Stay or Go?
The debate about delayed evacuation in schools
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BOSCH
ON JULY 29, the California Building Standards Commission (CBSC) adopted NFPA 5000™, Building Construction and Safety Code™, and NFPA 1, Uniform Fire Code™, as the model building and fire codes for the state.

This decision, after almost a year of deliberation, should quiet those critics who say NFPA should stay out of the building code business and stick to the full range of perspectives and experience to the decision-making table.

Let me be clear. The enforcement community is an essential part of our code-development process, providing both an important perspective on safety and providing invaluable insight into the practical concerns of code usability. Bringing together the contributions of the enforcement community, as well as those of engineering and design experts, academics, manufacturers, installers, consumers, the insurance industry and others in a consensus process that prevents a single interest from dominating, guarantees that the final products are codes and standards that best protect the public.

During the debate, California authorities raised another major issue: the importance of a code developer's ability to support its code's implementation and use. Developing codes is only part of the process, and code adoption is just the beginning of NFPA's relationship with a jurisdiction. In California, we're already working with state officials on amendments and tailoring training and certification programs to meet the state's needs.

While California has used NFPA codes and standards, including the National Electrical Code®, for generations, our relationship with the state will grow exponentially with the implementation of the building code, and we're eager to meet the challenges this expanded role presents.

When our Board of Directors approved the development of NFPA 5000 nearly four years ago, we knew that it would be difficult to develop the code and achieve its adoption in so short a time. We've come a long way in four years, and we're dedicated to keeping up the momentum. With the implementation of NFPA 5000 in California alone, one in nine Americans will live in a jurisdiction in which NFPA 5000 is the operative building code. We're confident that widespread use of this effective and high quality building code will powerfully advance our 107-year-long mission of saving lives and protecting property.

As we move ahead, we'll always remember why NFPA has such a reputation for quality in protecting lives and property. It's because we bring the right people together in the right process to produce codes and standards we support during their implementation and their use. It's the commitment of NFPA and its dedicated participants to safety and to the fairness of our process that led California to choose us to provide its building code and a fire code, and it's why NFPA has been the leader in safety for so many years.

James M. Shannon
President and Chief Executive Officer
NFPA
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AN ADDED TIP
I read with interest the “Outreach” column in the July/August 2003 issue by Meri-K Appy about home security, and I have some additional thoughts on the subject.

Meri-K covered many good ideas for things to do while you’re gone and pointed out that 60 percent of the break-ins occur during the daytime. In fact, the figure is likely higher than 60 percent. But the fact that a vast majority of the break-ins do occur during the day should tell us all something. Burglars assume that most people are gone during the daytime. As someone whose home has been broken into multiple times, I’ve learned some very easy and important things a homeowner can do before they go on vacation or leave the home.

Police will tell you that burglars don’t normally want to run into homeowners during their break-ins. So, burglars will pattern people to determine when they are home. One very simple thing you can do regards your garage door.

Alternating how you leave your garage door (i.e., open or closed) can confuse a potential burglar who is trying to pattern you. For instance, if you come home every day at roughly the same time, and you park your car in the garage, and leave the door open, the burglar can easily tell when you are there.

The suggestion I have is when you are home, don’t always leave everything “opened up” to the world. Weekends are good times to do this. Open the doors first thing in the morning, then button them up again. Do this at alternating times on different days, and it will be very difficult to tell when you’re there. If you have more than one vehicle, leave one out in the driveway sometimes with the garage door open, even if you’re gone. After all, honest people won’t mess with your stuff anyway, and dishonest people normally won’t bother you if they think you’re home! Just a simple tip that I learned from our local law enforcement due to our own unfortunate instances.

Daniel F. Dykstra
Michigan Department of Consumer and Industry Services
Bureau of Construction Codes and Fire Safety

POSITIVE IMPACT
As a technical committee member, I often wonder what the impact on society is of the NFPA committee work. The article “Sound Asleep” in the July/August 2003 issue by Meri-K Appy about home security provided a number of valuable tips for ensuring the safety of our homes.
For durability, quality and cost-efficiency, today's best fire sprinkler contractors install BlazeMaster® CPVC pipe and fittings. And with good reason. Besides being quicker, easier and more affordable to install, it also meets all major model codes, is listed by UL, and is Factory Mutual® approved. And BlazeMaster CPVC is backed by Noveon's national network of field representatives to provide on-the-job assistance.

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Nage Damas, President and CEO 
Western States Fire Protection
issue reminded me of what it is all about.

On behalf of my five nieces and nephews, I would like to thank you for reminding me of the importance of the work that I do.

Matt Roy
Armstrong Pumps
Toronto, Canada

THE STACK EFFECT
In the March/April 2003 "Structural Ops" column, staging at high-rise fires is discussed.

I would like to add the following. Under summer stack-effect conditions, for example, with a significant difference between the inside and outside temperature, several floors below the fare floor could be so heavily contaminated by smoke as to be unavailable to those not wearing SCBA.

Since stack effect is dependent on the building being an air-tight tube, possibly the best way to cope with this problem would be to completely ventilate the staging floor. This would require the removal of all the sealed windows. Smashing the glass isn’t practical due to the hazard to those below and the cutting of hose lines feeding fire department connections, as happened at the Meridian Place fire in Philadelphia. The FDNY has developed procedures for pulling the glass inward and no doubt would be pleased to share them.

While on the subject of stack effect, we should note that winter stack effect, where the difference between the indoor and outdoor temperature can exceed 70°F (21°C), can deliver substantial quantities of smoke to upper floors, sometimes bypassing intermediate floors. This generates the caution that all resources shouldn’t be concentrated towards the upper floors if only smoke but no fire is reported. The fire may well be much lower, even in a sub-basement. Dispatchers should be trained to ask callers, “Do you see fire?”

There was a smoky fire some years ago in the sub-basement of the tower in Times Square...from which the ball descends on New Year’s Eve. Two fire-fighters were ordered to check upper floors. They left their SCBA at the lobby. They were found on an upper floor dead of carbon monoxide (CO) poisoning. The elevator operator was also found dead in the car. Invisible, odorless CO can travel great distances, while the particulate matter can be deposited on surfaces.

Francis L. (Frank) Brannigan
SFPE Fellow

EDITOR’S NOTE
A complete technical discussion of stack effect can be found on pages 117 to 120 in the 19th edition of the NFPA Fire Protection Handbook.
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Exit Drills in the Home

A MAJOR THEME of Fire Prevention Week is home escape plans can save lives when a home fire strikes. While this may sound like common life-safety sense, actually developing a plan and practicing it remains an elusive goal for many American families.

Statistics dramatically illustrate the reality of a home fire situation. According to NFPA’s “Fire Loss in the United States” report, there were 2,670 home fire deaths in the United States in 2002.

According to NFPA’s 1999 “Home Fire Escape Survey,” only 25 percent of those surveyed actually developed and practiced a home fire escape plan to ensure they could escape quickly and safely.

Among the reasons given for not having or practicing a home escape plan are “Never thought about it,” “No need to,” “Too lazy,” and “Don’t have the time.”

Still, 25 percent who had practiced a home fire escape plan is a big improvement over the 16 percent in 1997. The survey also noted that those people with children at home are more likely to have practiced their escape plan than those without children in the home.

NFPA points out that recent media reports have questioned whether kids wake up at the sound of a smoke alarm so practice your home fire escape plan twice a year, making the drill as realistic as possible.

If they fail to awaken, make sure that someone is assigned to wake them up as part of the drill and in a real emergency.

The survey also indicated that if a smoke alarm went off in the middle of the night, only 39 percent said they would leave the house immediately while 56 percent would investigate to find the source of the alarm.

To view the Home Fire Escape Survey findings, go to www.nfpa.org/Research/NFPAFactSheets/FireEscapeSurvey/FireEscapeSurvey.asp. To download a copy of the report “Fire Loss in the United States” go to www.nfpa.org/Research/OneStopDataShop/Reports/MemberOnly/MemberOnly.asp.
A fast-moving fire fanned by winds of 15 miles (24 kilometers) per hour heavily damaged a large apartment complex that was in various stages of completion. Five of the 15 buildings were destroyed. See page 18.

RESIDENTIAL

Three die when smoldering fire ignites
CALIFORNIA

An 81-year-old grandmother and her two grandchildren, ages three and one, were killed by a house fire that smoldered for some time before bursting into flame.

The single-family, wood-framed house had a stucco exterior and a concrete tile roof. There were smoke alarms on each floor of the two-story structure, which had an area of approximately 1,500 square feet (139 square meters), but it isn't known if they operated.

The children's mother had left them in the care of their grandmother when she went to meet their father at a restaurant. When she left the house, she switched on the light in a curio cabinet in the first-floor den. As she did, she heard a popping sound, smelled smoke, and noticed that the lights in the room dimmed briefly, but she couldn't locate the source of the problem. She attributed the odor of smoke to a recent brush fire in the area and left the house.

At the restaurant, the father said he received a telephone call from someone at the house, but the call was disconnected. Several calls back to the house went unanswered, so the couple returned home to see if something was wrong. When they opened the garage door, smoke and heat prevented entry and prompted the mother to call 911 from a neighbor's house at 7:30 p.m.

The first fire engine arrived at the scene within five minutes and an officer and two firefighters entered the house through the garage. Inside, they were confronted with intense heat and heavy black smoke. They discovered the fire in a corner of the den and extinguished it, while other firefighters searched for the grandmother and children. The grandmother, who suffered burns and smoke inhalation, was pronounced dead at the scene. The two children were taken to the hospital, where they were later pronounced dead of smoke inhalation. The one-year-old also sustained burn injuries.

Investigators discovered the point of origin in a freestanding wood-and-glass curio cabinet that had halogen lighting built into it. Based on the description provided of a "popping sound" and dimming of lights in the room containing the cabinet, it's apparent that some type of failure occurred in the cord-and-plug connection. The circuit breaker supplying the receptacle, didn't trip.

Firefighters found a cordless telephone near the body of the grandmother. She had not called 911 herself.

Plastic, child-resistant door-knob covers installed on all the doors were difficult for firefighters to remove. One such cover was found on the floor near the front door and
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near the grandmother's body. Property damage to the house, valued at $475,000, was estimated at $35,000. Damage to its contents, valued at $80,000, was estimated at $60,000.

**House fire kills three children**

**ILLINOIS**

Three boys, ages four, two, and one, died in a mid-morning fire of undetermined origin that started on the sofa in the first-floor living room of a single-family home.

The 2 1/2-story, wood-framed house was 40 feet long (12 meters) and 20 feet (6 meters) wide. Its exterior walls were covered with vinyl and asphalt siding, and the roof was asphalt shingled. The occupants told firefighters that smoke alarms were located in the basement and on the first floor and that one, died in a mid-morning fire of undetermined origin that started on the sofa in the first-floor living room of a single-family home.

The building, valued at about $50,000, sustained losses estimated at $20,000. Damage to the contents, valued at $10,000, was estimated at $10,000.

**Fire sprinkler controls apartment building fire**

**NEW JERSEY**

A single fire sprinkler controlled an incendiary fire in a trash room on the third floor of a six-story apartment building, alerting the fire department, which responded within a minute of the alarm.

The steel-framed apartment building had concrete block walls and a brick facade. Hardwired and interconnected heat and smoke alarms were monitored by a central station, and an automatic wet-pipe fire sprinkler system provided complete coverage. The fire began when someone intentionally ignited seasonal decorations in the trash room using an undetermined heat source.

As police and firefighters evacuated the residents, firefighters found that a single fire sprinkler had confined the fire to the trash room and extinguished it.

No one was injured, and damage to the building's contents was limited to $500.

**Fire sprinkler extinguishes frat house fire**

**MAINE**

A shirt carelessly thrown over a reading lamp in a college fraternity house study room ignited, and the resulting fire spread to other combustibles in the room until the heat activated a fire sprinkler, which extinguished the blaze. The room's occupants and most other students evacuated the fraternity house when the fire alarm went off.

The three-story, wood-framed fraternity house, which was 52 feet (16 meters) long and 39 feet (12 meters) wide, had an asphalt roof. Over the years, it had been renovated, and a complete-coverage smoke and fire detection system had been installed, along with a complete-coverage automatic dry-pipe sprinkler system.

The fire began in a third-floor suite made up of a bedroom and a study room, on the floor of which was a mattress. At about 1 a.m., a student who lived in the suite decided to stay awake to study and toss off his shirt, which landed on a desk lamp on the floor next to the mattress. About two hours later, the shirt caught fire.

As the fire spread, it activated the single fire sprinkler and woke the student in the study room and his roommate in the bedroom. The two quickly left the suite and alerted other third-floor residents.

The water flow and smoke detectors on the third floor tripped the fire alarm, alerting the fire department at 3:17 a.m. Firefighters arrived within five minutes, and one crew advanced a single hose line into the house, where they discovered that the sprinkler had extinguished the fire. Other crews conducted a primary search and evacuated a few students still sleeping on the second floor.

The property, valued at $100,600, sustained $20,000 in damage. Its contents, valued at $100,000, sustained a $3,000 loss. There were no injuries.

**SPECIAL**

Fire destroys apartments under construction
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Look no further if you want quality and reliability in your fire application. Call, fax or e-mail us today.
CALIFORNIA
A fast-moving fire fanned by winds of 15 miles (24 kilometers) per hour heavily damaged a large apartment complex that was in various stages of completion. Five of the 15 buildings were destroyed, as were several vehicles, stored lumber, and a construction trailer. High ambient temperatures and low humidity contributed to the fire's spread.

The three-story, wood-framed apartment buildings were of varying sizes and, when completed, would have had 16 to 24 units each. None of the five buildings that were destroyed had interior finish, and one only had been sided. In three of the buildings, the decking for the lightweight wood-truss roofs had been installed. Although the buildings were designed to have fire sprinklers, only one system had been partially installed, but it wasn't in operation at the time of the fire. There was no fire detection system.

Shortly after the fire department received a 911 call at 3:51 p.m., flames shot through the roof of the building, which had already been framed, sheathed with exterior siding, and covered with a roof deck. About nine minutes after the alarm, the three-story, 33,600-square-foot (3,121-square-meter) structure was totally involved, and the fire was spreading to four more buildings. Forty-five minutes after the first-arriving fire units converged on the scene, all five buildings had burned to the ground.

The cause of the blaze is undetermined.

The buildings, valued at $35 million, sustained an estimated $7 million in property damage. Six firefighters were taken to the hospital, four suffering from heat- and exhaustion-related injuries. The fifth injured his knee, and the sixth suffered minor burns.

MANUFACTURING
Employee sets fire in foam plant
CALIFORNIA
The day after he was fired from his job, an employee of a polystyrene-manufacturing plant started a fire in cardboard containers containing raw polystyrene pellets stored outside. Fortunately, the building's fire sprinklers operated and, along with firefighters' hose streams, prevented the fast-moving fire from spreading into the plant or to other exposures. The single-story facility, which was 100 feet (30 meters) long and 100 feet (30 meters) wide, was constructed of tilt-up concrete panels with a wooden roof covered in asphalt. It was protected by a wet-pipe fire sprinkler system that had been installed inside the building and under a canopy on the exterior walls.

The disgruntled employee ignited the cardboard containers, and flames quickly spread to finished polystyrene insulating foam that had also been stored outside for shipping. Radiant heat from the burning material threatened the manufacturing plant and other exposures, but eight fire sprinklers under the building's canopy protected the building and prevented the fire from spreading inside.

The structure, valued at $2 million, sustained losses estimated at $100,000. It was estimated that the fire also destroyed $2 million worth of raw and finished product. There were no injuries.

Juveniles ignite vacant manufacturing plant
ALABAMA
A fire in a vacant plant in which cotton gins had once been manufactured smoldered undetected for nearly six hours until it burst into flame and reached flashover. The three-story plant, which had been vacant for years, was part of a complex of interconnected buildings of a heavy, timber construction. It was 160 feet (49 meters) long and 60 feet (18 meters) wide, with heavy wooden structural framing, wood plank floors and roof, and brick walls. The plant had no fire detection system and its dry-pipe fire sprinkler system was no longer operational.

A police officer on patrol discovered the fire and radioed in the alarm at 10:59 p.m. Fire units responded within a minute, but flashover had already occurred in the building of origin, and the fire was spreading to another building, which became fully involved 20 to 30 minutes after firefighters arrived.

Investigators determined that juveniles ignited cotton cloth on the first floor of the plant near a corridor that connected it with another large building and left the cloth smoldering on the floor. The size of the two buildings concealed the smoke and flames until the fire reached flashover.

Direct property damage to the uninsured property was estimated at more than $1 million.

Explosion damages distillery
KANSAS
Two distillery employees and a construction worker were injured and several buildings damaged in a vapor chamber explosion that occurred when alcohol vapors coming from an open manhole ignited.

The blast dislodged piping containing alcohol, which then ignited in several small fires in the building of origin.

The steel-framed building, which was 70 feet (21 meters)
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IntelliKnight 5808
127-Point Addressable FACP
The IntelliKnight 5808 proves that addressable systems don't have to be too big or expensive to be cost-effective for mid-size jobs. With 127 addressable points and a built-in digital communicator, it gives you all the functionality of addressable technology at the price point of a conventional panel.

Now Available!
New IntelliKnight 5700
50-Point Addressable FACP
The new IntelliKnight 5700 combines the revolutionary performance of addressable sensing technology with a built-in digital communicator, distributed power, drift compensation and an easy-to-use interface. With 50 addressable points, it's the ideal FACP for smaller jobs.

Silent Knight
Product Guide
From addressable and conventional FACP's to digital communicators and accessories, Silent Knight's full line of fire system solutions is the most innovative in the industry. For a FREE product guide, call 1-800-446-6444 or visit www.silentknight.com.

Silent Knight has the Addressable Advantage
Silent Knight's full line of addressable fire systems gives YOU the advantage. With a line of addressable fire systems that includes the 508-point 5820XL, the 127-point 5808 and the all new 50-point 5700 you'll find a panel that's just right for every installation. The entire IntelliKnight line offers advanced features that make operation, installation and maintenance easy. That's the addressable advantage!

For a FREE product guide, call 1-800-446-6444 or visit www.silentknight.com.
maintained until the next foam. A fare watch was unstable, fire crews initially field around its perimeter. Numerous spot fires in the buildings and vehicles across the street.

Fortunately, the plant representative returned to tell the incident commander that as many as 10 people were unaccounted for. In addition, there were three injured workers and numerous spot fires in the damaged building and a debris field around its perimeter.

Because the building was unstable, fire crews initially went into defensive positions and used master streams to control the fires. Fortunately, the plant representative returned to tell the officer in charge that the missing workers had been located before firefighters were committed to search and rescue.

The fires continued to burn well into the night, as firefighters diluted leaking alcohol with water and foam. A fire watch was maintained until the next day, when investigators entered the plant to determine the cause.

The employee who’d run up the stairs to warn the others sustained second- and third-degree burns, and another suffered a broken hand when he was hit by flying debris. A third was treated for a minor respiratory ailment.

The value of the plant and its contents weren’t reported, but property damage is expected to reach $15 million.

**HEALTHCARE**

**Fire sprinkler extinguishes fire in nursing home**

**FLORIDA**

A single fire sprinkler extinguished a fire in a nursing home patient’s room, as staff and firefighters evacuated the occupants and treated the injured.

The single-story nursing home was 200 feet (61 meters) long and 100 feet (30 meters) wide. Detection and wet-pipe automatic fire sprinkler systems had been installed.

Firefighters responding to the 12:33 p.m. report of a fire arrived within four minutes to find heavy smoke in one wing. The facility’s staff told fire crews that section of the building had already been evacuated and that staff members had used a fire extinguisher to control the flames in the room. While firefighters went to locate the fire, which the single fire sprinkler had already extinguished, the incident commander ordered additional resources to help vent the building, perform triage, and control the fire sprinkler water flow.

Investigators determined that smoking materials in the room of a 70-year-old man ignited a pillow and that the fire burned the mattress, and scorched one side of an oxygen mask. Oxygen was flowing at the time of the fire. The man was treated and transported to the hospital with unspecified injuries. Two others who were injured refused transport. Some 82 occupants were evacuated.

The multi-million-dollar property and its contents sustained a $2,000 loss.

**MERCANTILE**

**Arson fire damages dry cleaners**

**OHIO**

A passerby discovered a fire in a dry-cleaning store and called 911 at 10:42 p.m.

The single-story, concrete-block structure, which was 50 feet (15 meters) long and 75 feet (23 meters) wide, had a cement-paneled roof. The shop had no detection or suppression system.

Firefighters arriving on scene within five minutes discovered that someone had forced open the building’s rear door, and investigators later discovered several areas of origin. Eight fire apparatus and 24 firefighters extinguished the two fires in about 37 minutes.

