information contact Gregory Coggiano, Managing Director, CB Partners LLC, Tel: (330) 478-4751, Cell: (330) 323-2609, E-Mail: gcoggiano@neo.rr.com*



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## Changes in NFSA Regional Operations

With the retirement of Dan Gengler on July 31, 2010, New York Regional Manager Dom Kasmauskas has been appointed to replace him as Associate Director of Regional Operations - North. Dom, along with Dave Bowman, who is Associate Director of Regional Operations - South, will assist Vice President of Regional Operations Buddy Dewar in the management of NFSA's Regional Operations. Due to geographic considerations, NFSA will switch from an east/west division of responsibilities to a north/south division. Dom and Dave will divide their respective regions as follows:

■ Dom Kasmauskas: New England, New York, Mid-Atlantic, Great Lakes, Illinois/North Central, Great Plains and Pacific Northwest

■ Dave Bowman: Southeast, Tennessee, Florida, Central, South Central, Southwest and West.

Also, Illinois Regional Manager Bob Kleinheinz will take over the North Central Region. His region will now be known as Illinois/North Central.

Because Dom and Dave both serve as Regional Managers for a single state, they are in an ideal position to provide guidance and assistance to NFSA's other regional managers.

We congratulate Dom on his new position and look forward to the results of this new opportunity for him at NFSA. Thanks from all of us to Dan Gengler for his many years of service. He will be missed.

### Contact information is as follows:

Dom Kasmauskas:  
kasmauskas@nfsa.org, tel: 914.414.3337  
Dave Bowman: bowman@nfsa.org, tel: 845.519.7648

## NFSA Seminar & Biennial Exhibition Booth Space Selling Fast!

Booth space for the NFSA Seminar & Biennial Exhibition at the Baltimore Hilton is now on sale. The Seminar & Exhibition runs from April 7 - 9, 2011 in beautiful and family-friendly Baltimore, Maryland. The revitalization of Baltimore's Inner Harbor makes it the perfect destination for a great family mini-vacation! Join us at the 105th Seminar & Biennial Exhibition as the Industry's best vie for the title of Top-Tech. The Top Tech Competition takes place right in the exhibition hall, drawing excited crowds to watch the event AND visit your booth. Don't wait! Get more information at [www.nfsa.org](http://www.nfsa.org).

## NFSA PAC Needs Your Help!

By supporting NFSA PAC, NFSA members can join together to help elect candidates to Congress who understand the important role automatic fire sprinkler systems play in a comprehensive public fire safety program. Go to [www.nfsa.org](http://www.nfsa.org) and follow the NFSA PAC link at right and fill out the prior approval form to allow us to solicit contributions to the PAC. Clicking on the link will also provide answers to many questions you may have about the PAC.

## NFSA Wins First Place Awards for Its Efforts Supporting Residential Fire Sprinkler Requirement

NFSA received a variety of "Jersey Awards" at this year's annual awards ceremony for the New Jersey Ad Club. The annual awards ceremony honors the best advertising and public relations work in New Jersey over the past year. The NFSA

received a first-place award in the "Public Relations Public Affairs" category for its effort to reaffirm the residential fire sprinkler requirement in the 2009 IRC code in Baltimore. The NFSA NJ Chapter also received a first place award in the category of "Media Relations Special Programs" for the campaign to adopt the residential fire sprinkler requirement in New Jersey. NFSA was also awarded a certificate of participation in the "Self-Mailer" category for the NFSA Fire Sprinkler Design Technician Recruitment Mailer, which was sent to vo-tech counselors earlier this year.

## Karl Wiegand, NFSA's Manager of Installation Standards, Earns E.I.T.

Karl Wiegand, NFSA's Manager of Installation Standards, has passed the Fundamentals of Engineering Exam (FE) and earned the right to be considered an Engineer in Training (E.I.T.). The designation of an E.I.T. is the second step towards becoming a Professional Engineer. The FE is a grueling eight-hour long exam that tests the candidate's knowledge of strengths of materials, fluid flow, heat transfer, chemistry, physics, electrical engineering, thermodynamics, math, statics, and engineering economics along with many other science and engineering subjects. Karl received a passing grade on this exam upon taking it for the first time.



All of us at NFSA congratulate Karl on this accomplishment! 🎉

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# REGIONAL ROUNDUP

## NEW ENGLAND REGION

Tim Travers, Regional Manager



### Fire Deaths Continue to Plague New England

As you know, the mission statement of the NFSA is to "To protect lives and property from fire through the wide-spread acceptance of the fire sprinkler concept." In recognition of that statement, and in light of how hard we're all working on the adoption of the 2009 International Residential Code® intact, I'm including the U.S. Fire Administration's (USFA) Civilian Fire Fatality Notices for New England. There were nine deaths in one month to report.