The building, valued at $65,000, sustained $13,000 in property damage. Its contents, valued at $90,000, sustained a loss of $37,000. There were no injuries.

**EDUCATIONAL**

**Torch ignites roofing materials in school**

**CALIFORNIA**

A fire that began when a contractor applying a new roof ignited the roof-covering glue with a propane torch fire heavily damaged a high school while classes were in session.

The three-story, wood-framed school had a stucco exterior. Smoke and heat detectors were located throughout the building, as was a wet-pipe fire sprinkler system, but they weren’t factors in the incident because of the fire’s location.

The contractor was heating the glue with the torch to speed the adhesion process when the glue ignited, starting a fire that quickly spread to other roofing materials. Workers tried to smother the blaze with tar paper, but only increased the fire’s intensity.

The workers left the roof, and the contractor called 911 at 11:12 a.m. En route to the incident, officers saw smoke and struck a second alarm.

Firefighters arrived four minutes later to find that the building had already been evacuated and that heavy smoke was coming from the roof. Ladder companies were ordered to place master streams into operation.

Once the firefighters brought the heavy fire under control, they placed hose lines above and below the roof, finally bringing the fire under control hours later.

Two roofer suffered burns and were taken to an area hospital.

The fire heavily damaged the school building, valued at $2.5 million, which sustained property damage of $1.5 million.

Its contents, valued at $1.5 million, were estimated to have sustained $500,000 in damage.
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STAYING CURRENT IN your career is easier when you participate in NFPA's professional development conferences and seminars.

NFPA members attending the Fall Education Conference from November 16 through 19 in Reno, Nevada, will get a unique look at today's changing world when they attend any of the 70 education sessions we have planned. And throughout the fall, NFPA offers numerous other professional development opportunities, including seminars.

**Education conference**

In keeping with the conference's added track on homeland security, several education sessions will present case studies and discuss successful practices you can use on the job every day. Topics include " Homeland Security: An Integrated Approach;" "Hospital Emergency Incident Command System;" and "Balancing All-Hazards Emergency Operations Planning with Terrorism: A Public Sector Perspective."

A panel discussion on "Homeland Security Preparedness and Response," moderated by Donald L. Schmidt of Marsh Risk Consulting on the morning of November 19, will conclude more than 20 hours of presentations on homeland security preparedness and response. Schmidt is also a member of NFPA's Disaster Management Technical Committee.

Among those participating in the discussion is T.J. Kennedy, manager of the 2004 Summer Olympics Safety and Security Project. Kennedy will offer his perspective on the security challenges the public and private sectors face and offer recommendations to enhance preparedness.

The conference's keynote speakers will provide a timely look at today's professional and personal development issues and at our curiosity about things private.

Pulitzer Prize-winning columnist Ellen Goodman, whose column appears in more than 450 newspapers, will address members at the opening session on November 17. In her discussion of press relations, she will examine how the media has gone from a group that kept unsavory information about figures such as Franklin Delano Roosevelt and John F. Kennedy from the public to one that thrives on exposing the intimate details of public figures' personal lives.

Addressing luncheon attendees on November 18 is Bruce Jenner, who broke the world record in the decathlon at the 1976 Summer Olympics. Jenner is now a motivational speaker, sports commentator, spokesperson, and television personality. He will talk about "Finding the Champion Within."

In addition to attending seminars and speaker presentations, members will be asked to vote on 20 codes, standards, and recommended practices, including NFPA 900, *Building Energy Code*; NFPA 921, *Fire and Explosion Investigations*; NFPA 1670, *Operations and Training for Technical Rescue*; and NFPA 58, *Liquefied Petroleum Gas Code."

Goodman speaks at Fall Education Conference

For more information or to register for the education conference, go to www.nfpa.org/meetings.

**Fall seminars from NFPA**

Professional development at NFPA is designed to provide members with code instruction, taught by NFPA specialists and nationally recognized experts, that keep you current on the latest fire, electrical, building, and life safety developments and requirements.

The seminars we'll offer before the Fall Education Conference on Friday, November 14, and Saturday, November 15, will cover NFPA 5000™, *Building Construction and Safety Code™*; NFPA 1, *Uniform Fire Code™*; NFPA 99, *Health Care Facilities*; NFPA 921, *Fire and Explosion Investigations*; and NFPA 58. All of these seminars will run from 8 a.m. to 4:30 p.m. on both days, except the NFPA 58 seminar, which will be held on Saturday from 8 a.m. to 4:30 p.m.

The NFPA 5000 seminar covers the development, organization, and application of the code, as well as means of egress and accessibility, and performance-based design options. Also addressed are fire protection systems and equipment; classification of occup...
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Mail in this form along with UPC bar code, store receipt and flashlight serial number.

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Mail-in Rebate Instructions:

1. Purchase a Pelican M9 or M11 flashlight between 7/1/03 and 9/30/03 from an authorized Pelican dealer. Legibly complete this form and mail it with the required documentation to the address below to be postmarked by October 31, 2003, and received by November 7, 2003. Incomplete forms or forms without proper documentation and/or forms not received by the deadline will not be honored and will not be returned. Company is not responsible for late, lost, mutilated or misdirected mail. Mail with insufficient postage will be returned. All requests are subject to verification.

2. Send the completed Rebate Form along with the barcode sticker, flashlight serial number, and a photocopy of your original receipt from your Pelican dealer that clearly shows the date of purchase.

3. Offer good only in the U.S. to legal U.S. residents, 18 years old or older prior to 7/1/03. Pelican employees, resellers, distributors and their respective agents and their immediate family members are not eligible.

4. Please allow approximately 4-6 weeks from the date you mail your rebate for processing. For questions regarding this offer, please call 800-473-5422 or 310-326-4700.

5. Void where restricted, taxed or prohibited by law. Fraudulent submissions could result in federal prosecution with U.S. Mail Fraud Statute (18 U.S. Code §§ 1241 & 1242).

6. Rebate checks must be cashed within 90 days of date issued. Mail to: Pelican Rebate, 23215 Early Ave., Torrance, CA 90505.

Mail the following requirements by October 31, 2003:

- Completed Form
- Photocopy of original receipt
- Photocopy of barcode sticker
- Flashlight serial number (on form)

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BUILDING SAFETY AND FIREFIGHTER

protection took a giant step forward in late July, when the California Building Standards Commission (CBSC) voted 8-2 to adopt NFPA 5000™, Building Construction and Safety Code™ and NFPA 1, Uniform Fire Code™ (UFC™), for new construction in the state.

“This adoption is the result of an enormous effort by the NFPA staff, our volunteers, members, and supporters who helped make the case that NFPA’s consensus process would best serve the interest of the people of California,” says James M. Shannon, president and CEO of NFPA.

“The vote came after a review of the state codes governing new construction in California by four key state agencies and the commission’s code change committee. Unlike the International Code Council (ICC) codes, which the CBSC also considered, NFPA 5000 and NFPA 1 emphasize the safety of firefighters and occupants in their primary mission statement.

“As a former president of the Los Angeles City Fire Commission and as someone who lost both of my husband's parents in a high-rise hotel fire a number of years ago because of inadequate building standards, I supported the code that provides the highest level of safety,” said CBSC Chair Aileen Adams in a prepared statement.

California State Fire Marshal John Tennant recommended adopting NFPA 5000 and NFPA 1 after determining that NFPA codes would provide California with "higher levels of safety" than building and fire codes developed by the ICC. As part of the CBSC review, Tennant’s office scrutinized both organizations’ codes and found NFPA’s code-development process “...to be superior with respect to the protection of public safety.”

“Our investigation also found that NFPA has an established record of putting safety first by interpreting codes and providing advisory services and direct support,” he wrote. “Several of NFPA’s educational programs relate directly to code-advisory services and to the state fire marshal’s responsibilities with respect to the promotion of public safety. Our investigation found the following:”

“NFPA has provided code interpretation advisory services for many decades. NFPA provides these advisory services through a technical staff of 120 professionals from appropriate disciplines.”

Tennant noted that NFPA funds several important research and investigative initiatives that include NFPA’s Fire Analysis and Research Division, which develops widely consensus-based process, which seeks input from all of the stakeholders.

“The NFPA has been in the business of developing fire safety standards for more than a century,” said Dave Carlson, past president of the California Fire Chiefs Association and chief of the Riverside City Fire Department in a prepared statement. “Their expertise and consensus-based approach make these new building codes the ‘gold standard’ for the Golden State.”

With the CBSC vote, NFPA 5000 requirements are now mandatory for a number of state agencies, which will soon begin developing a timeline for the amendments needed to bring California’s current building code into alignment with the CBSC’s recommendations.

During this process, the amendments will be offered for public comment, and the
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IT'S NOW BECOME obvious that large life-loss fires in nonsprinklered buildings also tend to be fast-developing fires. Consider three tragic nightclub fires in the last five years. In October 1998, 63 people died in a dance hall in Gothenburg, Sweden, in a fire that began in stacked upholstered furniture. In December 2000, holiday decorations fueled a fire that killed 11 patrons of the Het Hemeltje (Small Heaven) café in Volendam, Holland. And in February 2003, a fire that started in exposed com-

bustible insulation foam led to 100 deaths at The Station in West Warwick, Rhode Island.

Based on past fire testing, we can reasonably assume that fire modeling would characterize all these fires by heat-release curves that would be best approximated by the "ultra-fast" T-squared fire. This lesson shouldn’t be lost on fire modelers or those evaluating performance-based designs.

During the 1970s, when residential fire sprinklers were being developed, scientists learned that fires that develop very rapidly are the most difficult for a fire sprinkler to suppress. Sprinklers were tested against a wide range of fire scenarios in simulated bedrooms, kitchens, and family rooms, and the scenario found to represent a "reasonable worst case" consisted of upholstered furniture arranged in a corner against combustible vertical surfaces. This became the basis for the corner fire test, used to test residential fire sprinklers for listing. When this same scenario was later measured with a large calorimeter, the resulting fire was best represented by the ultra-fast T-squared fire growth curve.

The heat release rates of T-squared fires grow proportionally to the square of the time period. In the 1980s, fire protection scientists and engineers introduced the concepts of "slow," "medium," and "fast" T-squared fires to represent a range of expected rates of heat release for fire modeling. Basically, a slow T-squared fire reaches a burning rate of 1,000 Btu/s (1,055 kW) in 600 seconds, while a medium T-squared fire reaches that rate in 300 seconds and a fast fire in 150 seconds.

The concept of the ultra-fast T-squared fire was introduced shortly after the concepts of the slow, medium, and fast fires when it became apparent that the range of those three design fires wasn’t sufficient to capture some of the more important fire challenges. The ultra-fast T-squared fire reaches the burning rate of 1,000 Btu/s (1,055 kW) in 75 seconds.

Fire modelers and those evaluating performance-based designs can argue that slow, medium, and fast fires are more common and that ultra-fast fires are generally only the result of a breakdown in code enforcement. Nevertheless, they should recognize that ultra-fast fires are the fires resulting in large losses of life. To ignore the potential for the ultra-fast fire is to take the position that it’s acceptable to have these periodic, major losses of life. ✪
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TAKING MAXIMUM ADVANTAGE of Life Safety Code® requirements allows fire departments to manage school fires successfully.

The potential for a fire resulting in a large loss of life demands that fire departments plan for such an event at all schools in their jurisdictions.

Planning should begin with a study of the school's layout to determine evacuation tactics. Multi-story schools with limited egress present a much greater evacuation challenge than single-story schools with direct access to the outside from every classroom. And temporary structures used as classrooms can create unique firefighting and evacuation challenges.

In addition to a narrative and drawings pointing out important building features, the pre-incident plan should include considerations specifically for educational occupancies. Elementary and high schools must conduct fire drills, and it's essential that the fire department be involved in these drills so firefighters know the evacuation plan. Teachers are expected to account for their students and report their evacuation status to the principal or his or her designee, who then reports the overall evacuation status to the fire department upon its arrival. The fire department and school administration should agree on a designated meeting place to ensure that this information is promptly relayed to responding units.

The accuracy of the accountability system varies depending on grade level and student discipline. Elementary schools typically have less movement from room to room, and students are more likely to follow directions. As a result, the accountability process is usually more efficient in elementary schools than it is in high schools, where students are often assigned to different classrooms for each subject. However, older students are more likely to take appropriate action in the absence of adult supervision.

In evacuating schools, the leadership of teachers and administrators is extremely important, provided the staff is properly trained to handle emergencies. Many fire departments conduct school drills that include special challenges, such as a blocked exit, to ensure that teachers are prepared to react to unexpected conditions, in this example by leading students to alternative exits. It's also important to organize the location of the post-evacuation assembly spots in such a way that students aren't gathered near roadways or in areas that would hinder fire department access.

Pre-incident plans should list normal school hours, since this is when one can expect the highest occupancy and the maximum life hazard. However, first responders should also be aware that teachers and other employees often arrive well before the beginning of classes and may be in the building long after school is dismissed for the day. Further, large numbers of people often gather at schools in the evenings and on weekends for sporting events, parent/teacher meetings, orientations, plays, and other activities. Schools typically plan these special events well in advance, and the fire department should include an event schedule in its pre-incident plan.

When the rare fire does occur at a school, tactical operations should follow normal procedures, but special planned factors may alter the department's standard operating procedures. Take advantage of the school's accountability system by checking with the designated person, who should be able to report the location of the fire and either confirm a total evacuation or know the approximate location of missing students and staff.

While the accountability process is better at schools than at most other occupancies, the incident commander can't rely entirely on the school representative's report. Fires can occur when teachers don't have total control of the students, such as the beginning of the school day, during lunch periods, or at dismissal. And traffic in and out of the building typically isn't monitored closely. Although most schools require visitors to register, parents and other visitors sometimes ignore the sign-in process or forget to sign out as they
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**Universal Flexibility** - Keltron’s systems are capable of interfacing with FACPs from multiple manufacturers and the widest range of input signals.

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ONE OF THE most important benefits of NFPA membership is access to our Technical Advisory Services, which allows members and those charged with enforcing NFPA codes and standards to ask our technical staff questions about the code requirements. Each year, NFPA technical staff responds to more than 35,000 such requests.

How do I get my technical questions answered? There are several different ways. To ensure the fastest response possible, you should have your NFPA membership number, name, the name of your company, your NFPA membership number or public-sector official information, the title of the NFPA document you need clarified, and the edition date.

How do I submit a technical question via fax? Fax your request to (617) 770-0700.

How do I submit a technical question via E-mail? To submit an E-mail request, go to www.nfpa.org/Codes/Interpretations.asp. There, you will find a link that will give you the correct E-mail address for each NFPA document. For example, questions about NFPA 1, Uniform Fire Code™, are sent to publicfire@nfpa.org.

How do I submit a technical question via mail? Mail your request to NFPA, One Batterymarch Park, Quincy, MA 02169-7471. Again, remember to include your full name the name of your company, your NFPA membership number or public-sector official information, the title of the NFPA document you need clarified, and the edition date. Please note that using traditional mail will affect the response time.

What do I do if I'm not an NFPA member or a public-sector official? NFPA's Web site, www.nfpa.org, provides a lot of technical information on many different topics that's available to everyone. There's also a “Frequently Asked Questions” (FAQs) section at www.nfpa.org/Codes/Interpretations.asp, where we answer many common technical requests. In addition, the public can get general safety information from our library and One-Stop Data Shop, which you can reach at (617) 770-3000.

If you're not sure what resources are available to you or you would like to hear about other benefits of NFPA membership, please contact our Customer Service Department at (800) 344-3555.

CHRISTIAN DUBAY, P.E., is a Senior Fire Protection Engineer and CAROL ANN FABER is NFPA's Manager of Membership.
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SpectrAlert® Strobes for your entire building

Full line of 24-volt strobe notification products, offered with 15, 15/75, 30, 75, 115 and 177 candela options. Compact, circular shape for low-profile appearance. Installs easily and fits standard back boxes - even if box is not properly aligned. Captured mounting screws for cost effective installation. Switch-selectable horn tones.

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Low-flow duct smoke detector with the widest range of airflow speeds - 100 to 4,000 FPM. Specifically designed to meet Variable Air Volume systems. Eliminates need for in-duct, pendant-type detectors. Cover missing signal. Watertight and high temperature models available.

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Acclimate™ Smoke Detectors for your multi-use common areas

A detector with photoelectric and thermal inputs for complete protection.

- Equates multiple sensor inputs into predetermined responses to identify fire scenarios in the quickest manner
- Self-adjusts to the local environment and sets sensitivity based on recorded data without a service call
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This type of forward thinking led System Sensor to develop the soon-to-be-available Eclipse™, a brand new industry-leading protocol with a complete line of products:

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Experience - System Sensor is a global manufacturer of fire detection and notification devices. For years, we have designed new products that utilize the most advanced technologies in the most inventive ways, yielding superior building protection products that are more convenient to install and more efficient to operate.

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Service - System Sensor is dedicated to meeting your needs. We have application engineers ready to help, a customer support department that is on call to support you, and technical documentation available 24/7 through automated FAX or CD-ROM.

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advanced ideas, advanced solutions:
WHEN DISCUSSING THE fire problem in educational occupancies, it's important to define what an educational occupancy is. According to NFPA 101, Life Safety Code, an educational occupancy is one that's "used for educational purposes through the twelfth grade by six or more persons for four or more hours per day or more than 12 hours per week." This includes kindergartens, elementary schools, junior high or middle schools, and high schools, but it doesn't include colleges and universities.

In fact, colleges and universities fit several other occupancy classifications, depending on the part of the facility being evaluated. For example, classrooms can be classified as business occupancies, while lecture halls with occupant loads of 50 or more can be classified as assembly occupancies. And residential areas fall into one of the residential classifications.

Private homes housing three or fewer outsiders are categorized as one- and two-family dwellings, and residences in which 4 to 16 outsiders live can be classified as a lodging and rooming house. This latter classification includes many fraternity houses and homes that have been converted to student housing. Then there are the typical dormitories with sleeping accommodations for more than 16. These can be classified as hotels and dormitories.

Given these definitions, it's rare to hear of a student dying in a fire in an educational occupancy today, despite the frequency of structural fires in such occupancies. Based on NFPA statistics, there were 7,600 structure fires in educational occupancies between 1994 and 1998, 50 percent of which were incendiary or suspicious in nature. This is significantly higher than the 27 percent of incendiary and suspicious fires that occurred in other non-residential occupancies over the same period. And FBI statistics for the same period show that approximately 50 percent of the people arrested for arson were under 18 years of age. Juveniles are obviously a major factor in the school fire problem.

The reason fires in non-residential elementary and high school buildings rarely kill anyone is due, in part, to code changes resulting from several fires early in the 20th century. These fires include the 1908 Lakeview Grammar School fire in Collingwood, Ohio, which killed 175; the 1937 gas explosion in New London, Texas, which killed 294; and the 1958 fire in Our Lady of Angels grade school in Chicago, which killed 95. Among the code changes were new requirements for frequent evacuation drills, inspection of the egress facilities, and control of interior finishes and decorations.

However, it's not as rare to hear of a fire involving loss of life at colleges and universities, particularly in student housing. This isn't surprising, given that most fire fatalities occur where people sleep. In off-campus college housing, other factors contributing to life loss from fire include unsupervised activities and minimal maintenance, since off-campus housing is often found in lower-rent districts. In addition, changes made to this type of housing may not be submitted to the authority having jurisdiction (AHJ) for review, and the AHJ frequently doesn't have enough staff to inspect these occupancies as often as it should.

The life loss in educational occupancies is very low, but this is no reason to reduce inspections and enforcement. In fact, a major reason for such low losses is surely the enforcement of fire and building codes. The fire deaths at colleges and universities, particularly in student housing, is another matter, one that will require code changes to improve fire safety, more educational efforts to increase awareness among owners and occupants, and innovative enforcement.

2. FBI's Crime in the U.S. Series
EACH DAY BLUEPRINTS ARE REVIEWED, WIRING IS INSPECTED, EQUIPMENT IS TESTED AND DANGER HAS ONE LESS PLACE TO HIDE.

At Underwriters Laboratories, we’re proud to partner with you in your commitment to public safety, and we understand your responsibility requires you to leave no stone unturned. That’s why our dedicated regulatory services staff offers technical services and support that include everything from online information to on-site field evaluations. This wide range of resources is available to assist your work in any built environment. For more than a century, UL and the integrity of the UL Mark have offered you something important when making compliance decisions: peace of mind.
McLean, Virginia, developed 12 national terrorism-response objectives, ranked them in terms of importance, and laid out first-responder needs in all 12 categories.

For example, the priority for first responders is personal protective equipment. Their biggest need is full-body protection from chemical and biological agents, with respirators ranked number two.

"Fire personnel have fire and heat protective turnout gear," the report notes, "but the current turnout gear has many limitations... Generally, today's gear (except for special operations units like hazmat and bomb squads) offers no protection against chemical, biological, and radiological threats."

This isn't for lack of equipment standards, says Jeffrey Stull, president of International Personnel Protection, Inc., and a member of the technical committee that wrote NFPA 1994, Protective Ensembles for Chemical/Biological Terrorism Incidents. Since several companies currently produce suits that comply with NFPA 1994, Stull feels it would make sense for the DHS to require that anyone using First Responder Grant funds purchase chemical/biological response suits that meet NFPA 1994. DHS merely encourages the use of NFPA 1994.

"There are some states' rights issues and concerns about appearing to endorse individual products," explains Stull, who also sits on the federal government's InterAgency Board for Equipment Standardization and InterOperability. "As a result, first responders are going to waste millions, maybe billions, on subpar protective gear."

Getting behind existing standards, such as NFPA 1994, is just part of what the federal government needs to do. It must also call for standards that local responders can use to assess their readiness to tackle chemical, biological, radiological, nuclear, and explosives events.

In December 2002, the Gilmore Commission, also known as the Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction, urged the federal government to develop a comprehensive approach to measuring the preparedness of states and localities.

"...Without a comprehensive approach to measuring how well we are doing with the resources being applied at any point in time," the commission
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IN OUR JOURNEY from grade school through high school, each of us experienced the traditional fire drill, with bells or horns sounding in the halls. Today, our children still practice escaping from their classrooms the way we did at their age. The only real difference between today’s fire drills and those we participated in is the alarm delivery mechanism.

Forty-five years ago, most schools that had a fire alarm system had a manual system. With changing codes, however, many schools now have automatic detection equipment, as well as the traditional manual fire alarm box.

The primary goal of any school fire alarm system is to ensure that students and staff are alerted to a fire early enough to evacuate safely from the building. To ensure that both students and staff will respond to an alarm, the fire alarm system must be reliable and free of false alarms.

Foremost among the problems with which alarm systems designers must cope when putting together a system for a school is preventing malicious false alarms. Growing up, we were told not to touch that red manual pull box unless we actually saw a fire. Unfortunately, teenagers sometimes see this admonition as a challenge to find a manual fire alarm box in some area that isn’t easily monitored and pull the handle.

Over the years, a number of solutions to this problem have been tried. Pull stations have been coated with a chemical paint that turns the hands of anyone who touches it, then washes up, purple. Other pull box handles were treated with a “clear” solution that could only be seen on the hands of the culprit under an ultraviolet light.

More modern deterrents include Lexan covers with built-in battery-operated horns that are installed over the manual alarm box. When the cover is lifted, the horn sounds at the fire alarm box, notifying teachers or school staff that someone is trying to activate the alarm. After a few students have been caught in this way, the malicious false alarm problem usually goes away.

Another problem, one that primarily influences automatic fire alarm system design, is incendiaryism. Statistics tell us that juveniles play a major role in the school arson problem.\(^1\) According to NFPA’s figures, 24 percent of incendiary fires in educational properties begin in laboratories, locker rooms, and cloakrooms; 10 percent begin in hallways, corridors, or malls; 8 percent begin in classrooms or small meeting rooms; and 7 percent start in the kitchens.\(^2\)

Designers need to be aware of this information so they can determine where best to place detection equipment and what type of equipment best suits the school administration’s needs. Designers should also consider mechanical protection for devices or notification appliances that will be protected. Any mechanical guard must be listed for use with the detector. Section 7.3.4 of the code also requires appliances subject to mechanical damage to be suitably protected. If guards or covers are employed, they must be listed for use with the appliance. NFPA 72 also requires that the effect these guards or covers has on the appliance’s performance comply with the listing requirements.

To ensure that school fire alarm systems are reliable, they must be maintained and tested in accordance with NFPA 72. To ensure that malicious false alarms are nipped in the bud, those caught pulling the handle must be swiftly punished. And to ensure that staff and students respond to an alarm properly, they thus participate in regular fire drills.

Properly designed, installed, and maintained automatic fire alarm systems will continue to ensure the safety of our children in our schools.

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Don't forget to check your 'kraal' space

bongos, grazing in the savanna. Visually, there's no separation between the guestrooms and the animal herds.

The building is shaped like an African kraal, a group of buildings tightly packed in the shape of a horseshoe into which animals are herded for safety. Many African villages use kraals, an African word for "corral," which also keep the homes safe.

The Animal Kingdom Lodge is laid out in the form of two kraals positioned with the curved ends together. This intersection forms the main lobby. One of the horse-shoes is larger to provide more rooms with a savanna view.

The lodge presented my team with many code problems, as well as the opportunity to help the Disney Imagineers accomplish their design goals. Particularly valuable in this effort were the equivalency provisions in Section 1.5 of NFPA 101®, Life Safety Code®, with the development of NFPA 5000™, Building Construction and Safety Code™, NFPA 101’s equivalency provisions have been expanded to provide more detailed criteria for accepting equivalent fire protection alternatives, systems, materials, and methods. Those provisions are also found in Section 1.5 of NFPA 5000.

Because the hotel is low and linear for good animal viewing, the travel distances for exiting became a team focus. However, a much bigger concern quickly became apparent. While we were able to provide the appropriate number of exits at the required intervals to deliver guests to the public way as codes require, the public way was full of wild giraffes, zebras, gazelle, impala, and wildebeest.

Obviously, we couldn’t dump the guests out into the savannas. So we turned to NFPA 101, where we found the solution, which now can be found in NFPA 5000, as well.

Many occupancy classifications, including assembly, education, day-care, and hotel occupancies, refer to Section 11.7 of NFPA 5000. “Discharge from Exits.” Exception No. 3 to Section 11.7.1 states that a means of egress may terminate in an exterior area of refuge, as provided in Chapter 21, Section 21.2.7.1, of NFPA 5000. This chapter lays out regulations for detention and correctional occupancies.

According to Section 21.2.7.1, exits may discharge into a fenced or walled courtyard, as long as no more than two walls of the courtyard are the walls of the building from which people are leaving. A second condition requires enclosed courtyards to accommodate all occupants at a minimum distance of 50 feet (15 meters) from the building. For these purposes, the occupant load for the courtyard must be calculated using a net area of 15 square feet (1.4 square meters) per person.

To solve our problem, fenced areas were erected to provide areas of refuge for guests from both the building and the animals that live in the savannas. The fences start on either side of the building’s exterior exit doors and form large corral. The fencing uses eucalyptus “eukie” poles to blend into the African design of the building. In fact, the African term “boma” describes the area: an open and natural space that provides a safe, sheltered area in the bush. Our exterior areas of refuge were quickly given this new name.

When I visit the Animal Kingdom Lodge, I often stop with the other visitors to look at the animals. I’ve often heard people wonder if the animals are put in "those corral"—our bomas—at night. I wonder what they would think if they knew that the bomas were designed for them, not for the animals.
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Circle 006 on Reader Service Card
Teaching kids with grids

My nephew Corey just started first grade, and I hope he’s one of the students who get off the school bus, walk through the front door, and yell to his parents, “Get Out! Stay Out!” Luckily for Corey, his mom and dad will know exactly what he’s talking about because I’ve kept them posted on NFPA’s Fire Prevention Week activities. The theme for Fire Prevention Week 2003, October 5 to 11, is “When Fire Strikes: Get Out! Stay Out!”

Waving a home fire escape grid, he’ll be eager to begin one of his first assignments of the school year. The entire family, including three-year-old Emily, will sit down and plan their home fire escape. Picturing their home in my head, I know exactly what their plan will look like.

On paper, they’ll walk through the house using their first way out and go to their outside meeting place (which, knowing my brother, will be the evergreen tree in the front yard). Then they’ll review their second way out—the bedroom window—and explain this route to the kids.

With the plan complete, it’ll be time to do the drill. The kids will scurry to their bedrooms and lie on their beds waiting for the signal. Dorothy will be nervous thinking of every move she will make for a perfect escape. Glenn will sound the alarm, putting the home fire escape plan into action.

Corey and Emily will be up out of their beds, meeting their mom at their bedroom doors, and Dorothy will lead them down the stairs to meet Glenn at their family meeting place outside. Corey’s homework assignment will be complete.

NFPA’s Weekly Reader project was funded through the generosity of our Fire Prevention Week funding partners, Pella Corporation and the Home Safety Council. Classrooms that subscribe to Weekly Reader or participate in the Lifetime Learning classroom tool kit program will receive special issues of the publications that focus on Fire Prevention Week.

Children in kindergarten and grade one will learn about home fire escape planning using a “Big Book,” a common teaching tool for the early primary grades that uses a short story and colorful pictures to get a message across. Second and third graders will participate in a variety of activities that reinforce the important components of home fire escape planning. And all the students will take home a letter explaining to their caregivers how to conduct a home fire escape drill and a grid on which to lay out the plan.

The Weekly Reader project is just one tool we use to encourage families to develop and practice a home fire escape plan. In addition, thousands of fire departments will hold open houses and visit schools, senior centers, and malls to teach the importance of home fire escape planning. Firefighters will display Fire Prevention Week banners, hang posters as safety reminders, give fire hats to youngsters, show fire safety videos, and distribute important safety brochures. Escape planning information and grids will be downloaded from NFPA’s Fire Prevention Week Web site, www.firepreventionweek.org, and given to students, parents, employees, and older adults as a reminder to take the time to plan and practice a home fire escape drill. All these activities are part of the annual Fire Prevention Week effort embraced by fire departments all over the United States. (See related story on page 54.)

We love to hear about the innovative ways fire departments bring our educational materials into their communities, and each year, we create a scrapbook of campaign highlights for the Fire Prevention Week Web site.

We also love to hear how Fire Prevention Week helps save lives. Over the past six years, NFPA has documented 81 lives saved as a result of all this hard work. Thanks to their fire safety preparedness training, real families have developed and practiced their home fire drills and gotten out (and stayed out!) just in time. The message is spreading, and we look forward to hearing of more lives saved as a result of this year’s campaign.
Use these Reader Service cards to receive FREE information on products and services valuable to you and your business at no cost or obligation. Complete the required information, then circle the numbers that correspond to the numbers on the advertisements or editorial listings in this issue. Visit our website today!

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We would appreciate your comments...

Letter to the Editor
I LOVE A CHALLENGE

When you’re answering an emergency response call, you face enough surprises; we know you don’t want your gear to be one of them. You need gear that can stand up to the intense heat and flame of a flash fire or the toxic chemicals or biological threats of a hazmat incident. So you can handle the heat and perform at your best.

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Circle 011 on Reader Service Card
Stay or go?

by KAREN KROLL
SHOULD U.S. SCHOOLS

equipped with fire sprinklers and with fire detection and intercom systems have the option of using a delayed evacuation policy when it comes to fire drills or actual fires? A controversial pilot project underway in Minnesota is examining that question. Supporters say it’s time to reevaluate the practice of having students completely evacuate a school when the fire alarm sounds, since many of today’s school buildings are much safer than they were even a decade ago. Those opposed contend that implementing a delayed evacuation policy in schools places kids in needless danger. >>
The project began in 2001, when the Minnesota State Fire Marshal's office allowed two high schools in Minneapolis, two in Faribault, and one in Austin to implement a delayed evacuation policy. According to the March 2001 State Fire Marshal's Statement of Policy, prepared by Jon Nisja, a supervisor with the State Fire Marshal's office, the schools had to have been activated before evacuation begins. Patrick Sheehan, bureau chief of inspection with the Minnesota State Fire Marshal's office, says checking the situation first enhances safety.

"You want to understand where in the building the danger is occurring, so that those in danger can be moved away from it," says Sheehan.

According to Keith Dixon, superintendent of Faribault Public Schools, the delayed evacuation policy gives school administrators time to check for danger before initiating an evacuation or lock-down. Dixon and his colleagues wanted to develop a single-response life-safety policy to the

been activated. Each school in the project is either new or has been renovated. In Austin, the buildings date to 1921, 1939, and 1953, and the fire sprinklers and alarms were installed in 1993 and 2001. North High in Minneapolis was built in 1975 with fire sprinklers, and Southwest, built in 1940, was renovated in 1997. In Faribault, upgrading construction began in 1996.

The Austin High School has about 1,250 students, while the two Minneapolis high schools have between 1,300 and 1,500 students each. In Faribault, the high school has 1,400 students and the elementary school has about 600.

According to Nisja, he and Mike Monge, director of Fire and Code Services in Faribault, first discussed the delayed evacuation policy five or six years ago when a series of school shootings raised concerns about security. Adding impetus to the project was their concern about the disruption that resulted when intentional false alarms forced unnecessary evacuations and their belief that any response to an alarm should be evaluated on a variety of problems that might arise at any school in Faribault, all of which have fire sprinkler systems, fire-rated corridors, and other life-safety features installed with funds raised by a $40-million bond referendum.

"We really wanted to look at how to deal with the multiple kinds of situations we would face in a school setting," he says. The discussions began right after the 1999 shootings at Columbine, says Dixon.

In the Faribault and Minneapolis schools, the strategy works like this: The alarm goes off, and students stop what they’re doing and stay at their desks. The teacher checks the area immediately surrounding the classroom for smoke or flames. If he or she finds none, the students and teacher stay put.

Meanwhile, a school employee checks the fire alarm control panel, which is typically in the principal’s office. He or she tells a custodian which alarm has activated, and the custodian heads to that area to check for signs of fire or other danger. If the custodian doesn’t radio the principal’s office with information within 60 seconds, evacuation begins.

During this process, the principal or another school official uses the public address system to inform students and staff that the cause of the alarm is being investigated. If any danger is found, students and teachers are told to evacuate or move to another location in the building. If the teachers or students can’t hear the instructions or aren’t sure what to do, they should evacuate.

"If there’s any doubt, evacuate," says Nisja.

Austin High School, which is located downtown and bounded on two sides by busy thoroughfares, follows a slightly different policy.

“They really don’t have a place to evacuate the kids,” says Nisja, a member of NFPA’s Fire Prevention Code Technical Committee. “You have a 6-to 10-foot (1.8-to 3-meter) sidewalk, and then busy thoroughfares.”

When an alarm goes off, students leave the area they’re in, but stay in the building, whose classrooms and gym are separated by a corridor and fire-rated doors. A separate annex houses the band, choir, graphic arts, and other classes. If the alarm sounds in the school building or in the annex, students and staff go to the gym. If the alarm sounds in the gym, they go to the auditorium.

Dan Wilson, Austin fire chief, favors the policy as it’s practiced at the Austin High School.

"To me it makes perfect sense. It really is safer for our kids," says Wilson "I think our school is one of the safest to be in, in the event of a fire. That’s largely due to the built-in protections, like alarms and sprinkler systems."

Wilson says he wouldn’t allow the
school to do this if the buildings weren’t completely sprinklered.

Thomas Deegan, fire marshal for the city of Minneapolis, also supports the delayed evacuation program, although he says he wasn’t thrilled about it at first and would only support its use in certain schools.

“When we first looked at (using delayed evacuation in schools), I wondered if it was a concept thrown out to take care of false alarms and security (concerns),” he says. “But it’s been there about 18 months to two years and seems to be working pretty well.”

Deegan attributes the program’s success to the buildings’ sprinklers and to the fact that the students are older and can understand the instructions.

Concerns

Although they acknowledge the obstacles some schools face in implementing standard fire-alarm evacuation procedures, critics of the delayed evacuation project don’t agree that the policy will enhance student and staff safety.

“The firefighters strongly disagree,” says Dennis Andrist, a captain with the Faribault Fire Department and president of the Faribault Firefighters IAFF Local 665. According to Andrist, his comments represent the unanimous position of the Faribault firefighters union.

In the event an alarm signals a real fire, delaying evacuation can increase the danger to students and staff.

“The timeline of fire can be extremely rapid,” says John Hall, assistant vice-president of NFPA’s Fire Analysis and Research Division. “It’s a bad idea to assume that you have enough time to operate in a multi-phase manner.”

Comolotti, NFPA’s assistant vice-president for Public Education.

“It’s ludicrous,” adds Mike Stockstead, president of the Minnesota Professional Firefighters Association. “You have hundreds of people in the school that you’re leaving in a hazardous area.”

Robert Solomon, NFPA’s assistant vice-president of Building and Life Safety Codes, says implementation of such policies may contribute to the apathy that many adults show when faced with fire alarms. Individuals have to be prepared to act when they hear an alarm, not wait for someone to tell them what to do, he says. Such programs may instill a ‘wait and see’ attitude.

Several proponents of delayed evacuation counter that automatically evacuating a building when an alarm sounds tends to create kids who respond without thinking.

“One of the problems we’ve had with old fire alarms is that people behave like robots. If there’s anything out of the ordinary, no one knows what to do. This system makes people think,” says Nisja.

Policy opponents counter this assertion by noting that Section 4.7 of NFPA 101®, Life Safety Code®, requires that emergency evacuation drills be held at unexpected times and under varying conditions to simulate the unusual conditions that can occur during an actual emergency.

False Alarms

Another reason for implementing the delayed evacuation policy is its impact on false alarms.

In the year before the pilot program began, Minneapolis’ Southwest High School had 53 false alarms, says Assistant Principal Mary Michael Comoletti, NFPA’s assistant vice-president for Public Education.

“In the event an alarm signals a real fire, delaying evacuation can increase the danger to students and staff.”

nearly. North High School also struggled with an excessive number of false alarms, says Principal Ron Simmons. At times, they would have several in one day.

Since the policy was implemented, the number of false alarms has dropped to four or five a year at Southwest and one or two a month at North.

However, other school districts faced with the same problem developed responses other than delayed evacuation.

For example, the Boston, Massachusetts, school department hired additional security guards to patrol the hallways at one problematic school, and the increase in security led to arrests and a decrease in false alarms. At another school, ROTC students were used to patrol the halls.

Faced with their own rise in false alarms, officials in Newton, Illinois, worked with the governor to develop legislation that allows local fire departments to fine people who pull false alarms. And in Napa, California, officials developed a policy that allows the
fire department to bill the parents of any student who pulls a false alarm to which the fire department responds and files an incident report.

Elsewhere, school departments have relied on technology to reduce the number of false alarms. Some schools have installed specially designed pull stations, for example. When the plastic shield on the station is lifted, a piercing 120dB or 85dB warning horn sounds. The alarm quickly directs attention to the site.

Other schools that still employ full-evacuation during fire drills have security, not fire safety and that trying to solve both problems with one response won’t work.

“Security issues should be addressed through security techniques, versus relaxing emergency policies,” says Alan Breindel, president of Secure Defense Systems, a Springfield, New Jersey, security consulting firm.

In any event, shooters are unlikely to be dissuaded by a delayed evacuation policy, says John C. Fannin, president of Safe Place Corporation, a Wilmington, Delaware-based, firm that develops safety accreditation programs for different occupancies. Rather than using the alarm system to put people in danger, he says, a sniper will find another method, such as planting an explosive inside the school.

“They’ll change their method of attack, but they’ll still attack the building,” Fannin says.

Building construction

School shootings aside, supporters of the delayed evacuation concept say that current construction practices make schools safe enough to justify the policy.

“Over the years, the fire and building codes have become very strict in public buildings, especially schools,” says Faribault’s Monge. “But, our response is still based on what we did 50 years ago.”

Without a doubt, new schools are safer than old.

According to Ron Coté, P.E., NFPA’s principal life safety engineer, NFPA 101, doesn’t require educational occupancies to be sprinklered, but NFPA 5000™, Building Construction and Safety Code™, requires fire sprinklers in educational occupancies that have a fire compartment exceeding 20,000 square feet (1,858 square meters).

Neither code exempts sprinklers in corridors protected by smoke and heat detectors.

NFPA 101 and NFPA 5000 also require that schools have alarm systems with some means of initiation, such as manual fire alarm boxes, formerly called pull stations. Manual fire alarm boxes must also be provided in the natural egress path near each required exit. The doors out of the building are exits, so that’s where the manual fire alarm boxes must be installed.

Even though Minnesota adopted the 2000 International Fire Code from the International Code Council, not NFPA 101, all the schools participating in the project have automatic extinguishing systems throughout, as well as point-addressable technology that identifies the initiating device from the fire alarm control panel and all annunciator panels.

Nonetheless, firefighters and others say that evacuation still is the prudent course of action. While the school building itself may be of noncombustible construction, the furniture and equipment in them aren’t, as they are in hospitals and correctional facilities, which use what’s referred to as defend-in-place strategies. Health care occupancies have very rigorous construction and multiple robust and redundant fire safety systems built in as part of their fire protection strategy. Simply put, this isn’t the case in schools.