- 2 dead - Occurred Saturday, 5/29 - East Boston, MA (Boston, MA): Two people are dead and two others were hurt after a fire in an East Boston three-decker. The cause of the fire is under investigation.
- 1 dead - Occurred Sunday, 6/6 - Dover, NH (Manchester, NH): A person was killed in an apartment fire. The cause of the fire is under investigation.
- 1 dead - Occurred Sunday, 6/6 - Ansonia, CT (New Haven, CT): A 66-year-old man was killed in a home fire. The cause of the fire is under investigation.
- 1 dead - Occurred Saturday, 6/12 - Wellesley, MA (Boston, MA): An 81-year-old woman was killed in a home fire. The cause of the fire is not known. The fire was extinguished by the victim's husband.
- 1 dead - Occurred Sunday, 6/13 - Stonington, ME (Bangor, ME): A 44-year-old man was killed in a home fire. The cause of the fire is under investigation.
- 1 dead - Occurred Monday, 6/14 - Taunton, MA (Taunton, MA): A 51-year-old woman was killed in a home fire. An investigation conducted by the Taunton Fire Department and State Fire Marshal concluded that the fire started while the woman was smoking in bed.
- 1 dead - Occurred Saturday, 6/19 - Meriden, CT (Hartford - New Haven, CT): A 22-year-old man was killed in a

home fire. The cause of the fire is under investigation.

- 1 dead - Occurred Wednesday, 6/23 - Stratham, NH (Concord, NH): A 56-year-old woman was killed in a home fire. The cause of the explosion and fire is under investigation.

Tim Travers is the NFSA Regional Manager for the New England region. He can be reached at [travers@nfsa.org](mailto:travers@nfsa.org) or 751 Washington Street, Whitman, MA 02382, Phone 845.661.5876, Fax 781.524.1026

## NEW YORK REGION

Dominick Kasmauskas, Regional Manager



### Ryebrook Enhances Fire Sprinklers for Modifications with Local Law

Ryebrook Village had passed Local Law 3-1997, which is a More Restrictive Local Standard (MRLS) approved by the New York State Codes Council regarding fire sprinkling of one- and two-family dwellings. This was later modified by Local Law 9-2005. In November 2009, the MRLS was enhanced again Local law 10-2009 and was recently approved by the New York State Codes Council also.

The enhancement is in the Village of Ryebrook Ordinances Chapter 212-3, Definitions targeting the definition of "Modifications". Also, in Chapter 212-5 for Existing Buildings covering pre-1984 structures that renovate or "modify" over the thresholds noted in 212-3.

The year 1984 is significant as this was the year of the first statewide New York State Building Code. It has been upheld in Third District Court in a landmark case years ago that stated local laws and certain state codes can be enforced on existing structures that were built pre-1984.

Chapter 212 in its entirety may be viewed at <http://ecode360.com/?custId=RY1192>.

Dominick Kasmauskas is the NFSA's Associate Director of Regional Operations-North and Regional Manager for the New York Region. He can be reached at [Kasmauskas@nfsa.org](mailto:Kasmauskas@nfsa.org) or 1436 Altamont Ave. Suite 147 Rotterdam, New York 12303, Phone 914.414.3337, Fax 518.836.0210.

## MID-ATLANTIC

Raymond W. Lonabaugh, Regional Manager



### Sprinkler Save at Widener University Dormitory in Talleyville, Delaware

The Talleyville Fire Company, assisted by neighboring fire companies, responded to an automatic fire alarm at 4:30 a.m. on June 22 at Widener University in Talleyville, Delaware. The fire was reported in a second floor dormitory room. Four ladder trucks, two rescues and ten engines responded. When firefighters arrived they found all the students had evacuated upon hearing the building's automatic fire alarm and also found the fire was contained by the building's automatic sprinkler system. All that was left for the fire companies to do was mop up. Total damage to the room of origin was \$1,000.00. The situation was under control in 20 minutes, allowing students to return to their rooms. The state fire marshal's office has determined careless smoking ignited combustibles in the room.

In the early 2000s, Delaware passed a law to require all dormitories, new and existing, to be sprinklered by 2009. The law also made "no interest" loan money available. This was done by the state prior to the national trend.

We thank Delaware State Assistant Fire Marshals Whitey Leicht and John W. Rudd for this report.

Raymond W. Lonabaugh is the NFSA Regional Manager for the Mid Atlantic Region. He can be reached at: [lonabaugh@nfsa.org](mailto:lonabaugh@nfsa.org) or P.O. Box 126, Ridley Park, Pennsylvania, 19078. Phone: 610.521.4768.

## SOUTHEAST REGION

Wayne Waggoner, Regional Manager



### Fire Sprinkler Saves in Columbia, Tennessee

On May 23, 2010 fire sprinkler systems were credited with saving a large amount of property and that the sprinkler system reduced the risk of injury or death

to Columbia residents and firefighters. Firefighters were alerted to a fire alarm activation indicating water flow at a multi-story apartment complex. Fire companies arrived on-scene and reported a slight amount of smoke visible in the apartment. They found there had been a cooking stove fire extinguished by the fire sprinkler system. No injuries were reported and there was only minor property damage associated with the fire or sprinkler activation.

Later the same day, firefighters were alerted to a fire alarm activation indicating water flow at a doctors' professional center in Columbia. Upon investigation it was found that the fire sprinkler system had activated in the riser room but there was no evidence of a fire. It was later determined that a heater had gotten the ceiling temperature in the riser room to a high enough level to activate the fire sprinkler. No fire was found, but the alarm activation as a result of the fire sprinkler may have averted a structure fire in the facility later that night. No injuries were reported and there was only minor property damage.

Wayne Waggoner is the NFSA Regional Manager for the Southeast Region. He can be reached at: [Waggoner@nfsa.org](mailto:Waggoner@nfsa.org) or PO Box 9, Andersonville, Tennessee 27705, Phone 865.755.2956, Fax 865.381.0597.