“The materials in the schools are more toxic in a fire situation than anything else,” says the Faribault Fire Department’s Andrist. Such materials include computers, electrical wiring, and lighting fixtures.

One area of particular concern is the use of the school’s public address system to provide evacuation notification, should the alarm turn out to be real.

Section 9.6.4 of the Life Safety Code,
which references NFPA 72®, National Fire Alarm Code®, requires that notification systems be used for partial evacuation and/or relocation be equipped with two-hour rated cable and secondary standby power. Stockstead of the Minnesota Professional Firefighters Association notes that the policy developed for the delayed evacuation project doesn’t ask the schools to meet these requirements.

According to Nisja, however, he and his colleagues tested each school’s system before it entered the program to ensure occupants could hear and understand the announcements.

Dixon and other supporters of the program say they recognize that they can’t rely on a single communication tool. In Faribault, for instance, school officials can communicate with teachers, students, and the custodial staff using telephones and e-mail, as well as the public address system. In addition, custodians are linked to school administrators by walkie-talkie, and teachers are instructed to evacuate their classrooms if they can’t hear or understand the public address system announcements.

Training
Training teachers and staff who implement delayed evacuation is another source of disagreement. At the pilot schools, teachers and staff receive a half-day training seminar on fire safety and procedures at the beginning of the school year, says Nisja. The employees sent to investigate alarms, usually custodians or building engineers, are trained to use fire extinguishers, he adds.

Proponents also say the teachers and staff have no intention of acting as firefighters.

“If we see smoke or anything, we move,” says Faribault School Superintendent Dixon. “All we’re trying to do is determine what the situation is that we’re in.”

Still, George Burke, spokesperson for the International Association of Fire Fighters in Washington, D.C., questions whether a teacher, even with extra training, would be likely to appreciate how few minutes it can take a fire to turn deadly.

“They may not recognize the danger to the same extent [a firefighter would],” he says.

Down the road
At this point, the program remains in its pilot phase. To date, there have been no major problems or major fires.

However, there have been delayed evacuations. When a fire in the second-floor bathroom of the Austin High School activated the alarm, students were moved to the gym while a single sprinkler extinguished the blaze. According to Wilson, the whole thing proceeded very smoothly. And when a science experiment set off the alarm at North High, the school moved students from the east building to the west. According to Simmons, it all worked smoothly.

There’s no firm end-date for the project, according to Nisja, who says he and his colleagues are observing the schools using delayed evacuation and may extend the policy to others.

However, it’s unlikely that more than a small percentage of schools would qualify, since they’d have to be sprinklered and have point-identification alarm systems.

In addition, the school administration, the local fire department, and the Minnesota State Fire Marshal’s office must all agree that any school that wants to participate in the program is a good candidate, says Minnesota State Fire Marshal Jerry Rosendahl.

Because the policy of exiting when the alarm sounds has clearly helped save lives, the burden of showing that delayed evacuation will work as well as the current practice is on advocates of the policy, says NFPA’s Hall.

“They have to show that they’ve analyzed the likely effects of their policy on the range of fires schools can experience and that the results are just as impressive,” he says.

While the five Minnesota schools appear to be the only U.S. schools using a delayed evacuation policy, some members of NFPA’s Technical Committee on Schools and Daycare Occupancies are discussing it in their communities, says Committee Chair Cathy Stashak, a senior fire protection engineer with Schirmer Engineering in Deerfield, Illinois. However, a majority of committee members favors maintaining current practice, she adds.

According to committee member Bob Trotter, fire marshal for the city of Franklin, Tennessee, the committee is discussing delayed evacuation because of the increased safety of today’s school buildings.

Trotter plans to submit a proposal through the Tennessee Code Development Committee to the NFPA Technical Committee on Schools and Daycare Occupancies that would allow for emergency relocation drills for schools that conform to certain criteria. For instance, they would have to be of Type I or II construction, have two separate fire areas, and automatic fire sprinklers. Trotter will submit the proposal during the revision cycle for NFPA 101. He plans to submit a similar request to the International Code Council.

To gauge its members’ view on the topic, the Rocky Mountain Chapter of the Society of Fire Protection Engineers recently conducted an informal poll.

Members received a copy of a newspaper article outlining the policy and were asked to send in their responses, which were published in the chapter’s newsletter.

Many of those responding stated that delayed evacuation is a good approach for hospitals, where the ratio of patients to trained attendants is regulated, and could only work in schools if they met the same requirements as hospitals.

In the end, the future of delayed evacuation may not be decided by its supporters or its opponents. As with so many issues in fire protection, it may be decided instead by circumstances.

NFPA Journal Managing Editor John Nicholson contributed to this article.
IN JUNE, TWO FORMER Seton Hall University freshmen were indicted on murder and arson charges stemming from a January 2000 fire that killed three students and injured more than 50 others.

For college administrators, many of whom manage campuses with unsprinklered dormitories, the headlines were a nagging reminder that more than three and a half years after the New Jersey blaze, fire safety in dorms remains a pressing and unresolved issue.

The numbers for 2000 alone speak for themselves. Two months after the fire in the unsprinklered Seton Hall dorm, three students were killed in a fire at the Tau Kappa Epsilon House at Bloomsburg University in Pennsylvania. And in June of the same year, a student was killed in a fire at the Kappa-Sigma House near Millikin University in Illinois. Both fraternity houses were unsprinklered.

Fire isn't a rarity on college campuses, where students live in close proximity and often mix dangerous habits, such as smoking, with late-night studying and alcohol. Between 1994 and 1998, there were an average of 1,425 fires per year in college and university dorms, according to NFPA's Fire Analysis and Research Division.

by SHELLY REESE

photograph by ANDY RYAN
These fires accounted for 58 civilian injuries and roughly $6.3 million in property damage. During the same period, another 141 fires in fraternity and sorority houses accounted for an additional 17 injuries and roughly $2.8 million in property damage each year.

According to the U.S. National Center for Education Statistics, there are roughly 4,200 two- and four-year colleges and universities in the United States. Although comprehensive fire sprinkler data aren’t available, anecdotal information indicates that only a handful have dorms that are completely sprinklered.

A 1998 report by NFPA’s Fire Analysis and Research Division found that on average, property damage was 36 percent lower in 1989-1998 fires in dormitories and barracks when fire sprinklers were present. That low showing comes despite fire sprinklers’ demonstrated value: On average, property damage in sprinklered dormitories that experience fires was 41 percent lower than damage in dorms that didn’t have fire sprinklers.

**States not forcing the issue**

While fire sprinklers’ life- and property-saving features are well documented, states haven’t been clamoring to install them in college dormitories.

“Very few states are taking action, so change isn’t happening as a result of legislation,” says Ed Comeau, publisher of Campus Fire Watch, an online magazine that tracks the issue. “In the past three years, states have introduced more than two dozen pieces of legislation relating to the issue, and only about four of them have gone anywhere.”

Since the Seton Hall fire, a handful of states have passed laws pertaining to fire sprinklers on campus, most notably New Jersey, which requires them in dorms. Wisconsin requires high-rises of more than 60 feet (18 meters) to be sprinklered, and Pennsylvania passed a law giving the body that oversees the state’s higher-education the authority to subsidize fire sprinkler retrofits with bond issues.

Kentucky has passed “right to know” legislation that requires schools to make their fire policies and fire experience public.

In some states, local jurisdictions, such as Lawrence, Kansas; Boulder, Colorado; Durham, New Hampshire; State College, Pennsylvania; and Chapel Hill, North Carolina, have taken the lead, passing fire sprinkler mandates for dorms and Greek housing.

On the federal level, legislation that would make $80 million per year in matching funds available to public and private universities that installed fire sprinklers for the next five years was reintroduced in March after failing to make headway in the previous Congress. Right-to-know legislation, also introduced in the last Congress, is expected to resurface this year, too.

For the most part, however, the decision to retrofit existing dorms with fire sprinklers has largely been left to the universities themselves. According to Comeau, this means that change may take place only when an informed public demands colleges and universities attend to the issue of fire safety.

“Colleges aren’t putting Internet connections in dormitories because it’s being legislated,” Comeau says. “They’re putting them in because that’s what the public demands. It’s a matter of market forces. Parents are going to have to understand the need for fire sprinklers and pressure the universities to provide them.”

**A logistical challenge for colleges**

That higher-education facilities might be less than eager to undertake a major capital improvement is understandable. Thanks to rising operating costs and endowments trampled by Wall Street, money for such projects is scarce. What’s more, finding a window of opportunity to perform the work can be difficult.

At the University of Cincinnati in Ohio, where seven of nine dorms are sprinklered, the fire sprinklers had to be installed over a number of summers.

“We couldn’t retrofit the buildings while they were occupied, so we approached the problem one building at a time and, beginning in the mid-1990s, worked over a number of summers,” says Campus Safety Supervisor Lewis Watkins.

The remaining two dorms will either be renovated and retrofitted with fire sprinklers during the next few years or razed.

At the University of Texas in Austin, waiting until a dorm was vacant wasn’t always an option. To comply with Texas State Fire Marshal G. Mike Davis’ edict that all 5,000 residential buildings on Texas’ 49 state campuses comply with NFPA 101®, Life Safety Code®, by September 2004, UT
needed to retrofit its sprawling Jester Hall during the 2002 academic year. Jester, the largest dorm in the United States, houses 3,000 students, roughly half of UT's campus residents.

"It would have taken several years to get Jester sprinklered if we only worked during the summers," explains Doug Garrard, associate director of the university's Housing and Food Services. "That timetable was too slow for the state fire marshal."

So UT, with the help of Schirmer Engineering in Dallas, came up with an elaborate plan for installing the system, which complies with NFPA 13, Installation of Sprinkler Systems, while Jester was occupied. So much coordination was required that the UT Housing Department hired a special liaison just to coordinate the project. A BlazeMaster Fire Sprinkler System comprised of non-metallic pipe was installed.

By the time the six-year project is completed, UT will have spent $23 million on fire safety. In Wisconsin, complying with 1999 legislation requiring high-rise residence halls on state campuses to be sprinklered by January 2006 has also been a challenge, according to Paul Evans, director of housing for the University of Wisconsin at Madison. At the urging of the local fire department and the university's Safety Department, UW Madison began making plans to fire sprinkler its four high-rise dorms before the law was passed, but timetables and finances have been no less an issue.

"You're really facing three big challenges," says Evans. "First, there's the issue of time. We were putting in new alarms as well as fire sprinklers, so the dorms needed to be unoccupied, and summer is a very tight time period for getting all that done. Second, you're needed to retrofit its sprawling Jester Hall during the 2002 academic year. Jester, the largest dorm in the United States, houses 3,000 students, roughly half of UT's campus residents.

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FIRE ISN'T A RARITY ON COLLEGE CAMPUSES, WHERE STUDENTS LIVE IN CLOSE PROXIMITY AND OFTEN MIX DANGEROUS HABITS, SUCH AS SMOKING, WITH LATE-NIGHT STUDYING AND ALCOHOL.

Resident advisors held information sessions for students about a week before contractors moved into their particular areas and again several days before students' rooms were affected. The university provided students with packaging materials for their belongings, as well as explicit instructions for moving furniture and equipment.

On the day fire sprinklers were installed, students were told to leave their rooms by 8 a.m. and not to return until 5 p.m. A Housing Department staff member stayed on the floor while work was underway to allay concerns about theft, and digital photos were taken of each room before work began to ensure any damage claims were legitimate.

By retrofitting six to seven rooms a day, UT was able to complete the $11 million project in less than a year. Since then, nine more of the campus' 13 residence halls have been retrofitted with fire sprinklers and about 84 percent of the

Beauty is in the eyes of the beholder

While fire sprinklers may not be the

most physically attractive part of the dorms, the University of Cincinnati is quick to point them out to prospective students and their parents.

"It's definitely one of the things we want our campus guides to highlight," says Dawn Wilson, director of Resident Education and Development for UC. "I talk to a lot of parents, and each year about 20 or 30 will ask me if we have fire sprinklers in the dorms. Occasionally, someone will say to me, 'I'm glad because most aren't,' or 'I'm glad because it's a high-rise.' I think there's a growing awareness about fire safety on campuses, but it's still not an overwhelming force."

The sprinklered dorms comply with NFPA 13 and NFPA 25, Inspection, Testing, and Maintenance of Water-Based Fire Systems. Both standards are referenced by the State of Ohio Fire Code. In addition, the university used NFPA


Although guides don't highlight fire sprinklers during their campus tours, Wheaton College in Massachusetts has a similar regard for the fire sprinklers in its nine residential buildings.

"We made a $2 million investment in fire sprinklers and related work in 2001 and 2002," says Director of Communications Michael Graca. Because Wheaton doesn't have a summer term, the work was done during summer vacations. Additional water main service was added in the summer of 2001, and the dorms were sprinklered during the summer of 2002.

"It was a big investment, but we're talking about student safety, so I think it would be difficult to argue that it wasn't money well spent," he says. Still, the fire sprinklers aren't something Wheaton touts.

"We don't have any plans to make it a selling point, because we regard it as part of our school responsibility," Graca says.\
Simmons Hall, MIT

AS DIFFICULT AS retrofitting the fire safety systems of an existing high-rise dormitory may be, outfitting a new building can also pose challenges, particularly if the building is as complex as the architecturally astounding Simmons Hall on the campus of the Massachusetts Institute of Technology in Cambridge, Massachusetts.

Designed by Steven Holl Architects and opened in 2002, Simmons Hall is a contradiction in concrete. From the outside, the 350-bed residence resembles a vertical grid, 10 stories high and 330 feet (100.5 meters) long. Inside, however, the dormitory, which includes a 125-seat theater, a café, and a dining room, is a sponge-like series of curving, interconnected hallways, staircases, and atria that serve as student lounges.

The idea behind the design, according to project architect Tim Bade, was to encourage student interaction and a sense of openness. Another aim was to create an energy-efficient building. The architects hoped to take advantage of strong breezes off the Charles River to cross ventilate the building and bleed off some of the heat generated by its southern exposure.

But the 195,000-square-foot (18,115.5-square-meter) building’s open construction presented fire protection problems. While the architects originally hoped to apply performance-based fire protection to the structure, the proposals met with objections from the Cambridge Fire Department, which felt the proposed smoke evacuation system was too dependent on mechanical devices.

To resolve the problem, the architects separated stairwells and atria, using fire doors with magnetic closers. Functionally, the modifications made protecting the single high-rise more like protecting 10 two-story buildings with atria, Bade says.

In case of a fire, atrium doors on hold-opens automatically shut, and smoke fans operate to negatively pressurize the building. To prevent the space from becoming so pressurized that doors are difficult to open, low-level windows open automatically.

Because of the atria’s unusual shapes, the architects and Ove Arup, the fire protection engineering firm consulting on the project, used a three-dimensional computational fluid dynamic fire design to determine where smoke and heat would pool in the event of a fire. That model was used to determine where fire sprinklers should be placed.

Although the building is structurally unique, “at the end of the day, we ended up with a very conventional fire protection system,” says Mark Walsh-Cooke, Ove Arup’s project manager on the job.

Although the building technically has a double-loaded corridor design, which would require two staircases, the architects included six stairways, two of which merge, so egress wouldn’t be a problem.

The building is fully sprinklered in compliance with NFPA 13, Installation of Sprinkler Systems, and has a Simplex fire alarm system. Because of the concrete ceilings, pipes had to be run vertically, and fire sprinklers were mounted on the walls. To discourage students from using the fire sprinklers as convenient coat racks, they’re tucked behind light shelves, which protect them while providing ambient light in the rooms.

Because of the building’s irregular cross sections and fluid wall design, flexible CPVC piping was run through the atria walls to minimize friction in the system, which also adheres to the requirements of NFPA 14, Installation of Standpipe, Private Hydrants, and Hose Systems. The pipes are largely used to supply fire sprinklers in adjoining rooms. While the atria are partially protected by fire sprinklers concealed in the walls, upright fire sprinklers hidden in open areas just below the skylights provide most of the protection.

According to Ove Arup’s electrical project engineer Julian Astbury, in terms of alarm protection, a stand-alone combination “smoke/sounder line-voltage device” that functions much like a residential alarm protects each dorm room. If a student burning a bagel produced an excessive amount of smoke, the alarm would sound in the room, says Astbury, but it wouldn’t notify the fire department. If the main alarm is activated in the common space, there’s a link to the central campus system and the fire department.

MIT has a system that tracks the alarms. There’s also a fire command center room in Simmons, right near the front door that’s strictly for use by the fire department. The room has a has an electronic board that tracks the systems and includes a set of plans that shows details such as where you can drive a fire truck around the building, where you can get ladders to windows, which windows open.

To ensure residents can understand the alarms’ voice instructions, the alarm system has been tested for speech intelligibility in accordance with the International Standard on Speech Intelligibility referenced by NFPA 72®, National Fire Alarm Code®.
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FIRE SAFETY EDUCATION,

like apple pie and motherhood, is something everyone claims to support. In practice, however, fire safety educators often find that their time and resources are limited. Perhaps that’s why so many are cheering NFPA’s expanded Fire Prevention Week (FPW) Web site www.firepreventionweek.org.

According to Judy Comoletti, NFPA’s assistant vice president for Public Education, the Web site has become essential to implementing Fire Prevention Week each year.

“We heard from fire departments across North America that the online campaign tool kit made Fire Prevention Week easier to implement in their communities,” says Comoletti.

Amy LeBeau, NFPA public education specialist, explains that 2002 was the first year in which all the Fire Prevention Week materials were offered online.

“In previous years, the Fire Service Campaign Toolkit was printed and mailed to fire departments across North America,” she says.

Since 2002, LeBeau says, she’s heard positive comments from fire departments about the ease and convenience of downloading material.

“Offering materials online allows us to offer much more than the print version. The site has been extremely successful,” she says. >>
Gerri Penney, community education coordinator for the Palm Beach County, Florida, Fire Rescue Department, agrees.

“We can get all the information we need from the Web site, download things, and make copies to give to the school groups,” she says. “We also use the site to order through the NFPA catalog.”

Penney says that, before the Fire Service Campaign Toolkit was available online, NFPA did a good job of providing materials in advance of Fire Prevention Week—and the printed catalog offered many choices, too. But the Web site makes it easier.

“We can also provide the Web site address to teachers and let them choose the things they want and need,” she adds. And there are handy links from the Fire Prevention Week Web site to Risk Watch® (www.riskwatch.org), NFPA’s injury prevention and disaster preparation program, and the Sparky® the Fire Dog Web site, www.sparky.org.

More important than their convenience, says Penney, is the FPW materials’ effectiveness. By way of illustration, she cites the case of a second-grader at the Binks Forest Elementary School in Wellington, Florida, who learned about exit plans and meeting places from Lieutenant Bruce Young, a member of Penney’s department. The lessons, reinforced by Fire Prevention Week handouts, proved to be lifesavers. A scant two days later, the second-grader smelled smoke at home, woke his sleeping mother, and helped evacuate his younger sister and two teenage siblings.

Since June, the FPW Web site has offered fire departments and educators free materials linked to this year’s FPW theme, “When Fire Strikes: Get Out! Stay Out!” The site, which is updated periodically, includes ideas for classroom activities, take-home materials, articles, fact sheets, public service announcements, guides on conducting local media events, and a systematic media primer. There’s a section for kids, too, with links to www.sparky.org site, games, coloring sheets, and more.

According to LeBeau, the planning kit and the Web site have been expanded to include many new topics and features. For example, the site offers up-to-date statistical information from NFPA, as well as advice on installing and testing smoke alarms, available for purchase. “Must have” items, such as posters, banners, coloring books, pencils, and videos, can be purchased online through the NFPA catalog at www.nfpa.org/catalog.

Terry Campbell, of the Glenwood, Illinois, Fire Department, says he uses the FPW Web site to learn about the year’s theme and to plan activities.

“I check the site because there are usually helpful links to information for families and children about home fire escape planning, points of knowledge such as two ways out, [having a] meeting place, etc.,” he explains. He’s also used the sample municipal proclamation and downloadable public service announcements that are found in the Media Materials section of the Fire Service Campaign Toolkit.

Campbell is particularly enthusiastic about the downloadable home escape-planning grid.

“This has been tremendous because my classroom teachers can print one and copy them for their classes,” he says.

Teachers like the FPW Web site, too. Michele Clayton, NFPA Teacher of the Year for 2002, loves the materials the Web site has given her and her students.

Clayton, who teaches at the Leland Street Elementary School in San Pedro, California, says that the Web site provides a wealth of materials, ranging from worksheets for her first-graders to fact sheets that can be useful to parents. According to Clayton, most of the teachers at her school participate in Risk Watch, and she’s led some all-school activities.