## FLORIDA REGION

David Bowman, Regional Manager



**FFSA (A Chapter of NFSA) Members Attend NICET Test Alternative Stakeholders Meeting**

Several members and staff of the Florida Fire Sprinkler Association attended a stakeholders meeting to provide input and suggestions into the process that is being developed to provide alternative testing for Inspector requirements, now being developed as the result of a change in the law from the 2010 Session.

The meeting was hosted at the Palm Beach Fire and Rescue Center and included industry professionals to help

make suggestions to aid in the development of the testing alternative. The Fire Sprinkler Academy, in Champaign, Illinois is the third party testing agency developing the process. Their goal is to develop high-quality inspectors for Florida. Their belief is that to successfully develop the process, the input of industry stakeholders is necessary.

It was stressed that the integrity of the exam process is the Academy's alone and the exams will not be developed or run

by an industry committee or created by anyone that could compromise or create a conflict of interest with The Academy. More information about the testing process will be given as it develops.

David Bowman is NFSA's Associate Director of Regional Operations-South and Regional Manager for the Florida Region. He can be reached at [Bowman@nfsa.org](mailto:Bowman@nfsa.org) or 6572 SE 173rd, Court Ocklawaha, Florida 32179, Phone 845.519.7648, Fax 661.455.3968.



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# REGIONAL ROUNDUP

>> CONTINUED FROM PAGE 39

## GREAT LAKES

Ron Brown, Regional Manager



GREAT LAKES REGION

### Indiana NFPA 13 Committee Established

Indiana Department of Home Land Security's (DHS) Fire Prevention Building Safety Commission has established a sub-committee to review and update the NFPA 13 Standard for the State. The state is currently working off of the state amended 1999 NFPA 13 Standard. Upon completion of the update process it is hoped that the state will be on an amended 2010 edition of NFPA 13. The sub-committee is chaired by Matt Mitchell, a Fire Prevention Building Safety Commission Member and Deputy Chief and Fire Marshal for the city of Noblesville.

If you want to receive information re-

garding the committee's activities and issues being given consideration you can be placed on the state's e-mail list by contacting Denise Fitzpatrick who will be heading up the NFPA 13 Committee for DHS. Email to: [dfitzpatrick@dhs.in.gov](mailto:dfitzpatrick@dhs.in.gov). Let her know you want to be informed as to committee activities. If you have concerns with or wish to see portions of the 2010 edition of the amended NFPA13 prior to adoption by the state you can contact Denise or a Committee Member to discuss your concerns. This is your opportunity to help develop a standard that is user friendly for contractors in the state of Indiana. Committee activity including meeting dates and agenda can be found at <http://www.in.gov/dhs/2494.htm>.

*Ron Brown is the NFSA Regional Manager for the Great Lakes Region. He can be reached at [Brown@nfsa.org](mailto:Brown@nfsa.org) or 1615 Cypress Spring Drive, Fort Wayne, Indiana 46814, Phone 845.661.6534; Fax 260.625.4478*

## ILLINOIS/ NORTH CENTRAL REGION

Bob Kleinheinz, Regional Manager



ILLINOIS/NORTH CENTRAL REGION

### Oak Creek, Wisconsin Records Another Apartment Sprinkler Save

On May 26, 2010, the Oak Creek Fire Department responded to a fire in a three-story apartment building of 40 units. The fire was on the third floor in an unoccupied apartment. The department was notified by an alarm company and a 911 caller reporting smoke. Fire started in a bedroom by an iron that was left on.

The fire was controlled by one sprinkler in the bedroom with hidden fire put out by the fire department.

### News from Around Illinois

Another Illinois Burn Prevention Association outing is over and even in tough times, NFSA members came through with wonderful support. After all was said and done nearly \$65,000 was raised. This money will be split between Loyola Hospital, the Illinois Fire Safety Alliance Camp - "I am Me" and the NFSA Educational Fund. Thanks to all of the committee members for their dedication and commitment to this event. Special thanks go out to everyone that donated money to the outing.

The summer legislative session is over and the budget was the main item for both the spring and summer session. Meetings are taking place with lobbyist Margaret Vaughn to discuss the issues that will be worked on for the fall session. One of the issues at the top of the list will be the contractor licensing act and the way that some companies have been awarded a license without having the proper people on staff. The new state fire marshal has given his full support as we seek answers to this issue. Work also continues on a possible CEU requirement to go along with the license. As a fair and equitable solution is sought, NFSA will provide updates as they become available.

*Bob Kleinheinz is the NFSA Regional Manager for the Illinois/North Central Region. He can be reached at [Kleinheinz@](mailto:Kleinheinz@)*

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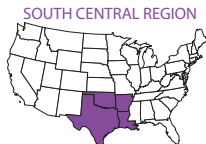
# REGIONAL ROUNDUP

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[nfsa.org](http://nfsa.org) or 509 Dawes Street, Libertyville, Illinois 60048, Phone 914.671.1975.

## SOUTH CENTRAL

Dave Bowman, Regional Manager



### Louisiana House Resolution Calls for Residential Sprinkler Study

Louisiana State Fire

Marshal H. Butch Browning has made a call for the second meeting for volunteer task force members to comply with State Representative Montoucet's House Concurrent Resolution #145. The measure requests the State Fire Marshal to study and report the feasibility to require fire sprinkler systems in residential homes. The findings will have to be reported to the Louisiana Legislature by February 1, 2012.