“We distributed the home escape-planning grids to all grades and had more than 250 families participate,”

This year’s theme emphasizes the importance of home fire escape plans and smoke alarms.
Where There's Smoke, There's Science is NFPA's newest animated video designed to help kids understand the science facts behind fire safety behaviors.

she says. "That was one of the downloadable items we got through the Fire Prevention Week Web site."

Other elements of the site have also proven valuable to Clayton, who has integrated Fire Prevention Week into her entire curriculum.

As a teacher, she's especially pleased that the materials help her children do more than simply memorize answers to questions about fire.

"The children showed they could also demonstrate critical thinking about fire safety," she says. And the students she's taught have shown they can respond appropriately in real-life emergencies.

"They knew what to do and when to do it [because] they had internalized the information, and many have in turn taught their families and friends," she adds.

Dido Burne, mother of one of Clayton's students, can't say enough about Clayton or the materials she's provided.

"We now have a smoke alarm in every room because my son insisted," she explains, "and we have a home fire escape plan." What's more, says Burne, her son has taught the whole family what to do in case of a fire.

"As the official sponsor of FPW for over 80 years, NFPA is confident that the grassroots campaign does make a difference," says Comoletti.

"In fact, we have documented 81 lives saved as a direct result of the public's participation in FPW over the last six years."

In addition, the Web site, with its ease of use and around-the-clock availability, will greatly increase the effectiveness of Fire Prevention Week.

Getting the message OUT!

FIRE PREVENTION WEEK (FPW), which runs from October 5 to 11 this year, is the longest-running public health and safety observance on record in the United States. Sponsored by NFPA, it's intended to raise public awareness of the dangers of fire and of the simple measures everyone can take to prevent fire.

This year's theme, "When Fire Strikes: Get Out! Stay Out!" emphasizes the importance of home fire escape plans and smoke alarms.

"The theme underscores the importance of a quick response when the fire alarm sounds, and reminds everyone that, once safely out, they must stay out of the building until the fire department gives them permission to go back in," says Judy Comoletti, NFPA's assistant vice president for Public Education.

Comoletti notes that a 1999 NFPA survey found that only a quarter of all families in the United States had developed and practiced a home fire escape plan and only 4 out of 10 knew that they should leave the house immediately when a smoke alarm sounds.

Fire Prevention Week 2003 activities will also encourage families to make sure their smoke alarms work and to know what the smoke alarms sound like.

To ensure the FPW messages reach as large an audience as possible, funding partners Pella Corporation, and the Home Safety Council, are teaming up to support NFPA's annual Weekly Reader/Lifetime Learning Systems classroom program. The Weekly Reader program will reach more than 9 million children in the K-3 grades with life saving, fire safety messages.

WWW.NFPAJOURNAL.ORG NFPA JOURNAL SEPTEMBER/OCTOBER 2003 57
Firefighters battle a fire at a pallet company in Ohio May 6, 2002. As many as 30,000 wood pallets burned in a fire that apparently started when the owner of the business dropped a lit cigar.
Number of Fires
In 2002, public fire departments responded to 1,687,500 fires in the United States, according to estimates based on data NFPA received from fire departments responding to its 2002 National Fire Experience Survey (see Tables 1 and 2). This represents a decrease of 2.7 percent from 2001.

There was an estimated 519,000 structure fires in 2002, a very slight decrease of 0.5 percent or virtually no change from last year. For the 1997-2002 period, the number of structure fires was at its peak in 1977 when 1,098,000 structure fires occurred (see Figure 1). The number of structure fires then decreased quite steadily particularly in the 1980s to 688,000 by the end of 1989 for an overall decrease of 37.3 percent from 1977. Since 1989, structure fires again decreased quite steadily 24.7 percent to 517,500 by the end of 1998 and have stayed in the 517,500 to 519,000 area during 1999-2002 except for 2001.

Of the 2002 structure fires, 401,000 were residential fires, accounting for 77.3 percent of all structure fires, virtually no change from 2001. Of the residential fires 300,500 occurred in one-and two-family dwellings, accounting for 57.9 percent of all structure fires. Another 88,500 occurred in apartments accounting for 17.0 percent of all structure fires.

For nonresidential structures, all property types showed decreases in 2002. Nonresidential properties having notable decreases were: a decrease of 13.3 percent in institutional properties to 6,500; a decrease of 7.4 percent in industrial properties to 12,500; and a decrease of 6.7 percent in educational properties to 7,000.

For the 1977-2002 period, the number of outside fires were at their high in 1977 when 1,658,500 outside fires occurred. The number of outside fires decreased steadily the next six years to 1,011,000 in 1983 for a considerable decrease of 39.0 percent from 1977. Outside fires changed little for the rest of the 1980s except for 1988 when 1,214,000 occurred. Outside fires reached 910,500 in 1993, and stayed near the 1,000,000 level the next three years. In 1997-1998 outside fires were at the 850,000 level, went up 8.7 percent to 931,500 in 1999, before dropping a cumulative 9.9 percent in 2001-2002 to 839,000 by the end of 2002.

Civilian Fire Deaths
The 1,687,500 fires reported to by fire departments in the U.S. in 2002 resulted in an estimated 3,380 civilian deaths based on data reported to NFPA. This is a decrease of 9.8 percent from 2001, excluding the events of 9/11/01, where 2,326 civilian deaths occurred. The nature of this decrease is better understood when results are examined by property type.

An estimated 2,695 civilians died in residential fires in 2002, a decrease of 14.2 percent. Of these deaths, 390 occurred in apartment fires, a decrease of 14 percent. Another 2,280 civilians died in one- and two-family dwellings, a decrease of 14 percent. This is 370 less than in 2001 and the lowest figure since NFPA changed its survey methodology in 1977. Most of the decrease is due to a 25 percent drop in the death rate for communities that protect communities of 10,000 to 24,999, and a 45 percent drop in the death rate for departments that protect the smallest communities (populations of less than 2,500). Though encouraged by this drop in 2002, we must be cautious because death rates can vary considerably from year to year, particularly for smaller communities. We will closely monitor this to see if it's a 1-year anomaly or the start of a new trend.

In all, fires in the home (one- and two-family dwellings and apartments) resulted in 2,670 civilian deaths, a decrease of 14.1 percent from 2001. Looking at trends in civilian deaths since 1977-1978, several observations are worth noting (see Figure 3). Home fire deaths were at their peak in 1978 when 6,015 fire deaths occurred. Home fire deaths then decreased steadily during the 1979-1982 period except for 1981, and decreased a substantial 20 percent during the period to 4,820 by the end of 1982. From 1982 to 1988, the number of home fire deaths stayed quite level in the 4,655 to 4,955 area except for 1984 when 4,075 fire deaths occurred. In the past 13 years, home fire deaths moved below the 1982-1988 plateau and have remained in the 3,110 to 3,720 area during 1991 to 2002 except for 1996, 1999, and now 2002 with 2,670 deaths.

With home fire deaths still accounting for 2,670 fire deaths or 79 percent of all civilian deaths, fire safety initiatives targeted at the home remain the key to any reductions in the overall fire death toll. Five major strategies need to be followed. First, more widespread fire safety education is needed on preventing fires and how to avoid serious injury or death if fire occurs. Information on the common causes of fatal home fires should continue to be used in the design of fire safety education messages. Secondly, more people must use and maintain smoke detectors and develop and practice escape plans. Third, wider use of residential sprinklers must be aggressively pursued. Fourth, additional ways
to make home products more fire safe are needed. The regulations requiring more lighters that are child-resistant are a good example, as is the recent examination of the feasibility of less fire-prone cigarettes. The wider use of upholstered furniture and mattresses that are more resistant to cigarette ignitions is an example of change that has already accomplished much and will continue to do more. Finally, the special fire safety needs of high-risk groups, e.g., the young, older adults, and the poor need to be addressed.

An estimated 540 civilians died in highway vehicle fires, an increase of 14.9 from 2001, and the highest figure since 1998.

**Civilian Fire Injuries**

Results based on data reported to NFPA indicate that besides the 3,380 civilian fire deaths, there were 18,425 civilian fire injuries in 2002. This is a decrease of 9.2 percent from 2001, excluding the events of 9/11/01, where an estimated 800 civilians were injured.

Estimates of civilian fire injuries are on the low side, because many civilian injuries aren't reported to the fire service. For example, many injuries occur at small fires that fire departments don't respond to, and sometimes when departments do respond they may be unaware of injured persons that they didn't transport to medical facilities.

NFPA estimates that 14,050 civilians were injured in residential properties, a decrease of 9.8 percent. Of these injuries, 9,950 occurred in one- and two-family dwellings, while 3,700 occurred in apartments.

For the 1977-2002 period, the number of civilian injuries has ranged from a high of 31,275 in 1983 to a low of 18,425 in 2002 for an overall decrease of 41 percent. There was no consistent pattern going up or down until 1995, when injuries fell roughly 5,000 in 1994-1995 to 25,775, changed little in 1996, dropped 8 percent to 23,750 in 1997, changed little in 1998, dropped 5 percent in 1999, and then increased slightly in 2000, and then dropped 18 percent in 2001-2002 to 18,425 by the end of 2002.

**Property Loss**

NFPA estimates that the 1,687,500 fires responded to by the fire service caused $10,337,000,000 in property damage in 2002. This is a slight decrease of 2.2 percent from 2001, excluding the events of 9/11/01, where there was an estimated $33.8 billion in property loss.

Fires in structures resulted in an estimated $8,742,000,000 in property damage, a very slight decrease of 0.5 percent from 2001, again excluding the events of 9/11/01. Average loss per structure fire was $16,844, down a slight 1.0 percent from 2001.

Over the 1977-2002 period, and excluding the events of 9/11/01, the average loss per structure fire ranged from a low of $3,757 to a high of $17,016 in 2001 for an overall increase of 353 percent. When property loss is adjusted for inflation, the increase in the average structure fire loss between 1977 and 2001 is 56 percent.

Of the property loss in 2002, an estimated $6,055,000,000 occurred in residential properties, up a moderate 7.3 percent from 2001. An estimated $5,005,000,000 occurred in one- and two-family dwellings, up a moderate 7.6 percent from 2001. An estimated $926 million also occurred in apartments. Other property damage figures worth noting for 2002 include: $338 million in special structures, a significant increase of 73.3 percent; $92 million in educational properties, a sig-
significant decrease of 45.9 percent; $627 million in storage properties, a substantial decrease of 32.6 percent; $658 million in industrial properties a decrease of 23.3 percent.

It should be kept in mind that property loss totals could change dramatically from year-to-year because of the impact of occasional large loss fires. NFPA provides an analysis of these large loss fires in the November/December issue of NFPA Journal.

**Intentionally Set Fires**

Based on data reported by fire departments in the survey, NFPA estimates there were 44,500 intentionally set structure fires in the U.S. in 2002, a slight decrease of 2.2 percent from 2001. (Note NFPA survey is based on the newly revised NFIRS 5.0 system. This new system has an intentionally set category, which is equivalent to the old "incendiary" category. There's no new equivalent to the old "suspicious" category, which has been eliminated.)

These intentionally set structure fires resulted in an estimated 350 civilian deaths, an increase of 6.1 percent from 2001, excluding the events of 9/11/01 where 2,326 civilian deaths occurred. These set structure fires also resulted in $919 million in property loss, a decrease of 9.2 percent from 2001, again excluding the events of 9/11/01, where $33.8 billion in property loss occurred. In all, intentionally set fires accounted for 8.6 percent of all structure fires, but for 11.3 percent of the property loss.

Also in 2002, there were estimated 41,000 intentionally set vehicle fires, an increase of 3.8 percent from 2001. These set vehicle fires resulted in an estimated $222 million in property damage, a slight increase of 1.4 percent from 2001. In all, intentionally set vehicle fires accounted for 12.4 percent of all vehicle fires, but for 16 percent of the property loss.

NFPA annually surveys a sample of U.S. fire departments to make national projections of the fire problem. The sample is stratified by the size of the community protected by the fire department. All U.S. fire departments that protect communities of 100,000 or more are included in the sample, because they constitute a small number of departments with a large share of the total population protected. For departments that protect less than 100,000 population, a sample was selected stratified by size of community protected. Some 3,460 fire departments responded to the 2002 fire experience survey. The national projections are made by weighting sample results according to the proportion of total U.S. population accounted for by communities of each size.

For each estimate, a sampling or standard error was also calculated. The sampling error is a measure of the error caused by the fact that the estimates are based on a sampling of fire losses rather than a complete census of the fire problem. Because the survey is based on a random sample, we can be very confident that the actual value falls within the percentage noted in parentheses for each overall fire loss estimate: number of fires (1.7 percent), number of civilian deaths (8.8 percent), number of civilian injuries (5.2 percent), and property loss (2.6 percent).

The results presented in this report are based on fire incidents attended by public fire departments. No adjustments were made for unreported fires and losses (e.g., fires extinguished by the occupant). Also, no adjustments...
were made for fires attended solely by private fire brigades (e.g., industry and military installations), or for fires extinguished by fixed suppression systems with no fire department response.

**Definition of Terms**

Civilian: The term "civilian" includes anyone other than a firefighter, and covers public service personnel such as police officers, civil defense staff, non-fire service medical personnel, and utility company employees.

Death: An injury that occurred as a direct result of a fire that is fatal or becomes fatal within one year.

Fire: Any instance of uncon-
trolled burning. This includes combustion explosions and fires out on arrival. Excludes controlled burning (whether authorized or not), over pressure rupture without combustion, mutual aid responses, smoke scares, and hazardous responses (e.g., oil spill without fire).

Injury: Physical damage that’s suffered by a person as a direct result of fire and that requires (or should require) treatment by a practitioner of medicine (physician, nurse, paramedic, EMT) within one year of the incident (regardless of whether treatment was actually received), or results in at least one day of restricted activity immediately following the incident. Examples of injuries resulting from fire are smoke inhalation, burns, wounds and punctures, fractures, heart attacks (resulting from stress under fire condition), strains, and sprains.

Property Damage: Includes all forms of direct loss to contents, structure, machinery, a vehicle, vegetation or anything else involved in the fire but not indirect losses, such as business interruption or temporary shelter provisions.

Structure: An assembly of materials forming a construction for occupancy or use in such a manner as to serve a specific purpose. A building is a form of structure. Open platforms, bridges, roof assemblies over open storage or process areas, tents, air-supported, and grandstands are other forms of structures.

Vehicles, Highway, and other: Fires in these instances may have been associated with an accident, however, reported casualties and property loss should be the direct result of the fire only. Highway vehicles include any vehicle designed to operate normally on highways, e.g., automobiles, motorcycles, buses, trucks, trailers (not mobile homes on foundations), etc. Other vehicles include trains, boats and ships, aircraft, and farm and construction vehicles.

A detailed and complete report on the overall patterns and trends of 2002 is available from the Fire Analysis and Research Division. The report includes patterns by size of community; patterns by region and size of community; and a more complete description of survey methodology. The full report is scheduled to be available in November on NFPA’s web site, www.nfpa.org under One-Stop Data Shop. Hard copies can be ordered through Nancy Schwartz at (617) 984-7450 or osds@nfpa.org.

Footnotes
1. Note that NFPA changed its survey methodology in 1977-78, and meaningful comparisons cannot be made with fire statistics estimated before 1977.

<table>
<thead>
<tr>
<th>TABLE 4</th>
<th>Estimates of 2002 Civilian Fire Deaths and Injuries by Property Use</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CIVILIAN DEATHS</td>
</tr>
<tr>
<td></td>
<td>Estimate</td>
</tr>
<tr>
<td>Residential (total)</td>
<td>2,695</td>
</tr>
<tr>
<td>One-and-two-family dwellings</td>
<td>2,280</td>
</tr>
<tr>
<td>Apartments</td>
<td>390</td>
</tr>
<tr>
<td>Other Residential</td>
<td>25</td>
</tr>
<tr>
<td>Non-residential structures</td>
<td>80</td>
</tr>
<tr>
<td>Highway vehicles</td>
<td>540</td>
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<tr>
<td>Other vehicles</td>
<td>25</td>
</tr>
<tr>
<td>All other</td>
<td>40</td>
</tr>
<tr>
<td>Total</td>
<td>3,380</td>
</tr>
</tbody>
</table>

Estimates are based on data reported to NFPA by fire departments that responded to the 1999 National Fire Experience Survey. Note that most changes weren’t statistically significant; considerable year-to-year fluctuation is to be expected for many of these totals because of their small size.

The results in the percent change from 2001 above do not include the events of 9/11/01, where 2,926 civilian deaths and 800 civilian injuries occurred, and there was 323.8 billion in property loss.

* Includes manufactured homes.
** Statistically significant at the .05 level.

<table>
<thead>
<tr>
<th>TABLE 5</th>
<th>Estimate of 2002 Losses in Intentionally Set Structure Fires</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intentionally Set Structure Fires</td>
<td>Estimate</td>
</tr>
<tr>
<td>Number of Structure Fires</td>
<td>44,500</td>
</tr>
<tr>
<td>Civilian Deaths</td>
<td>350</td>
</tr>
<tr>
<td>Property Loss</td>
<td>$919,000,000</td>
</tr>
</tbody>
</table>

The estimates are based on data reported to NFPA by fire departments that responded to the 1999 National Fire Experience Survey. The reason in the percent change from 2001 described above do not include the events of 9/11/01, where 2,926 civilian deaths and 800 civilian injuries occurred, and there was 323.8 billion in property loss.

* The NFPA Survey is based on the newly revised NFIRS 5.0 System. This new system has an intentionally set category which is equivalent to the old incendiary category. There is no new equivalent to the old suspicious category, which has been eliminated.
It wasn't until his junior year, in the aftermath of a tornado that ripped across the University of Maryland (UM) campus, that fire protection engineering major Dennis Kovach got serious about becoming a volunteer firefighter.

Growing up in Columbus, Ohio, Kovach was one of those kids who'd always wanted to be a firefighter. His parents assumed it was just a phase. But when it came time to apply to colleges, he set his sights on one of the nation's premier fire protection engineering programs at UM.

At the beginning of his freshman year, Kovach intended to take advantage of the special relationship the university has with Prince George's County's 47 neighborhood fire departments. In return for becoming volunteers, students get free housing at local firehouses and training from the Maryland Fire and Rescue Institute (MFRI), which is part of UM. However, he had to drop the idea when he realized how demanding his course work would be. >>
“With school, I just didn’t have time to do it. I didn’t even make it to training before I quit,” says Kovach.

All that changed in the fall of 2001. Kovach and his friends were sitting in the Engineering Building when the wind picked up and the air pressure dropped. They watched in horror as a tornado blew across campus. Afterward, they sprang into action.

“We jumped into one of the guy’s cars and went to see if it had done any damage. We beat the first fire truck there,” Kovach recalls.

Kovach immediately joined in the rescue efforts.

“We ended up digging through rubble. With my EMS training, I found myself working in triage for the next three hours,” he says. “It was so overwhelming. We all felt like we could have done so much more if we’d only had the training and knew what we were doing.”

For students such as Kovach who participated in the rescue effort, the tornado made disaster response personal. It directly affected many of those in emergency services programs because it devastated trailers that were temporarily housing MFRI’s on-campus headquarters and, in a tragic coincidence, killed the two daughters of Pat Marlatt, associate director of MFRI. The girls died when the tornado flung their car several hundred yards. Marlatt himself was trapped in the rubble of the trailers.

By the time Kovach got back to classes days later, he’d made up his mind. Next time, he’d be prepared. He’d learn what he needed to save lives.

He soon joined the Berwyn Heights Volunteer Fire Department in Prince George’s County. As a volunteer, he’d be able to ride along while he worked nights to complete Firefighter I and Emergency Medical Technical training.

The day he graduated, Kovach and a team of other student volunteers responded to a working fire.

“We looked around and realized, all of us, we can do this. Two hours after graduation, and we’re already proving it,” says Kovach.

**Theory into practice**

The informal relationship between UM and the Prince George’s County fire service dates back to 1925, when a university chemistry professor started the College Park Volunteer Fire Department. The university gave the land for the current College Park fire station and provides $350,000 annually to help support the facility, which answers 50 percent of its fire calls on campus.

Carl Peterson credits his experience as a UM student volunteer firefighter in the early 1960s with giving him some of the foundation he needs for his work as NFPA assistant director of the Public Fire Division.

“In any discipline you come out with a lot of theory. But when you talk about smoke and heat, unless you’ve been there and experienced it, it’s one of those abstract things. Today, I work with technical committees on fire service codes and standards, and that experience gives me a good basis.”

Casey Grant echoes those sentiments. The NFPA assistant chief engineer was an UM student volunteer in the late 1970s.

“It gave me a deep appreciation for what I don’t know, and a core of respect for fire and the profession of firefighting.”

Today, students from all over the country come to UM to go into emergency services, and many of them end up as volunteer firefighters or EMTs at one of the county’s fire stations.