The National Fire Protection Association and the National Fire Sprinkler Association are assisting in the project.

David Bowman is the NFSA's Associate Director of Regional Operations-South. He can be reached at [Bowman@nfsa.org](mailto: Bowman@nfsa.org) or 6572 SE 173rd, Court Ocklawaha, Florida 32179, Phone 845.519.7648, Fax 661.455.3968.

## CENTRAL REGION

Chris Gaut, Regional Manager



### To Adopt Or Opt Out?

That is the question the St. Louis County Council Members

were faced with at June council meetings. The way it appears, money and back-door deals made by anti-sprinkler advocates will probably make the decision for County Council members to extend the Missouri Mandatory Opt Out until 2015. The St. Louis Fire Sprinkler Alliance along with the St. Louis Metropolitan Fire Marshals Association has worked hard presenting factual information to the council members but it all appeared to fall on deaf ears. Very frustrating and disappointing as you

can imagine.

So here is a brief history. Several months back the county council appointed building code review committees (BCRC) to review the family of 2009 International Codes. The appointed were building and fire officials from across the St. Louis County region. The BCRC for the 2009 IRC recommends that the residential fire sprinkler requirements stay in the code and be enforced after the Missouri Opt Out expired on December 31, 2011. The recommendation was questioned by the St. Louis County (STLCO) Building Code Commission and the proposal was sent back to the BCRC for another review. Again, for the second time, the IRC BCRC recommended the same actions to include the code requirement. After the second review and recommendation, the STLCO Building Code Commission approved the request and sent all of the 2009 code proposals to the St. Louis County Council to review. I am sorry to report that, without hesitation, the County Council members have blatantly disregarded the recommendations of the STLCO BCC and the BCRC.

Chris Gaut is the NFSA Regional Manager for the Central Region. He can be reached at [gaut@nfsa.org](mailto:gaut@nfsa.org) or NFSA Central Region Office, 237 E. Fifth St. STE 135, Eureka, MO 63025, Phone 845.803.6426, Fax 636.410.7700.

## GREAT PLAINS

Terry Phillips, Regional Manager



### Colorado Governor Signs HB 1241

House Bill 1241, a bill that prohibits a person from acting

or advertising as a sprinkler fitter unless that person has registered with the state fire suppression administrator, was signed by Governor Ritter on June 8, 2010 and will become effective on July 1, 2011.

In order to register, a person must pay a fee and must demonstrate the he or she has successfully completed a sprinkler fitter apprenticeship program; completed an application for reciprocity; performed at least 8,000 hours of documented practi-

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cal work experience on fire suppression systems; or otherwise demonstrate competency as a sprinkler fitter as determined by the administrator.

This bill also requires a sprinkler fitter to complete continuing education. The bill requires annual renewal of registration and the successful completion of a revised examination in the years that the fire and building codes are revised.

This bill is a good thing for Colorado and is a move in the right direction to assure those individuals installing fire sprinkler systems are qualified and have the proper training to install life safety systems in commercial and residential applications. They will be required to maintain their knowledge and training at levels current with the adopted codes and standards. This will benefit all individuals in the industry and the consumer.

## SOUTHWEST

Doyle Sutton, Regional Manager



### Fire Sprinkler Save at Las Vegas Adult Care Home

Two people suffered minor injuries after

fire forced residents of an adult care home west of downtown Las Vegas, Nevada to evacuate in the early morning hours.

Las Vegas Fire and Rescue responded at 8:33 a.m. to the home, just north of University Medical Center. Smoke and flames were showing on the outside of the home as firefighters arrived, fire department spokesman Tim Szymanski said.

Investigators said the fire appeared to have started outside the home and made its way into one room, where the fire was extinguished by the automatic fire sprinkler system.

The adult care home was evacuated and two people were treated at the scene for minor injuries, Szymanski said. No one was transported to a hospital. Damage was estimated at \$10,000

Doyle Sutton is the NFSA Regional Manager for the Southwest Region. He can be reached at: [Sutton@nfsa.org](mailto:Sutton@nfsa.org) or Phone 303.854.8677, Fax 303.496.7501.

## WEST REGION

Bruce Lecair, Regional Manager



### California PEX Regulations Vacated and Set Aside Effective July 1, 2010

The Alameda Superior Court has ordered the California Building Standards Commission to vacate and set aside its decision approving and adopting the regulations amending the California Buildings Standards Code to allow the use of PEX plastic plumbing pipe and any actions taken founded on those regulations until the State has fully complied with CEQA. Effective July 1, 2010, the PEX regulations contained in the California Plumbing Code (California Code of Regulations, title 24, part 5, section 604.11 and table 6-4) are repealed.

Based on the court's order, at its June 17, 2010 meeting, the Building Standards Commission repealed the amendments to the 2007 edition of the California Plumbing Code (California Code of Regulations, Title 24, Part 5) relating to PEX tubing. The provisions being repealed are California Code of Regulations, Title 24, Part 5, section 604.11 and Table 6-4, which were adopted in January 2009 and authorized the use of PEX water supply piping. Additionally, this action repeals the amendments added to California Code of Regulations, Title 24, Part 5, Table 6-4 that reflected findings in the Environmental Impact Report upon which CBSC relied in its rulemaking.

Additional information regarding the Commission's actions related to PEX is available on the Commission's website: <http://www.bsc.ca.gov/default.htm>. If you have additional questions regarding the Commission's actions related to PEX, please call Commission staff at 916-263-0916.

Bruce Lecair is the NFSA Regional Manager for the West Region. He can be reached at: [lecair@nfsa.org](mailto:lecair@nfsa.org) or Phone: 951.277.3517, Fax: 951.277.3199.

## PACIFIC NORTHWEST

Don Pamplin, Regional Manager



### Fireteam USA and Side-By-Side Burn in Alaska

FireTeam USA came to Anchorage, Alaska

on June 15-16 to deliver a 1-1/2 day workshop for those who want to be more fully informed about residential fire sprinkler protection and what can be successfully done to get a sprinkler ordinance passed, either statewide or at the local level.

Considering the distances to be travelled to get to Anchorage within the largest state in the union, the attendance was exceptional, especially at this time of year when the salmon are running in Alaska.

Post-workshop comments indicated that the attendees were very satisfied with the high quality of information presented in a format that provided successful strategies to help local jurisdictions be successful in their efforts to implement residential fire sprinkler protection in their communities. The workshop ended with a "side by side" live burn demonstration organized by the Anchorage Fire Department at their training facility. It was very convincing to the large contingent of television and print media who were there to see what fire sprinkler protection was all about.

The next FireTeam USA workshop in the Pacific Northwest will be in February, 2011 in Washington State. It will help the Washington Fire Sprinkler Coalition in their marketing plan to greatly expand the number of mandated sprinkler ordinances in that state at the local level.

Don Pamplin is the NFSA Regional Manager for the Pacific Northwest Region. He can be reached at [Pamplin@nfsa.org](mailto:Pamplin@nfsa.org) or 1436 Harrison Avenue Blaine, Washington 98230, Phone 380.332.1948, Fax 380.422.1752. ☎

### NFSA Invites You to Become a Friend of the Industry Member

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## **NFPA study: Nearly all structure fire deaths happen in home fires Home fires cause annual average of 2,840 civilian deaths**

According to a new study, Home Structure Fires, from the National Fire Protection Association (NFPA), home fires account for 92 percent of fire deaths that occur in structures. These fires cause an average of 2,840 civilian deaths each year.

During the period of 2003-2007, U.S. fire departments responded to approximately 380,000 home fires a year. These fires not only caused a large number of civilian deaths, they also caused an average of 13,160 reported civilian fire injuries and \$6.4 billion in direct property damage.

From 2003-2007, smoking materials caused the largest number of fire deaths. Heating equipment was the second leading cause of home fires and home fire deaths.

The leading cause of home structure fires, civilian fire injuries, and unreported fires continues to be cooking equipment. Forty-one percent of home fires started in the kitchen area and caused 15 percent of the home fire deaths and 36 percent of the reported fire injuries.

### **Other key findings include:**

Reported home fires peaked around dinner hours of 5:00 to 8:00 p.m.

Only 20 percent of the reported home fires occurred between 11:00 p.m. and 7:00 a.m., however 52 percent of home fire deaths resulted from fires reported during these hours.

Thirty percent of reported home structure fires and 38 percent of home fire deaths occurred in the quarter including December, January, and February.

Reported apartment fires were more likely to start in the kitchen than fires in one- and two-family homes.

The two leading items first ignited in home fire deaths are upholstered furniture in 21 percent of home fire deaths, followed by mattress and bedding in 13 percent of the deaths.

Properly installed and maintained fire protection can prevent most fire deaths. Forty percent of fatal home fire injuries

occurred in properties where no smoke alarms were present. Home fire sprinklers can also help, as the death rate per 1,000 reported home fires was 83 percent lower when wet pipe sprinkler systems were present, compared to reported home fires without automatic extinguishing equipment.

### **The NFPA offers these safety tips to prevent home structure fires from occurring:**

Stay in the kitchen while you are frying, grilling, or broiling food. If you leave the kitchen for even a short period of time, turn off the stove.

Keep anything that can catch fire - oven mitts, wooden utensils, food packaging, towels or curtains - away from your stovetop.

Keep anything that can burn, such as paper, bedding, or furniture, at least three feet away from heating equipment and have a three-foot "kid-free zone" around stoves, open fires and space heaters.

Remember to turn off portable heaters when leaving the room or going to bed.

If you smoke, smoke outside using a deep, sturdy ashtray. Remember to make sure butts and ashes are out, and dousing water or sand on them is the best way to do that.

Keep matches and lighters up high, out of children's sight and reach, preferably in a locked cabinet.

Install smoke alarms inside every bedroom, outside each sleeping area and on every level of the home, including the basement. Larger homes may require additional smoke alarms to provide a minimum level of protection.

For best protection, install combination ionization/photoelectric smoke alarms or both photoelectric and ionization alarms. Photoelectric alarms are more responsive to smoldering flames and ionization alarms are more responsive to flaming fires.

Smoke alarms with non-replaceable batteries are designed to remain effective for 10 years. If the alarm chirps, warning that the battery is low, replace the entire smoke alarm right away. For smoke alarms with any other type of battery, replace batteries at least once a year. If the alarm chirps, replace only the battery.