About a third of the 80 fire protection engineering majors are active volunteers in the area, according to Dr. James Milke, associate chair of the Fire Protection Engineering Department and a student firefighter at College Park in the 1970s. He sees many benefits to both the students and the academic program.

“Seeing a threatening fire firsthand is something we can’t reproduce in the classroom,” says Milke, an NFPA member. “With videotapes or slides or drawings on the blackboard, there’s no way to recreate that situation or to fully communicate the nature of fire and how it can change very quickly. As part of a class discussion where perhaps we’re talking about fire spread or smoke, the student volunteer firefighters will often make a comment, share their experience, and that’s very significant.

“We can talk about the losses that occur in a fire,” he adds. “But it hits
home when you see the actual damage, when you are involved in fire where someone is hurt, or where there's a death. Then the significant losses associated with fire become much more personal.”

**Demanding requirements**

Students who become volunteer firefighters have to juggle the demands of academics and emergency services.

College Park station volunteers, for example, must be full-time students at the university, maintain at least a 2.0 grade average, rotate coverage of 5 p.m. to 7 a.m. shifts, and complete a minimum of 100 hours of firefighting supervision. With two levels of certification, those who pass Firefighter II may operate without direct supervision. Those who pass Firefighter I may operate at a fire scene with supervision.

**Similar Programs**

A number of colleges have local fire stations manned by student volunteers. For instance, at Saint Michael's College in Colchester, Vermont, the firefighters and ambulance personnel of the Fire and Rescue Squad are student volunteers. Students at the University of Idaho can join the Moscow Volunteer Fire Department, receive training in fire, and live rent-free close to campus. The Wrightsville Beach Fire Department in North Carolina has a similar program for volunteer in outlying rural communities, and recently OSU began a program enabling their undergraduates in fire protection and safety technology to ride along as observers with the Stillwater Fire Department.

Worcester Polytechnic Institute undergraduates provide coverage in the nearby Massachusetts town of Auburn’s West Street Station, according to David Lucht, director of the Center for Firesafety Studies at WPI. This arrangement began a decade ago when the town was having financial difficulties and the station was slated for closure. An enterprising graduate student, Rich Pherson, made a proposal that Auburn couldn’t refuse. Pherson’s buddy, Ken Menke, now president of Powerarc Warning Lights, remembers, “Rich and I decided to see if we could get other graduate students back into firefighting, and agreed to assist Auburn with the gutting and renovation of the fire station in return for free room and board and daytime coverage through the use of student supplemental manpower.”

Menke served as general contractor, Pherson was the visionary. Together with a team of other graduate students, all experienced volunteer firefighters, and with a budget of about $5,000 from the town, they renovated the firehouse.

“In under a year, we had 10 dormitory-style rooms,” Menke says. “We were running a five-man engine piece out of the station. This was totally developed, implemented, and managed by students. In the early days, we wore hand-me-down equipment—red coats, black coats, yellow ones—which only made it more enjoyable because we thought of ourselves as renegades.”

**Mutual benefits**

The relationship between UM and the local fire services yields mutual benefits.

“The participation of University of Maryland students as volunteer firefighters in the College Park Fire Department is a win-win situation,” says Dr. C. D. Mote, Jr., UM president. “Students receive a unique blend of academic preparation and real-life experience, and they help maintain a high level of public safety for the faculty, staff, and students at our large and complex campus and for residents in surrounding neighborhoods.”

Steve Edwards, director of MFRI, says MFRI and the larger community benefit, as well. “[The student volunteers] bring us up to date on the use of technology,” he says. “At the same time, it gives College Park and Prince George’s County very highly trained, capable volunteer emergency-response personnel, and it’s very cost-effective.”

“I find it inspiring that these youngsters are able to go to school and even pass and get a degree,” says Peter Piringer, past president of the College Park Volunteer Fire Department and spokesperson for the Montgomery County Fire and Rescue Service in Maryland. Piringer was a volunteer firefighter when he was a student at UM.

“All that time that they give back to...
the community, we’re so proud of them. They’re leaders and great mentors for younger people,” he says. “It’s really good having them as part of our organization, making a significant contribution to community.”

**MFRI training based on NFPA standards**

MFRI has its main training center in College Park, as well as six regional training centers throughout the state. It offers a range of emergency services training programs. Last year alone, MFRI trained more than 28,000 people and conducted courses in 35 states and 17 foreign countries, according to MFRI Director Edwards.

“All the programs we conduct meet or exceed NFPA professional qualification standards, the 1000 series. That’s really the basis,” he says.

NFPA 1001, *Fire Fighter Professional Qualifications*, specifies minimum job performance requirements for firefighters. Originally, NFPA 1001 was written as a prescriptive standard and spelled out what a qualified firefighter needed to know—the names of the parts of the ladder, for example. In the 2002 edition, however, NFPA 1001 spells out what qualified firefighters needed to be able to do.

For example, here’s Section 5.3.6 in the Firefighter I chapter of the 2002 revision of NFPA 1001:

“Set up ground ladders, given single and extension ladders, an assignment, and team members if needed, so that hazards are assessed, the ladder is stable, the angle is correct for climbing, extension ladders are extended to the necessary height with the fly locked, the top is placed against a reliable structural component, and the assignment is accomplished.”

MFRI uses the NFPA 1001 job performance requirements to guide the development of its training and certification programs.

“The skill sets are identified, and students are then trained and certified in a very consistent manner,” says Edwards.

Kovach recalls having to pass both written and practical examinations to become a Firefighter I.

“There was a written midterm and a written final exam. Then there were more than 200 skills that had to be checked off. We’d go out in the parking lot, rain or shine or even in snow, and we’d all have to demonstrate everything from starting saws to forcible entry techniques, to advancing a hose line up and down a staircase and doing different hose rolls,” he says.

**Hands-on experience**

Prince George’s County has one of the busiest fire services in the county, serving the needs of the Washington D.C., metropolitan area. According to Piringer, the College Park department’s call volume is well over 100,000 per year.

**STUDENT VOLUNTEERS GET A LOT OF HANDS-ON EXPERIENCE IN PRINCE GEORGE’S COUNTY**

As a result, student volunteers get a lot of hands-on experience. Take Steve Kerber, for example. A senior fire protection engineering major, Kerber has been a volunteer firefighter for Prince George’s County since the beginning of his freshman year, living at the College Park firehouse. Already a volunteer in his Pennsylvania hometown, Kerber was certified as a Firefighter I and EMT when he arrived as a freshman. These days, he’s on duty an average of 50 to 60 hours a week. He estimates that he’ll have responded to well over 3,000 calls by the time he graduates.

Prince George’s County awarded Kerber a medal of valor in October 2002 for rescuing a critically injured university maintenance worker after an explosion. Kerber remembers that call.

“There was a report of a person electrocuted in the Physics Building,” he says. “I was the officer on the first due engine. As we got closer, the report was upgraded to smoke in the building also. We weren’t expecting that much, just an electrical panel blew up.”

What Kerber and two other student volunteers found when they arrived was a smoke-filled inferno in which university employee Kurt Tassche was trapped, unconscious. Police on the scene had been unable to reach him.

Kerber crawled into the intense heat and smoke, electrical panels exploding and popping around him, and pulled Tassche out of the flames. Waiting in the ambulance to take the injured man to the hospital was another UM student, Emergency Medical Technician Caroline Wright. She treated the victim at the scene and transported him to the burn unit at Washington Hospital Center, where he died a week later of lung damage.

Wright, one of a handful of women student volunteers, became a volunteer EMT to get a taste of medicine before applying to medical school. In the last year, she estimates she’s been on 350 ambulance calls. What she’s learned, she says, she could never have learned in a classroom.

“There are some things they can never teach you at school,” she notes. “How to interact with people, how to deal with patients, how to think on your feet, how to make decisions based on limited information—those are all things you can’t really learn any other way except by experience. And it’s rewarding. You can feel like you’re serving your own community, the one you’re a part of.”

**Students continue to give back**

“Almost 100 percent of our current volunteer force is UM alumni and current students,” says College Park Fire Chief Fred Welsh, who began his own firefighting career as a volunteer and UM student.

This fall, UM graduate Kovach plans to follow that tradition. During the week, he’ll be a risk-control engineer at American Electric Power in Columbus, Ohio.

But like those who’ve gone before him, he’ll come back on the weekends to volunteer.
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These are just a few of the newspaper headlines of tragic multiple-fatality fires of 2002. In 2002, 160 people died in 32 catastrophic multiple-death fires, compared to the previous year when 183 people died in 35 such fires, excluding the events of September 11, 2001. Of these 160 deaths, 20 were firefighters. >>
CATASTROPHIC MULTIPLE-DEATH FIRES

by STEPHEN G. BADGER AND ROBERT S. McCARthy

Boston firefighters work on a multiple alarm fire on a row house building in Boston March 18, 2002.
FOR THIS STUDY, "catastrophic multiple-death fires" are defined as fires that kill five or more people in a residential property, or three or more in a nonresidential or nonstructural property. The area of origin, cause, existence of smoke alarms, and location of victims are provided if known. A table containing additional information, such as the state where the fire occurred, month, time of alarm, number of victims under age 6, construction type, and contributing factors, accompanies this article.

Catastrophic residential fires
In 2002, the largest share of catastrophic multiple-death fires occurred in residential structures. This year's study includes 16 residential fires; 14 in single-family dwellings (3 of these were manufactured homes), 1 in a 3-story, 2-unit dwelling with a store on the first floor, and 1 in an unlicensed rooming house. As a percentage of the total, these occupancies accounted for 59.3 percent of the catastrophic fires in 2002. There were 95 deaths in these fires, down from 125 in 2001, a 24 percent reduction. Thirty children under the age of 6 perished in these fires, compared to 35 in 2001. Eleven of the 16 catastrophic residential fires occurred between 11 p.m. and 7 a.m. Table 1 breaks down this information.

The deadliest residential catastrophic fire occurred in Louisiana when 8 people (2 under age 6) were killed in an early morning fire in a 2-family dwelling. A portable electric space heater ignited a couch, spreading fire throughout the structure. There were no smoke alarms present and appeared to have operated. Furnace-ductwork and a furnace motor contributed to the spread of intense smoke into a closed second-story bathroom where the victims, a pregnant woman and her 5 children, chose to retreat.

The third fire started in the kitchen of the second-floor apartment of a 3-story residential dwelling with a store on the ground floor when hot cooking oil ignited kitchen cabinets. An occupant attempted to extinguish the fire before fleeing the building and leaving the apartment door open. The fire extended throughout the second-story apartment and through the open door to the third story via an interior stairwell, blocking that egress path. The fire also extended out a rear window, blocking the fire escape as a means of egress. There were no smoke alarms present. All 7 victims were occupants of the third-story apartment where 6 victims were found; the seventh was found on the second story, apparently after falling through burned-out floor boards.

The fourth fire was an incendiary fire in a 3-story row house. Details on that fire are unavailable due to ongoing litigation.

A Baltimore police department arson and bomb unit van is parked across the street from a rowhouse in Baltimore, where five children died along with an adult family member after a fire tore through the house.

Four other fires claimed the lives of 6 people each. The first fire began in the living room of a 1-story single-family home when an extension cord supplying an air conditioner overheated, igniting the carpet and furniture. There were no smoke alarms and the rear door had been permanently blocked, trapping the occupants.

The second fire began when furniture placed on top of an extension cord caused an overheating condition, which ignited nearby combustibles. All the victims were found in a first-story bedroom. Due to ongoing investiga-
tions, details are unavailable on the other 6-fatality fires, 1 of which killed 3 firefighters.

Seven catastrophic residential fires killed 5 people each. Six of these fires were in 1- or 2-family dwellings including a manufactured home. The cause of 4 fires was undetermined or not reported. One of the 3 fires with a known cause began in a first-story bedroom when a short circuit in a wall outlet ignited nearby combustibles. The fire rapidly spread throughout the structure. There were no smoke alarms to warn the victims of the early morning fire. The fire blocked the front exit, and smoke overcame 2 adults and 3 children. The second fire followed an explosion caused by a propane leak in the basement that was ignited by an undetermined source. The blast demolished the home in which the 5 victims were sleeping. Four victims were found in the yard where they were propelled by the blast, and 1 was found in the basement.

The last fire occurred in a single-story unlicensed boarding house. The fire began when a resident’s bedding was kicked off and came into contact with the electric baseboard heaters. It wasn’t reported if smoke alarms were present. A passing police car spotted the blaze.

Catastrophic nonresidential fires

Five catastrophic nonresidential fires killed 22 people. In comparison, 2001 had 5 such fires that killed 19 people (not including the September 11 attacks). The fires occurred in a correctional facility, a manufacturing property, a hunting lodge that was a members only club in remote area, a store, and a storage building. Table 2 breaks down this information.

The deadliest nonresidential structure fire of 2002 took place in a 2-story county jail in North Carolina. The cause of this fire hasn’t been released, but 8 lives were lost. At about 10:05 p.m., the on-duty jailer called 911 to report a fire in the jail. At the time of the fire, there were approximately 15 inmates in the jail. It was not reported if the victims were in their cells at the time of the fire. The jailer and trustees attempted a rescue but were driven back by heavy smoke and heat. All 8 victims were inmates. Upon arrival, firefighters were faced with heavy fire conditions in the rear of the building and heavy smoke conditions in the rest of the building, including the jail cell and office areas. Seven of the 8 victims were located on the second story and the eighth was on the ground floor.

Five people died and several people were seriously injured in a rubber dust explosion and ensuing fire at a facility that manufactured rubber products. The fire originated in the rubber-dryer system. The dryer’s fire suppression system activated but didn’t fully extinguish the fire. The remaining heat ignited available fuel in the dryer and spread embers through a vent pipe, igniting the roof. The fire then spread to the bagging room where rubber dust ignited and exploded.

Three fires account for 3 deaths each. The first was in a hunting lodge. No cause or origin of this fire has been reported. The second fire occurred when heat from an incinerator used to clean parts ignited wood structural members. Three firefighters were trapped when the roof collapsed.

The third fire was in a storage building where an area was used as a sleeping area for 3 people. A long extension cord was run from a nearby house to provide power for a space heater and several appliances. The cord was inadequate for the load it carried, it overheated, and ignited nearby combustibles.

Catastrophic nonstructural fires

Seven of the catastrophic nonstructural fires involved vehicles and these can be the most difficult in determining the cause of death. Every effort is made to distinguish between impact and fire fatalities. The other 4 fires were wildland-related incidents. These 11 catastrophic fires outside of structures killed 43 people, up from the previous year when 8 such fires killed 32 people. Table 3 shows this information.

The deadliest nonstructural fire killed 6 passengers in a twin-engine aircraft that crashed in New Hampshire shortly after take off. The crash occurred in a wooded area, and the aircraft burst into flames shortly after impact. Two other people died of impact injuries in this crash. No information on the cause of this crash has been released.

Three other fires killed 5 people each. Two of these incidents were multi-vehicle collisions on interstate highways. The first occurred on a 4-lane highway when dense fog and smoke from a nearby woods fire obscured drivers’ vision. Several vehicles collided and caught fire, trapping the victims in their vehicle. The second incident began when a tractor trailer truck collided with a taxicab carrying four passengers and the driver. Seconds later, a second truck collided with the first truck. The taxi became engulfed in fire along with the 2 cabs of the tractor-trailer rigs. The truck drivers escaped the fire.

The third crash involved a van with 11 wildland firefighters onboard on their way to a wildland fire. The driver lost control and the van rolled over, killing 5 firefighters.
One post-crash fire involving multiple vehicles killed 4 people on an interstate highway. No details on this crash were reported.

Six fires killed three each. The first one involved a multi-vehicle crash on an interstate highway. Smoke and fog obscured the highway at the time of the crash. The second involved a van carrying five people that caught fire while being driven. The driver stopped to investigate and found a fire underneath the vehicle. She was only able to rescue 1 child. The final 3 incidents involved wildland firefighting operations. Two involved the crash of aircraft while dropping fire retardant, and the third occurred when a fire truck rolled off a roadway and down a ravine.

Roles of smoke alarms and fire sprinklers
In this year’s study, only 8 of the residential fire reports contained information on smoke detection equipment. In 4 of the fires, there was no system present; 3 did have a system and the presence of a system for the last fire was undetermined. Smoke alarms operated in 2 of 3 fires where equipment was present; the operation of the third system wasn’t reported. No reason was given for the system that didn’t activate. Seventeen people died in these 3 fires. In a fire where smoke alarms operated, the victims chose to retreat to what they thought was a safe haven, which proved deadly. In the other fire where smoke alarms operated, it’s unknown if the detection system alerted the occupants. In the 4 properties with no detection equipment, 25 people lost their lives.

These fires demonstrate the severe consequences that can occur in the absence of working smoke alarms. Many of the fatalities in this year’s study could have been avoided if properly operating and maintained smoke alarms were present. The most effective and reliable home system is one with hard-wired interconnected smoke alarms, with battery backup, on each level and in each bedroom.

Households should routinely test smoke alarms according to manufacturers’ recommendations. Batteries should be replaced yearly. NFPA 72®, National Fire Alarm Code®, recommends testing residential smoke alarms monthly.

Smoke alarms are only effective if occupants exit the building when they sound. Children, in particular, should become familiar with the sound of a properly operating smoke alarm. In this year’s study, 30 children under age 6 were killed in residential fires. They should be taught to follow a practiced escape plan, which emphasizes two ways out with a designated meeting place. Exit drills in the home are part of many schools’ curriculum. Practicing the plan would help families determine if children or others don’t readily waken to the sound of a smoke alarm, and that, along with assistance for family members who require it, can be factored into the plan. Practicing sound fire prevention principles could have prevented many of the fires.

Residential fire sprinklers will play an important role in home fire protection in the coming years. New construction and major renovations lend themselves to fire sprinkler installations. None of last year’s residential occupancies were protected by fire sprinkler systems.

In nonresidential properties, an automatic suppression system with alarms along with a sound safety program, and adequate number of fire extinguishers would go a long way in reducing fire losses. In this year’s study only 2 of the 5 non-residential catastrophic structure fires had information reported on the presence of suppression equipment. One property had an unreported coverage system that was effective in controlling the spread of the fire in the bagging area, distant from the equipment that was involved with the fire’s ignition, and adjacent to the area of explosion. The other property had no system present. Information on the presence of automatic detection equipment was reported in two fires. One had no system and the other had a complete system of heat detectors but it was unknown if the system activated.

Acknowledgments
NFPA thanks the U.S. fire service for their contributions of data, without which this report wouldn’t be possible. The author would like to thank his co-workers for their guidance in the completion of this report.

Where we got our data
NFPA obtains its data by reviewing national and local news media, including fire service publications. A news clipping service reads all daily U.S. newspapers and notifies the NFPA Fire Analysis and Research Division of catastrophic fires. Once an incident has been identified, we request information from the local fire department or the agency having jurisdiction. NFPA’s annual survey of U.S. fire experience and mailings to state fire marshals are additional data sources, although not principal ones. We also contact federal agencies that have participated in the investigation of such fires. The diversity and redundancy of these sources enable us to collect the most complete data available on catastrophic fires in the United States.

STEPHEN G. BADGER is a Fire Data Assistant in NFPA’s Fire Analysis and Research Division and is a firefighter with the Quincy, Massachusetts, Fire Department in Massachusetts.

ROBERT S. MCCARTHY was a Fire Data Assistant in NFPA’s Fire Analysis and Research Division and a retired Lieutenant from the Quincy Fire Department in Massachusetts. We are saddened to report that Bob passed away during the information gathering stage of this study, and too early into his retirement from the fire department. We’ve lost a knowledgeable and wonderful human being. It was an honor and privilege to have been a coworker with “BooBoo” both here, at the NFPA and on the Quincy Fire Department.