Test smoke alarms at least once a month

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## ■ Western States Fire Protection Donates and Installs Residential Fire Sprinkler System in Habitat for Humanity Home

Maryville, Missouri's newest Habitat for Humanity house is completed later this year it will boast one feature possessed by few, if any, other single-family residences in the area – a state-of-the-art fire suppression system.

Workmen from the Western States Fire Protection Co./National Fire Suppression Division installed the heat-activated sprinklers at the East Second Street home last week.

The company donated both materials and labor for the project, which was the brainchild of Phil Rickabaugh, director of the Maryville Public Safety fire division, and Municipal Code Enforcement Officer James Wiederholt, who sits on the local Habitat board.

Rickabaugh and Wiederholt made a pitch for the sprinkler system to Chris Gaut, NFSA Central Regional Manager, and Gaut contacted Western States to make the in-kind donation, believed to be the first of its kind in western Missouri.

Wiederholt said he hopes the Habitat installation will convince local residents thinking about building a new home to consider incorporating a residential fire sprinkler system into their plans.

## ■ Tyco International Celebrates Opening of New Facility in Lithia Springs, Georgia

Tyco International celebrated the grand opening of a new distribution facility in Lithia Springs, Georgia. The 205,000 square foot facility employs 125 people and serves as a hub for distributing the company's fire detection, fire suppression and electronic security products to customers across the United States and around the world.

The new facility located at 2600 West Point Drive, provides Tyco with a strategic distribution location in the Atlanta area. The facility features state-of-the-art delivery capabilities and is a key part of the company's global distribution network. Tyco employs more than 900 people at 16 locations in Georgia. More information can be found at [www.tyco.com](http://www.tyco.com).

## ■ SimplexGrinnell Announces Mentor-Protégé Agreement With Emergency Planning Management, Inc.

SimplexGrinnell has entered into an agreement under the U.S. General Services Administration's Mentor-Protégé Program with Emergency Planning Management, Inc., a certified 8(a) service disabled, veteran-owned general contractor that specializes in fire, life safety and critical infrastructure protection.

The Mentor-Protégé Program enhances the capability of 8(a) participants to compete successfully for federal government contracts. Mentors provide technical and management assistance, financial assistance, subcontract support, and assistance in performing prime contracts by working with 8(a) firms.

From an overall perspective, the program is designed to:

- Improve the performance of contracts and subcontracts
- Facilitate the establishment of long-term business relationships between large prime contractors and small business subcontractors
- Strengthen subcontracting opportunities and foster complementary capabilities to meet increasing government demands for quality, cost-effective solutions

*For additional information, visit [www.simplexgrinnell.com](http://www.simplexgrinnell.com).*

## ■ New Product Introduction from CB Marketing: Legend MAX 13D Residential Pump

CBM has announced the release of Legend 13D MAX, the Legend's big brother. The Legend Max has the capacity to handle duplexes or single family castles. The Legend is available from ¾ HP to 3 HP while the Legend Max is available in 5 HP and 7.5 HP configurations. The Legends are available from 20 to 70 GPM and 25 to 75 PSI both models meet or exceed all of the requirements of NFPA 13D.

Legend MAX embodies all the necessary characteristics of the Legend, most notably, 100% stainless steel pump components coupled to a high quality motor. The Legend MAX comes mounted and pre wired to a base with a motor starter with adjustable overload protection.

The Legend and Legend Max are built with non-overloading motors so they do not exceed the HP service factor rating at any point on the curve. Legend motors are unidirectional; meaning they cannot be wired in reverse rotation. In addition, the Legend includes a standard pre-charged/re-chargeable expansion tank to minimize water hammer and cycling, which can irritate homeowners and create costly return trips for the sprinkler contractor.

The Legend & the Legend MAX are completely pre-assembled, prewired, pre-tested and ready to install.

*For more information, please call Brett Scharpenter, Vice President, at 708.202.0033, or submit a web inquiry via [www.cbmarketing.com](http://www.cbmarketing.com).*

## ■ Viking's New Residential Fire Sprinkler Has Largest K Factor Available with a 1/2" Inch Thread

Viking has added a new 5.8 (84) K factor pendent sprinkler to its leading Freedom® line of residential fire sprinkler products. The new VK472 is cULus listed for up to 20 x 20 ft (6.1 x 6.1 m) coverage areas.

With this new product, Viking's Freedom® line now includes a 5.8 (84) K factor residential sprinkler in three distinct models; recessed pendent (VK472), horizontal sidewall (VK460), and flat plate concealed pendent (VK474) sprinkler. The advantages of a 5.8 (84) K factor are two-fold. First, a larger K factor sprinkler can deliver the higher water densities required for an NFPA 13 residential system (0.1 gpm/ft<sup>2</sup>) at lower starting pressures. Second, the ½ inch NPT thread size allows for installation with a less expensive ½ inch CPVC head adapter, rather than a ¾ inch adapter. This can significantly lower the total installed cost of a sprinkler system, particularly in a high-rise residential building.

In addition to superior performance, the Freedom® line of 5.8 (84) K factor sprinklers were designed to provide for enhanced aesthetics. The VK474 flat plate concealed sprinkler is available with three cover plate options: standard round, large diameter, and square. The standard cover plate has the smallest diameter available in the industry for a less noticeable installed appearance. Additionally, Viking offers a

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UL listed custom finish program for both cover plates and frame-style sprinklers. With this program, Viking can apply virtually any brand of paint while fully retaining the product's UL listing.