The September 11th terrorist attacks accounted for, resulted in 2,789 deaths.
### Residential Table One

<table>
<thead>
<tr>
<th>DEATHS</th>
<th>STATE</th>
<th>OCCUPANCY</th>
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<tr>
<td>8</td>
<td>DE</td>
<td>Two-Family Duplex</td>
<td>January</td>
<td>Electric space heater</td>
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<tr>
<td>7</td>
<td>OH</td>
<td>Single-Family Dwelling</td>
<td>January</td>
<td>Undetermined</td>
</tr>
<tr>
<td>7</td>
<td>MO</td>
<td>Single-Family Dwelling</td>
<td>January</td>
<td>Kitchen stove</td>
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<tr>
<td>7</td>
<td>NY</td>
<td>Two Apartments Above Store</td>
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<td>7</td>
<td>MD</td>
<td>Row House</td>
<td>October</td>
<td>Arson</td>
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<td>6</td>
<td>NC</td>
<td>Single-Family Dwelling</td>
<td>June</td>
<td>Overheated extension cord</td>
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<tr>
<td>6</td>
<td>LA</td>
<td>Single-Family Dwelling</td>
<td>August</td>
<td>Overheated extension cord</td>
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<td>6</td>
<td>NJ</td>
<td>Single-Family Dwelling</td>
<td>July</td>
<td>Not reported</td>
</tr>
<tr>
<td>6</td>
<td>MS</td>
<td>Manufactured Home</td>
<td>October</td>
<td>Not reported</td>
</tr>
<tr>
<td>5</td>
<td>GA</td>
<td>Manufactured Home</td>
<td>January</td>
<td>Undetermined</td>
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<tr>
<td>5</td>
<td>MS</td>
<td>Single-Family Dwelling</td>
<td>January</td>
<td>Not reported</td>
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<td>5</td>
<td>PA</td>
<td>Single-Family Dwelling</td>
<td>February</td>
<td>Short circuit in wall outlet</td>
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<td>MI</td>
<td>Single-Family Dwelling</td>
<td>September</td>
<td>Electric baseboard heater</td>
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<td>5</td>
<td>PA</td>
<td>Single-Family Dwelling</td>
<td>December</td>
<td>Not reported</td>
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<tr>
<td>5</td>
<td>AK</td>
<td>Two-Family Duplex</td>
<td>December</td>
<td>Undetermined, involved Christmas tree</td>
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### Nonresidential Table Two

<table>
<thead>
<tr>
<th>DEATHS</th>
<th>STATE</th>
<th>OCCUPANCY</th>
<th>MONTH</th>
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<tr>
<td>8</td>
<td>NC</td>
<td>County Jail</td>
<td>May</td>
<td>Not reported</td>
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<td>5</td>
<td>MS</td>
<td>Rubber Reclaiming Plant</td>
<td>May</td>
<td>Explosion</td>
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<td>3</td>
<td>AL</td>
<td>Hunting Lodge</td>
<td>November</td>
<td>Not reported</td>
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<tr>
<td>3</td>
<td>OR</td>
<td>Auto Parts Store</td>
<td>November</td>
<td>Heat from incinerator</td>
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<tr>
<td>3</td>
<td>MO</td>
<td>Storage Building</td>
<td>December</td>
<td>Malfunctioning electrical cord</td>
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### Nonstructural Table Three

<table>
<thead>
<tr>
<th>DEATHS</th>
<th>STATE</th>
<th>VEHICLE/VENUE</th>
<th>MONTH</th>
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<tbody>
<tr>
<td>6</td>
<td>NH</td>
<td>Twin-Engine Aircraft/Wooded Area</td>
<td>September</td>
<td>Crash</td>
</tr>
<tr>
<td>5</td>
<td>SC</td>
<td>Multi-Vehicle/Interstate Highway</td>
<td>March</td>
<td>Crash</td>
</tr>
<tr>
<td>5</td>
<td>CO</td>
<td>Van/Interstate Highway</td>
<td>June</td>
<td>Crash</td>
</tr>
<tr>
<td>5</td>
<td>FL</td>
<td>Multi-Vehicle/Interstate Highway</td>
<td>November</td>
<td>Crash</td>
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<tr>
<td>4</td>
<td>WA</td>
<td>Interstate Highway</td>
<td>August</td>
<td>Not reported</td>
</tr>
<tr>
<td>3</td>
<td>NM</td>
<td>Motor Vehicle/Interstate Highway</td>
<td>March</td>
<td>Grass fire on median</td>
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<tr>
<td>3</td>
<td>MN</td>
<td>Motor Vehicle/Suburban Roadway</td>
<td>June</td>
<td>Mechanical problems</td>
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<tr>
<td>3</td>
<td>CA</td>
<td>Aircraft/Suppression Mission</td>
<td>June</td>
<td>Crash</td>
</tr>
<tr>
<td>3</td>
<td>CO</td>
<td>Aircraft/Suppression Mission</td>
<td>July</td>
<td>Crash</td>
</tr>
<tr>
<td>3</td>
<td>CA</td>
<td>Fire Apparatus/Wildland Fire</td>
<td>July</td>
<td>Crash</td>
</tr>
<tr>
<td>3</td>
<td>AK</td>
<td>Trailer Truck/Interstate Highway</td>
<td>July</td>
<td>Diesel fuel from fuel tank</td>
</tr>
</tbody>
</table>
In the Rhode Island fire, a major contributor to the number of lives lost was the simple fact that too many people relied on one exit, although others were available. And the major life losses at the E2 club in Chicago resulted from group panic at the release of mace. Fire sprinklers will not solve either of those problems.

It’s common knowledge that people faced with an emergency will try to leave a building the same way they came in, even when they are aware of other exits. They’ll even go through a hazardous environment to do so. In both these tragic events, lives would have been saved had security personnel been trained to recognize the hazards more quickly and take immediate steps to divide and direct the crowds towards separate exits.

I propose that, along with additional requirements for fire sprinklers, we require fire and life safety plans for these occupancies that include trained personnel and that our inspectors ask to see those plans and training schedules during their regular inspections.

I would never minimize the importance of fire sprinklers. In this case, however, I think we need to address all the contributing factors, so that we truly do everything we can to keep this type of tragedy from happening again.

Ead Diment
Portland Fire and Rescue
Board of Directors
NFPA Education Section

Public Fire Educators Take Note...
Another Can’t-Miss Education Section Program for the 2003 Fall Education Conference!

Again, the NFPA Education Section has put together a “can’t-miss” group of dynamic program offerings for the 2003 Fall Education Conference, to be held from November 15 to 19 in beautiful Reno, Nevada! This is the first time the meeting will be held in conjunction with the Western Chiefs and Educators Conference, so it promises to be well attended by fire educators and allied fire protection professionals. In addition to the section’s program offerings, listed below, the Western Chiefs Education Section will sponsor a number of seminars.

There has never been a better way for fire educators to enhance their professional development and stay abreast of the ever-changing and challenging education scene. It’s really quite simple: You can’t afford not to be there!

NFPA Education Section Programs
Reaching High Risk Audiences
Pre-conference seminar and NFA class.

How to Build a Successful Team with a Pointy Head, a Flat Top, and a Perfect Square
Working in a coalition with people who have different learning styles.

Education Section Business Meeting
Community and Personal Healing
Don’t Put Your CART Before Your CERT
Local Motion
A showcase of local education programs.

Education Section Dinner
Tuesday evening’s can’t-miss event!

Safer Homes, Safer Families
Juvenile Firesetters...Scary Ignitions

For complete information, including days and times, visit www.nfpa.org.

HOW TO REACH US: Judy Comoletti, Executive Secretary, +1-617-984-7287, jcomolet@nfpa.org
Electrical

WEB SITE: http://www.nfpa.org/electrical

HOT ISSUES

Electrical Topics at 2003 NFPA Fall Education Conference

The 2003 NFPA Fall Education Conference will be held November 15 through 19 at the Reno Hilton in Reno, Nevada. Several programs of interest to members of the electrical industry are scheduled.

NFPA 70E, Electrical Safety Requirements for Employee Workplaces

This seminar will review the development and implementation of an electrical safety program, covering key aspects, such as identifying electrical hazards, complying with applicable regulations, assessing the site, and formulating and implementing the program.

Static Electricity, an Ignition Source

The presenter will describe the nature of electrostatic discharge, its common sources, and its ignition potential in hot zones, comparing discharge energy levels with minimum ignition energy levels of various mixtures. Several case studies will be examined to determine the electrostatic charge ignition mechanism, and mitigation strategies will be discussed.

NEC forum: Mark Your Calendars Now!

Plan now to attend the second NEC forum, the National Electrical Code® Users Symposium and Exhibition, to be held in conjunction with the NFPA World Safety Congress and Exposition (WSCE) from May 23 to 26, 2004, in Salt Lake City, Utah. This educational symposium will feature a full slate of programs pertaining to the NEC®, worker and workplace electrical safety, emerging issues in the electrical industry, and electrical design. Those attending the NEC forum will have the opportunity to stay for the Technical Committee Report (TCR) session, at which the 2005 NEC will be presented to the NFPA membership for adoption. At the TCR session, one of the final steps in the three-year NEC development cycle, you’ll have an opportunity to observe an important component of NFPA’s open, consensus codes- and standards-development process.

In addition, the Electrical Section will sponsor reports from the 19 NEC code-making panel chairs on proposed changes to the 2005 NEC, the 50th edition of the world’s preeminent electrical installation code. To commemorate this special anniversary, the Electrical Section is planning two receptions and a dinner at which you can network with professionals from all areas of the industry.

Plan to attend necforum and take advantage of this unparalleled learning event. Registration information is available at www.necdigest.org and www.nfpa.org.

Codes and Standards Forum

This forum will identify the major revisions to the 2005 NEC, the 50th edition of the world’s preeminent electrical installation code. To commemorate this special anniversary, the Electrical Section is planning two receptions and a dinner at which you can network with professionals from all areas of the industry.

Plan to attend the 2005 NEC ROC Panel Sessions on Wednesday, November 19.

For complete details on the conference, visit our website at www.nfpa.org or call (800) 344-3555.

Schedule for the 2005 NEC ROC Panel Meetings

DECEMBER 1 TO 13, 2003, DOUBLETREE HOTEL, MISSION VALLEY, SAN DIEGO, CALIFORNIA

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| Panel 2 | Panel 1 |
| Panel 5 | O Panel 3 |
| Panel 6 | F Panel 8 |
| Panel 7 | Panel 8 |
| Panel 4 | Panel 6 |
| Panel 9 | Panel 18 |
| Panel 10 | Panel 11 |
| Panel 11 | Panel 12 |
| Panel 12 | Panel 13 |
| Panel 13 | Panel 14 |
| Panel 14 | Panel 19 |
| Panel 15 | NFPA 780 E Panel 17 |

HOW TO REACH US: Jeff Sargent, Executive Secretary, +1-617-984-7442, jsargent@nfpa.org

Fire Science and Technology Educators

WEB SITE: http://www.nfpa.org/firescience

HOT ISSUES

Fire Science and Technology Educators Participate in Conference at Fire Academy

During the first week of June, nearly 150 people gathered at the National Fire Academy in Emmitsburg, Maryland, to attend the fifth annual Fire and Emergency Services Higher Education (FESHE) Conference. Most came from the academic community, where they are program chairs in fire science or fire technology programs from across the country, although many state training directors, who usually manage the training and certification programs, also attended. Many were also members of NFPA’s Fire Science and Technology Educator Section.

A major theme of this conference was facilitating the process of bringing together training, certification, and education programs in our profession. Another theme was the process of professional designation, addressed by conference keynote speaker, Randy Bruegman, president of the International Association of Fire Chiefs.

The IAFC, which supports the FESHE efforts, is developing a national system to recognize competency in fire officers, leading to a Chief Fire Officer designation. An integral part of that process is education. While there are approximately 200 individuals certified in that system so far, Bruegman envisions that this designation will eventually be a prerequisite for fire chiefs in the nation’s larger departments.

HOW TO REACH US: Frank Florence, Executive Secretary, +1-617-984-7480, fflorence@nfpa.org
The section’s Education Committee is working to validate CEU credits for the codes and standards review process. It was generally agreed that providing certification would encourage more members to attend future meetings. You no doubt noticed that Judy and Pete Gregor were absent from the Dallas meeting and that the Health Care Section information room was not the same without their friendly greetings and smiling faces. The good news is that they will be back in action at the Reno meeting.

We look forward to seeing many of you at “The Biggest Little City in the World” in November!

**Nominations for 2003 Fall Meeting**

The Health Care Section membership will vote on following nominations at the 2003 Fall Education Conference, to be held in Reno from November 15 to 19:

- **Director:** Thomas Salamone
- **Director:** Phillip Thomas

Additional nominations will be placed before section members, along with the Nominating Committee’s nominations, if the Executive Secretary receives the nominations in writing at least 15 days before the HCS business meeting on Tuesday, November 18. Such nominations must be accompanied by signed, documented support from 30 or more Health Care Section members.

**Section Will Sponsor Two Programs at 2003 Fall Education Meeting**

The HCS will sponsor its traditional four-hour codes and standards review at the 2003 Fall Education Conference in Reno. In this is a very popular program, members of the Codes and Standards Review Committee discuss the documents, proposals, and comments that directly affect the health-care industry, and address the positions the section proposes take. There is open discussion, as well. Among the codes due up for adoption are:

- NFPA 53, Recommended Practice on Materials, Equipment, and Systems Used in Oxygen-Enriched Environments
- NFPA 58, Liquefied Petroleum Gas Code
- NFPA 59, Utility LP-Gas Plant Code
- NFPA 82, Incinerators and Waste and Linen Handling Systems and Equipment
- NFPA 101A, Guide on Alternative Approaches to Life Safety
- NFPA 1600, Disaster/Emergency Management and Business Continuity Programs
- NFPA 2001, Clean Agent Fire Extinguishing Systems

The section will also hold a four-hour training program on Chapter 5, “Gas and Vacuum Systems,” of NFPA 99, Health Care Facilities. Dave Mohile of Medical Engineering Services, Inc. and chair of the Technical Committee on Piping Systems will present this informative program. Anyone responsible for maintaining medical gas and vacuum systems should attend this program.

**Comments for the Executive Secretary**

Send any comments for the Executive Secretary or for the Executive Board to Richard P. Bielen, P.E., at NFPA, 90 Batterymarch Park, Quincy, MA 02169 or email them to rbielen@nfpa.org. And remember to check the HCS home page for additional information about the section.

**Section Membership**

At last count, section membership stood at 3,453, 64 more members than the section had in November 2002. The trend is encouraging. Thanks to all for helping the section grow. If you know anyone interested in joining the HCS, please have them contact Executive Secretary Rich Bielen.

**HOW TO REACH US:** Richard Bielen, Executive Secretary, +1-617-984-7279, rbielen@nfpa.org
International Fire Marshals Association
WEB SITE: http://www.nfpa.org/ifma
CHAIR: Ron Farr, Kalamazoo Township Fire Department

HOT ISSUES
IFMA Testifies at Standards Council meeting
On behalf of IFMA, Immediate Past-President Ronald Farr testified in support of the revised TIAs submitted to the Assembly Technical Committee as a result of the Station fire in West Warwick, Rhode Island. IFMA’s representative on the committee also attended a committee meeting held before the Standards Council meeting to voice the section’s concerns and assisted in drafting the revised TIA language that was forwarded to the Standards Council for consideration.

Section Participates in Alcohol-Based Hand-Rub Solution Meeting
IFMA has been invited to participate in a meeting called by the American Society for Healthcare Engineering to discuss the use and placement of alcohol-based hand-rub solutions in health-care facilities. The meeting will discuss the issues and determine possible solutions.

Professional Development
The International Fire Marshals Association Fire Protection Institute currently offers two training programs, the “Management Institute for Fire Marshals” and the “Principles of Fire Protection Engineering.” The next “Principles of Fire Protection Engineering” course will be held from September 29 to October 2 in Baltimore, Maryland. Anyone interested in attending or sponsoring a program may contact Executive Secretary Steven F. Sawyer at (617) 984-7423 or ssawyer@nfpa.org. For complete details, visit www.nfpa.org/ifma.

IFMA Directory
We are currently updating our membership records in anticipation of publishing our membership directory. As a section member benefit, the directory, which costs you nothing, is an effective tool to facilitate communication among section members, giving you direct access to an expansive network of colleagues who can help you solve problems faster and offer insight into the latest technology and trends.

The free listing will include your name, title, organization, address, phone, and fax numbers. Your email address will not be printed. You’ll be listed in the directory unless you send Section Executive Secretary Steve Sawyer an email indicating you do not wish to be included.

And don’t forget... IFMA turns 100 in 2006. If you have any ideas how to celebrate the occasion, please contact Committee Chair John Robison at firemarshal@insurance.state.al.us.

HOW TO REACH US: Steven Sawyer, Executive Secretary, +1-617-984-7423, ssawyer@nfpa.org

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Meet Our Newest Board Member

Diane May, Security and Property Conservation Supervisor for MeadWestvaco's Luke mill, is the newest member of the Industrial Fire Protection Section (IFPS) Board. Diane has been employed in industry for the past 22 years and coordinated the Luke mill's fire prevention week efforts that won the Industrial Section's Fire Prevention Award in 1998, 1999, and 2001. Diane has an associate's degree in Nursing from Allegany College, a bachelor's degree in Fire Science Management from the University of Maryland University College, and a master's degree in Education/Management from Frostburg State University. Diane's primary responsibilities at the Luke mill include supervising 21 security officers; loss prevention planning; overseeing property conservation inspections and programs; and training in-house EMS and HM teams, as well as the Luke Fire Department. Diane is also a part-time instructor/trainer for the University of Maryland Fire and Rescue Institute and has volunteered as a Firefighter/EMT for the past 27 years.

MeadWestvaco's mill in Luke, Maryland, was founded in 1888 and employs nearly 1,400 people. Three state-of-the-art paper machines operate 24 hours a day, 7 days a week, to produce more than 1,350 tons (1,225 metric tons) of coated printing paper each day. Products manufactured at Luke are used in books, magazines, and catalogs, as well as for can and bottle labels. The Luke mill is unique in that it's spread across three counties and two states: Allegany and Garrett Counties in Maryland and Mineral County, West Virginia.

IFPS Education Sessions at 2003 Fall Education Conference

The Industrial Fire Protection Section offers a variety of relevant educational topics for those planning to join us at our 2003 Fall Education Conference from November 15 to 19 in Reno, Nevada. The Board has prepared four sessions for this year's meeting that should offer something for all the attendees. "Atmospheric Monitoring" focuses on the operation, calibration, and maintenance of portable field instrumentation used to monitor atmospheric levels of oxygen and flammable, combustible, and toxic gases and vapors. This session includes hands-on exercises with current instrumentation. "Hot Work—An Overview of Safe Work Practices" identifies common hazards associated with hot work and details safe practices and procedures based on NFPA 51B, Cutting, Welding and Other Hot Work. "Hazard Communication, Classification, and NFPA 704" provides instruction in the use of NFPA 704, Standard System for the Identification of the Hazards of Materials to Emergency Responders. Presenters will introduce the standard and teach participants how to apply its
criteria. Attendees will also receive checklists and worksheets to help them develop ratings and will participate in group activities to demonstrate their understanding of the standard, its criteria, and the practical aspects of rating specific materials.

"Do's and Don'ts for Permitting Propane Storage Facilities" brings industry experts from the National Propane Gas Association together with an authority having jurisdiction to discuss how to apply the requirements found in NFPA 58, Liquefied Petroleum Gas Code.

For more details on these sessions and the complete program, check www.nfpa.org. We hope to see you in Reno!

Industrial Section 2003 Fire Prevention Week Contest
Don't forget to submit your Fire Prevention Week program and activities to the annual IFPS Fire Prevention Week (FPW) contest. This year, the theme—"When Fire Strikes: Get Out, Stay Out!"—teaches two important messages: install and regularly test smoke detectors and develop and practice an escape plan. Smoke and fire can spread through a structure in moments, making fire prevention education and escape planning absolutely essential. Tell us about your company and community activities, and you might be the next recipient of the section's prestigious Fire Prevention Week award.

For more information on the contest and instructions on entering, visit the IFPS web site at www.nfpa.org.

HOW TO REACH US: Guy Colonna, Executive Secretary, NFPA, +1-617-984-7435, gcollenoa@nfpa.org

Latin American
WEB SITE: http://www.nfpa.org/latinamerican
SECTION CHAIR: Eduardo Abé, Tecin Rosenbauer S.A., Buenos Aires, Argentina

HOT ISSUES
Section Elects New President
During our annual Americas' Fire Expo meeting in Miami last July, section members elected José Figueroa section president for a two-year term. Figueroa, FM Global's general manager for Latin America, has been the section's vice-president since 2001 and on the board of directors since 1998.

Currently, Figueroa lives in Dallas, where he directs all global insurance and reinsurance programs of the network's service partners throughout the region. He has held engineering management positions at FM Global since 1983, serving in Paris, São Paulo, Turin, and New York. Before joining FM, Figueroa was a quality control consultant at Ford Motor Company. He earned a degree in mechanical engineering from the Universidad de Carabobo in Valencia, Venezuela, in 1973 and an MBA from the Université de Paris-Dauphine in France in 1982.

Figueroa, who was named Risk Manager of the Year by the ABGR (Brazilian Association of Risk Managers) in 1995, has assumed various roles on the section's board of directors, often representing NFPA at events in Latin America. He has also taken the initiative in discussing with Venezuelan leaders the possibility of forming a chapter in that country.