For more information on Viking's complete line of quality fire protection products and services, please visit [www.vikinggroupinc.com](http://www.vikinggroupinc.com) or call 800.968.9501.

#### ■ NFSA Member Contractor Celebrates 35th Year.

Morristown Automatic Sprinkler Company, Inc. (MASCo) celebrates its 35th anniversary this year. The company was founded by Edwin W. Davis and Walden Kitts in Morristown, Tennessee in 1975. The two-man operation quickly grew and was moved to Knoxville, Tennessee in 1976 to better serve its customers. The company is family-owned and operated, with over 50 employees and annual revenues in excess of \$10 million. MASCo is a full service sprinkler contractor and is one of the leading fire protection contractors in the East Tennessee area.

#### ■ Tyco Fire Suppression & Building Products Introduces Dry-Type Residential Sprinklers

Tyco Fire Suppression & Building Product introduces the new Series LFII Dry-Type Residential Sprinklers.

The Series LFII Dry-Type Residential Sprinklers include the 4.9 K-factor Recessed Pendent, 4.9 K-factor Domed Concealed Pendent, and 4.4 K-factor Horizontal Sidewall and Recessed Horizontal Sidewall. The sprinklers are UL Listed and designed for use in residential occupancies per NFPA 13D, 13R, and 13. Each sprinkler has undergone special testing to meet UL1626 test criteria for dry pipe and preaction systems. These sprinklers can be installed in basements, garages, or on balconies of homes, apartments, dormitories, or hotels.

The dry-type sprinklers have a temperature rating of 155°F (68°C) and are available in natural brass, white polyester-coated, and chrome-plated finishes. The cover plate assembly, of the domed concealed model, has a slightly lower temperature rating of 139°F (59°C) and is available in chrome, signal white, pure

white, and custom finishes.

To learn more about the Series LFII Dry-Type Residential Sprinklers, contact your local Tyco Fire Suppression & Building Products territory manager or visit [www.tyco-fire.com](http://www.tyco-fire.com).

#### ■ TOLCO Announces New Fig. 828 Universal Structural Sway Brace Attachment

TOLCO introduces Fig. 828 Universal Sway Brace Attachment that permits a secure, non-friction connection without drilling or welding to structural members.

The Fig. 828's unique patented design allows for attachment of seismic bracing to wide flange beams, including I-beam, open web, welded steel trusses and other structures up to 7/8-inch thick, with a maximum design load of 2,015 lbs. both along and across the beam. The one size, stable three-point attachment fits any beam width. TOLCO engineered break-off bolts allow for visual verification of proper installation torque.

Fig. 828 Universal Sway Brace Attachment is constructed of carbon steel and is available in a plain or electro-galvanized finish, and accommodates all TOLCO® Fig. 900 Series seismic structural bracing assemblies.

Complete requirement specifications and installation instructions for the new Fig. 828 Universal Sway Brace Attachment are now included on TOLBrace™ Fire 7.0 software, available for download at [www.tolbrace.com](http://www.tolbrace.com).

#### ■ Uponor First to Offer Lead-free Brass Fire Sprinkler Adapter

Easier to install and more cost-effective compared with traditional stainless-steel fire sprinkler adapters, the ProPEX® Lead-free Brass Fire Sprinkler Adapter from Uponor is an industry-first. Made of lead-free brass to effectively meet state lead-level legislation and conform to NSF Annex G for lead-free plumbing requirements, the new adapter provides easier installation on a variety of mounting surfaces.

For more information on this new product, go to: [http://uponor.oreillydepalma.com/2010/first\\_lead\\_free\\_brass\\_fire\\_sprinkler.shtml](http://uponor.oreillydepalma.com/2010/first_lead_free_brass_fire_sprinkler.shtml)

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# SPRINKLING OF NEWS

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## ■ Viking Announces National Partnership with Toll Brothers

Viking Group is proud to announce that Toll Brothers has selected Viking as its partner to provide fire suppression materials throughout the USA. The new agreement, which is effective immediately, includes VIKING sprinklers, CPVC pipe, and related products for residential fire sprinkler systems.

With this new partnership, Viking SupplyNet will supply Toll Brothers' network of preferred installers with fire protection products from the company's integrated distribution network, which includes over 30 U.S. locations. In addition to supporting Toll Brothers' product needs, Viking will provide technical information, training programs, marketing initiatives, and model home support.

## ■ Viking Introduces the First Ever "Flat Plate Concealed" Residential Sidewall Sprinkler

Viking Corporation has announced the availability of a new 4.0 (58) K-factor residential, flat plate concealed, horizontal sidewall sprinkler. The "Freedom®" VK480 sprinkler represents a significant advancement in residential fire sprinkler technology. For the first time, the installation advantages of a horizontal sidewall sprinkler are available fully concealed behind a flat cover plate in a residential application.

One method of protecting a residential sprinkler system from freezing conditions is to install the piping network in the interior wall spaces. The VK480 provides this installation option with a true, flat plate, concealed appearance. Using the VK480's special installation pipe guide, the new sprinkler easily installs into a

standard 2 x 4" stud wall. The pipe guide, which is shipped standard with the sprinkler at no additional charge, ensures the proper location of the sprinkler to allow for 1/4" (6 mm) adjustment of the cover plate. Additionally, to make certain the sprinkler is correctly oriented with the ceiling, both the sprinkler body and the installation wrench are marked "TOP." A detailed animation of the VK480 installation process is available on the Viking web site at [www.vikinggroupinc.com/newproducts](http://www.vikinggroupinc.com/newproducts).

This new patent-pending sprinkler is cULus listed for up to 16 x 18 ft (4.9 x 5.5 m) coverage areas. The VK480 has a temperature rating of 165°F (74°C) with a 135°F (57°C) cover plate. The cover plate's standard finish is white. Through Viking's industry-leading custom paint program, Viking can apply virtually any brand and type of paint to the cover plate as well. ①

# PEOPLE IN THE NEWS

Globe Fire Sprinkler Corporation Appoints New Regional Manager for Mountain & South Central Regions

**Mr. Larry J. Parsons, Sr.** is the newest member of the Globe Fire Sprinkler Corporation sales team. As of June 7, he is the Regional Manager of the Mountain & South Central Regions, which include Arkansas, Kansas, Colorado, Louisiana, Missouri, Nebraska, Oklahoma, and Texas.

Mr. Parsons has extensive knowledge of fire protection systems and looks forward to servicing the fire protection needs of Globe's Valued Customers in the Mountain & South Central Regions. ①

# NFPA NEWS

>> CONTINUED FROM PAGE 43

by pushing the test button.

Replace all smoke alarms, including alarms that use ten year batteries and hard-wired alarms, when they are ten years old or sooner if they do not respond properly when tested.

Smoke alarm accessories are available for people who are hard of hearing. These accessories activate from the sound of traditional smoke alarms and produce a

complex low frequency alarm signal, more effective at waking those with mild to severe hearing loss.

Smoke alarms and accessories are available for people who are deaf. Smoke alarms and accessories that use high intensity strobe lights and accessories that produce a tactile (vibration) signal are now required for those with profound hearing loss.

If you are building or remodeling your home, consider installing home fire sprinklers.

For more safety tips, please visit [www.nfpa.org/safetytips](http://www.nfpa.org/safetytips). ①

## NFSA ADDRESS CHANGE

Due to changes at the local post office, NFSA is **discontinuing the use of the P.O. boxes for NFSA and IP mailings** (Box 1000 and Box 448). Mail will be delivered directly to NFSA at 40 Jon Barrett Road. As such, please discontinue the use of the P.O. boxes in all correspondence, payments, billings et al. sent to NFSA headquarters in New York. The post office will forward from the P.O. boxes for a while, but at some point in 2009 will stop honoring the forwarding instructions.



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[www.nfsaacademy.org](http://www.nfsaacademy.org)



#### **TO JOHN VINIELLO:**

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Dear John,

It could probably go without saying that I really appreciated receiving the Leadership in Public Policy Award from the NFSA. But, it certainly doesn't hurt saying it again, does it? I really do feel that this award verified that my career long working relationship of working with your industry was an appropriate decision on my part many decades ago.

In my lifetime, I have received numerous awards, but I can safely say that what makes this one special to me is that it reflects well on the partnership between the public and private sector when it comes to doing the right thing. Being up on the stage with Don Pamplin and sharing the honor with the winners of the other awards, gave me a true sense of satisfaction and humility at the same time. Inasmuch as I consider our mutual interests in fire and life safety a lifelong endeavor, I look forward to future opportunities to continue to make a difference.

Thank you again for the honor. I hope to continue to deserve your confidence as we move forward to the next generation of public safety advocates.

Ronny J. Coleman

#### **TO RICH RAY (REGARDING THE NFSA ANNUAL SEMINAR):**

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Hello Rich:

I would like to thank you for facilitating our sessions. I appreciate your efforts to keep things positive and focused in a mutually beneficial manner. I felt that it was a very positive event and certainly solidified our perspective that many in the industry are interested in alternatives. I'm hoping to find more time to become more involved with NFSA locally and nationally as the opportunities arise. This event, the networking, enthusiasm and hospitality reinforced my opinion of the reputation and quality of the NFSA, so again, thanks.

Eric Skare  
Product Manager  
Uponor Fire Safety Systems

#### **TO RUSS FLEMING:**

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Dear Russ,

Your letter of congratulations for being voted into the Fire Sprinkler Hall of Fame was certainly unexpected but very much appreciated. My recollection was that this honor used to be presented to deceased members of our industry; well obviously conditions have changed, as I am still alive and kicking.

When people ask me what I did in my working life, I am always pleased to say that I worked in an industry devoted to saving lives and property by installing fire sprinkler protection. It is amazing over the 50 year span of my working life the recognition of the value of fire sprinkler protection grew by leaps and bounds.

This recognition was greatly accomplished by the drive and determination of the dedicated people of the National Fire Sprinkler Association, of which I was always proud to be a part.

Unfortunately, I will not be able to attend the April 15th seminar in Chicago but will cherish the honor being bestowed on me.

Sincerely your friend,

Ray Kenz

#### **TO JOANNE GENADIO:**

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Hi Joanne

I loved your article on the Canadian Forces Station in Alert. A very interesting read.

I was wondering if it may be possible to get one of your sprinkler man posters. This poster would go well with our "hero wall" which is a wall we use to post up residential sprinkler success stories from our area.

Thanks and keep up the great work.

Dave Killey  
Fire Busters Inc  
Delta, British Columbia





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