The section's past chair, Eduardo Abé, will serve a two-year term on the Nominating Committee, along with Fernando Katayama of Peru and Luis Cestari of Venezuela.

HOW TO REACH US: Olga Caledonia, Executive Secretary, +1-617-984-7231, ocaledonia@nfpa.org

Lodging Industry
WEB SITE: http://www.nfpa.org/lodging
CHAIR: Thomas Daly, Hilton Hotel Corporation

HOT ISSUES
INN THIS CORNER
by THOMAS G. DALY

WMDs (Wanting More Details)
In our post-9/11 world, everyone who travels is acutely aware of safety, not only in airports and aircraft but in lodging accommodations, as well. And so it should be. We face a clear and present danger in this new world of fanatical violence.

Lodging operators now find they are being asked about the safety and security of their facilities. And that is a two-edged sword. How much do we reveal to assuage the concerns of our guests, and how much do we keep private to ensure the integrity of our systems, equipment, and procedures?

Fire safety is an integral part of the overall emergency preparedness of any lodging facility, and it is one facet of our guests’ concern with safety that we can disclose without much downside.

Most of a hotel's fire protection equipment and systems are plainly visible to anyone who looks for them. Fire alarm notification appliances, smoke detectors, standpipes, fire extinguishers, sprinklers, exit making, and emergency evacuation route signage and instructions are all there to be seen. Even the fire alarm and communications control panel may be in full view at the front desk. A diligent meeting planner can get records related to the routine testing and maintenance of such equipment and systems by issuing a formal request to the authority having jurisdiction (AHJ), and additional fire prevention inspection records may be available as public records. It might take a Freedom of Information Act (FOIA) request to get them, but you can probably find them one way or another.

Fire drills are required by Subsections 28.7.1 and 29.7.1 of the 2003 edition of the Life Safety Code. Guests may even be subjected to periodic fire alarm testing, although their concern for safety may wane as the bells, horns, slow whoops, or temporal pattern continue unabated for several
minutes. Meeting planners and curious guests may better receive a carefully worded and vetted statement about the hotel's fire safety preparedness than a reactive, incomplete statement by a front desk clerk who may not know all the details and could give the wrong impression. Think of such a statement as positive PR that will result in a return on your considerable financial and time investment in fire protection.

This is not a one-way street, however. Guests, once informed, must react in the event of an actual or reported fire. The hotel expects them to evacuate or relocate promptly and in an orderly fashion and to notify management of incipient fires. Trust me, we are in this together. It doesn't take a village. It takes personal responsibility on everyone's part.

With apologies to the late Barry Goldwater, Sr., "extremism in the pursuit of diligence is no vice. Moderation in the face of terrorism is no virtue."

Even Aldous Huxley could not have predicted this brave new world.

Thomas Daly is chair of the NFPA Lodging Industry Section.

HOW TO REACH US: Russ Sanders, Executive Secretary, +1-502-894-0411, rsanders@nfpa.org

Metropolitan Fire Chiefs
WEB SITE: http://www.nfpa.org/metro

SECTION CHAIR: Mario Trevino, Chief, San Francisco, California

HOT ISSUES
Metro Chiefs Meet in Calgary

From June 28 through July 2, nearly 100 metropolitan fire chiefs from throughout the world met in Calgary, Alberta, for the IAFC/NFPA Metro Fire Chiefs Section Conference. Led by Chief Wayne Morris, members of the Calgary Fire Department (CFD) hosted this prestigious event in grand style. Members of the Metro Section have become accustomed to excellence, and no one left Calgary disappointed.

The conference opened with music provided by the CFD's own Cappy Smart Band and greetings from Calgary Deputy Chief Steve Dongworth, Chief Morris, San Francisco Chief and Metro Chair Mario Trevino, and Calgary Deputy Mayor Madeleine King. Following the traditional greetings, conference attendees were treated to a special First Nations welcome from Chief Hal Eagletail, along with children and elders of the tribe. The evening also included a moving tribute to fallen firefighters throughout the world performed by the CFD Honor Guard. The opening ceremony proved to be a fitting prelude to a conference that continued the Metro's long tradition of excellence.

The speaker sessions began early Monday morning and continued through Wednesday evening. Attending chiefs and guests received greetings and updates from IAFF General President Harold Schaitberger, USFA Administrator Dave Paulison, NFPA President Jim Shannnon, United States Surgeon General Dr. Richard Carmona, Major Cities Police Chiefs President Harold Hurtt, and IAFC/NFPA Board Member Luther Fincher.

The education program included indepth presentations on residential sprinklers, the relationship between fire chiefs and city managers, community partnerships, and much more. In addition, FDNY Chief of the Department Frank Crutters discussed the September 11 tragedy and recovery efforts, London Fire Commissioner Ken Knight spoke about the United Kingdom fire dispute, Robert Saba and Steve Hanes provided a firefighting technology update, and Phil Schaeeman reviewed emergency management challenges and issues. These topics and speakers are just a small sample of the conference program, which also included presentations and panel discussions by Chiefs David Daniels, Charlie Dickinson, Kelvin Cochran, Gary Morris, Glenn Maddess, Tom Steidel, Tim Fuller, and Bill McCammon.

The social program was simply spectacular. Events included pre-conference excursions to Lake Louise and the City of Banff, located in the beautiful Canadian Rocky Mountains, and, of course, the traditional golf outing. Evening activities began on Saturday with a visit to Canada Olympic Park, a 1988 Winter Olympic Games venue, where chiefs and guests tested their skills on the luge and skeleton runs in the "ice house," the only facility of its type in the world. Other exciting venues included a rodeo with the Rockies as a backdrop, tours of the Rainforest and African Savannah at the Calgary Zoo, and much more.

Following five days of hard work and fun, everyone came together one last time for the closing event, Diamonds and Denim. This fabulous evening began with our traditional photo session and receptions. Throughout the evening chiefs and guests were entertained by the world-class Vancouver Fire Department Band, the Vancouver Fire Department Jazz Band, and the CFD Cappy Smart Band.

As emcee, Russ Sanders opened the closing ceremony by introducing Metro Chair Mario Trevino, whose first order of business was to thank the Calgary Fire Department for being such a wonderful host. Before he could get the words out of his mouth, however, attendees jumped to their feet for one of many prolonged and well-deserved standing ovations for the Calgary Fire Department's leadership and staff.

By popular demand, Chief Morris came to the podium and expressed his heartfelt thanks to all members of the Calgary Fire Department. As Chief Morris put it, "These are the best people in the world." Chief Morris then presented a beautiful framed picture to his conference team leader, Beth Hetherington. Beth, in turn, showed off the stained and worn crying towels that last year's conference hosts, Chief Attilio Leonard, Assistant Chief Wayne Nojiri, and Julie Ono, presented to her in Honolulu. Beth passed new towels to next year's hosts, Chief Dennis Smith, Kim Angelo, and Darren Taylor, assuring them that their towels would soon be worn and frazzled, too!

During the closing ceremony, new executive committee members were sworn into office, and four members received awards from their peers. First up was Chair Trevino, who presented the "Chair's Award" to Wes Shoemaker of Winnipeg, Manitoba, and the "Award of Distinction" to Charlie Dickinson of Pittsburgh, Pennsylvania (retired). These awards are given at the discretion of the Metro Chair. Chair Trevino also presented a beautiful framed picture to Sacha Dick in appreciation for her hard work as the IAFC liaison to the Metro Section.

as
Awards Chair Kelvin Cochran was up next to present the "Life Time Achievement Award" to Dave Paulison of Miami, Florida, and the "Fire Chief of the Year Award" to Harold Hariston of Philadelphia, Pennsylvania. These awards are voted on by the entire Metro membership.

The only remaining founding member of the Metro Section, Joe Redden, handled the final official act of the evening by issuing the oath of office to the new officers and executive committee members:

Chair
Wes Shoemaker, Winnipeg, Manitoba, California

Vice-Chair
Rebecca Denlinger, Cobb County, Georgia

Secretary
Kelvin Cochran, Shreveport, Louisiana

Treasurer
Bill McCammon, Alameda County, California

Board Member
Robert Ojeda, San Antonio, Texas

Senior Board Member
Tim Fuller, St. Paul, Minnesota (retired)

Alternate Board Member
Otis Latin, Ft. Lauderdale, Florida

Immediate Past Chair
Mario Trevino, San Francisco, California

Newly elected Chair Wes Shoemaker closed the session and brought perspective to the week's events when he asked his wife, Lori, to join him on the podium as he delivered a powerful message about the importance of family and friends. This has certainly been a special month for the Shoemaker family, as just a few weeks ago Lori and Wes were blessed with a beautiful baby boy.

Next year's annual conference will be held in Sacramento, California, from May 22 to 27. Visit http://www.cityofsacramento.org/fire/metrochiefs2004 for additional information.

Two Metro business meeting will be held before the annual meeting, the first in conjunction with Fire Rescue International on August 24 in Dallas, Texas, and the second at the Fall Education Conference in Reno, Nevada, on November 16, 2003. These meetings are open to all Metro members. For more information, visit www.nfpa.org.metro or contact Metro Executive Secretary Russ Sanders at (502) 894-0411 or rsanders@nfpa.org.

HOW TO REACH US: Russ Sanders, Executive Secretary, +1-502-894-0411, rsanders@nfpa.org

Rail Transportation Systems
WEB SITE: http://www.nfpa.org/rail
SECTION CHAIR: James Gourley, Fire Protection Engineer, Glenside, Pennsylvania

HOW TO REACH US: Jim Lake, Executive Secretary, +1-617-984-7470, jlake@nfpa.org

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Research
WEB SITE: http://www.nfpa.org/researchsection
CHAIR: Samuel Dannaway, Dannaway and Assoc.

HOT ISSUES
8th Suppression and Detection Research Application Symposium to Be Held
Mark your calendars for the Fire Protection Research Foundation's eighth annual user-oriented "Fire Suppression and Detection research Application Symposium" at the Holiday Inn Select Orlando International Airport, from January 21 to 23, 2004. The theme of the symposium is "Bridging the Gap" between practitioners and researchers, and between detection and suppression innovations. Fire protection engineers, fire prevention officers, code writers, and researchers will present approximately 30 papers detailing the results of a variety of current fire suppression and detection research initiatives.

For more information, contact conference coordinator Eric Peterson at epeterson@nfpa.org or phone (617) 984-7281.

HOW TO REACH US: John Hall, Executive Secretary, +1-617-984-7460, jhall@nfpa.org

Wildland Fire Management
WEB SITE: http://www.nfpa.org/wildland
CHAIR: Bill Terry, USDA Forest Service

HOT ISSUES
North Carolina's "First Fire" Presents Many Firsts
by GARY C. WOOD
The First Fire of 2003, which began in a remote area of eastern North Carolina, wasn't the first fire the North Carolina Division of Forest Resources (NCDFR) ever had to deal with, but it did provide the NCDFR with a number of other firsts. Looking back, the incident couldn't have been more appropriately named!

The first major fire on the U.S. Air Force's Dare County Bombing Range and the first forest fire in the state this year, the First Fire was also the first major fire in Bob Houseman's region since he was promoted to Regional Forester. In addition, it was the first fire in North Carolina to which NCIMT-II, a newly formed incident management team (IMT), was deployed, and the first at which District Forester Roger Stallard used an IMT in his district since becoming the district forester a few years ago. To top it all off, the fire occurred near Kitty Hawk, the site of man's first plane flight!

The fire, which started on May 12 and burned 2,330 acres (943 hectares) of forest land, surprised us because unusually wet spring had reduced fire activity to well below our 10-year average for May.

When the fire began, I was serving as duty officer for the division, and NCIMT-II, for which I'm liaison officer, was on call. I'd just arrived at the ballpark to attend my son's baseball game when I received a page from Robin Carter, NCDFR public information officer, asking me to call her. She had just gotten a phone call from Regional Forester Hildreth. As the briefing began, it became clear that I could be very busy. The U.S. Air Force's Dare County Bombing Range and detection research initiatives. Fire protection engineers, fire prevention officers, code writers, and researchers will present approximately 30 papers detailing the results of a variety of current fire suppression and detection research initiatives.

For more information, contact conference coordinator Eric Peterson at epeterson@nfpa.org or phone (617) 984-7281.

HOW TO REACH US: John Hall, Executive Secretary, +1-617-984-7460, jhall@nfpa.org
Force wanted us to get the bombing range open as soon as possible. Our country was at war, and air strikes had been key contributors to our success. Homeland Security was at risk, and we had an elevated alert level for possible terrorist attacks.

One of our objectives was to brief Range Control daily on the status of the fire and suppression operations. Since the fire was burning on USF&W lands, too, I'd also be involved with their personnel and with the Stumpy Point Fire Department, which had a pumper positioned at the only structure currently being threatened.

This area has deep organic soil that can present terrible smoke problems to roadways, airports, and towns during dry conditions. It was too wet for a deep-seated ground fire, but there was enough dry turf on top to make residual burning a threat to U.S. 264. The North Carolina Department of Transportation (NCDOT) had already placed message boards along the highway, warning motorist of possible smoke on the roadway.

When we finished our briefing, we had a strategy meeting, established our incident objectives, and assumed command of the First Fire.

Hildreth and I met to discuss interagency issues, and he gave me my direction. Roger Stallard was assigned Deputy IC and agreed to help me with any issues regarding the Air Force bombing range, since he worked with the Air Force regularly. I also met with Tom Crews, Alligator River District Fire Management Officer for the USF&W, who joined us as a resource advisor, and I contacted the Stumpy Point Fire Department.

Our IMT got off to a good start. Many of us had worked together before, but this was the first time we had come together for a real incident, and our training showed. Our briefings went smoothly, inter-team communications were great, our inter-agency counterparts worked along side us, and we made progress containing the fire. Roger Stallard briefed the Air Force daily, and I briefed their Natural Resource Managers. I also arranged for a helicopter flight for them so they could survey the extent of damage in the fire area, and I contacted NCDOT personnel to arrange to move the message boards and place additional warning signs near the fire area. Everything flowed well.

The fire was contained late on Friday, May 16, and NCIMT-II transferred command to Stallard's district team. Select personnel from NCIMT-II were left to provide support through the weekend.

The key to our success as an IMT was our training and the working relationships we had with all the parties involved. We knew what to expect from each other and from the USAF, USF&W, NCDOT, and the Stumpy Point Fire Department. We understood each other's operations, concerns, abilities, limitations, responsibilities, personalities, and expectations before the fire even began, so the ordeal was far less complicated than it would have been otherwise.

This may have been NCIMT-II's "First Fire," but it won't be its last. The "Last One" Fire occurred two years ago about 70 miles north of the First Fire!

Gary C. Wood is NCIMT-II Fire Department Training Specialist with the North Carolina Division of Forest Resources and eastern director of the NFPA Wildland Fire Management Section.
The NFPA 1 seminar covers the new comprehensive set of requirements for fire and life safety and property protection created by the merger of the two most widely adopted fire codes in the nation, NFPA 1 and the Western Fire Chiefs Association's Uniform Fire Code™. In this course, you will learn why, how, and when to use NFPA 1/UFC and how to manage life safety and property protection issues, including automatic sprinklers, standpipes, occupancy operating features, exits, fire lanes, and hazardous materials.

The NFPA 99 seminar provides an overview of the hazards hospital engineers, medical personnel, designers, and enforcers must consider, focusing in particular on electrical and medical gas systems. Participants will learn how to use NFPA 99 to find general requirements and those specific to particular types of health-care occupancies.

The NFPA 921 seminar focuses on fire investigations, detailing the administration, methodology, fire science, and legal considerations today's fire investigator faces. Also featured are fire patterns, the behavior of electricity and fire, fire management, origin and cause determination, and incendiaryism.

Since NFPA 58 is up for vote at the meeting, the one-day NFPA 58 seminar will update participants on the latest provisions for liquefied petroleum gas installations, including equipment, installation of liquefied petroleum gas systems, fire safety analysis requirements, container filling, cylinder storage, and transportation of liquefied petroleum gas.

We're also offering the Certified Fire Protection Specialist (CFPS) Primer from 8 a.m. to 4:30 p.m. on Friday and Saturday. The CFPS credential, which doesn't require an engineering degree, is internationally recognized as a mark of achievement in the fire protection field and is the only program that specifically addresses the fire protection technologist. Those planning to take the CFPS exam in Reno on Sunday, November 16, must submit an application by October 29, 2003. For more information, go to www.nfpa.org/certification.

If you can’t attend these pre-conference seminars, you may be able to make the seminars we offer in a city near you. Or call us, and we can arrange to have NFPA’s expert trainers present their material at your facility. Among the seminars we offer all year are “Life Safety Code Essentials,” “Life Safety for Health Care; “National Electrical Code” Essentials;” “Electrical Safety in the Workplace;” “Hazardous Locations;” and “Electrical Standard for Industrial Machinery.” There are also seminars covering the National Fire Alarm Code; fire alarm inspection, testing, and maintenance; sprinkler system installation; and fire pumps.
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Dates


STRUCTURAL OPS FROM PAGE 28

leave the building. Thus, firefighters should conduct a primary and secondary search when conditions permit safe entry.

As with other occupancies, the best first action at a school fire is usually to extinguish the blaze and eliminate the major hazard to students, staff, visitors, and firefighters. If firefighters cannot immediately extinguish or control the fire with attack lines, they must protect the means of egress. Students and staff may be trapped in rooms that do not have direct access to the outside at ground level, so controlling the egress paths, including the hallways and stairways, is critical. In these cases, ladder rescues may become necessary.

Students and staff can best be protected from school fires when firefighters develop a pre-incident plan of the buildings; use the school's established accountability process; organize joint training exercises, including evacuation drills; and apply sound tactics.

INSIDE THE BELTWAY FROM PAGE 34

wrote in its fourth annual report, "There will be very little prospect for answering the question 'How well prepared are we?' " The commission was highlighting the need to develop standards for WMD response plans and simulations.

In June, the Independent Task Force on Emergency Responders, sponsored by the Council on Foreign Relations, reported that, because of the lack of "preparedness standards, it is difficult to know what we need and how much it will cost" to prepare first responders for their duties.

Here, too, the NFPA has a relevant standard: NFPA 1600 Disaster/Emergency Management and Business Continuity Programs. But this is a general standard that may have to be beefed up to meet the need to which the Gilmore Commission and the task force alluded.

Congress could inject some immediacy into the situation by directing

>>page 90
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the DHS to press for such standards. In fact, the Senate has taken a run at this in the past. In October 2002, the Senate Environment and Public Works Committee reported the First Responders Terrorism Preparedness Act (S. 2664), which would have authorized the Federal Emergency Management Agency, now part of DHS, to "establish clearly defined standards and guidelines for federal, state, tribal, and local government terrorism preparedness and response." The bill failed.

Sen. James Inhofe (R-Okla.), chair of the Environment and Public Works Committee, has reintroduced the proposed legislation as S. 930 in this session. It's a bill whose time has come.

distributed reports that are provided to the NFPA code-development committees and may stimulate committee action to develop code proposals. "Jurisdictions across the country and many in California rely on this technical information to justify public safety policy on the state and local level," Tennant wrote. "This information is also helpful to code officials when considering equivalencies or alternate materials and methods of construction. NFPA is the only code purveyor to provide this service."

NFPA is also the only model code developer with an on-scene fire investigations function, he said, and NFPA has a unique ability in its code adoption process that facilitates the introduction of emergency code amendments. "This makes it much easier on the adopting state agency if the provision is already a part of the model code. This process quickly rectifies flaws with our codes at the discovery of a problem, usually after a tragic fire," Tennant said.

As the official sponsor of Fire Prevention Week for the past 81 years, NFPA is committed to providing the support and materials needed to continue the longest-running public health and safety observance on record in the United States. But the success of Fire Prevention Week 2003 also depends on the dedicated firefighters, who bring the annual campaign into their communities, and on our funding partners, who bring the Weekly Reader project into classrooms throughout North America. Corey's homework assignment will be completed in less than 30 minutes. It's a small investment to protect the ones you love.

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September 2 to September 5
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This conference is sponsored by the Shanghai Fire Bureau, Security and Crime Prevention Technology Administration of Shanghai Public Security Bureau, Shanghai Union International Exhibition Company. For more information, visit http://bbs.fire.sh.cn/zhanlan/wuliue.htm.

AFSA 22nd Annual Convention & Exhibition
September 10 to September 14
Boca Raton, Florida
For registration or exhibitor information, contact Marlene Garrett at (214) 349-5965.

Building Integration Solutions Conference
September 17 to September 20
Austin, Texas
Co-sponsors are the Building Futures Council, Portland Cement Association, Society of Fire Protection Engineers, Structural Engineering Institute, OSHA, and NFPA. For more information, go to www.acstitute.org/conference.htm

Principles of Fire Protection Engineering
September 29 to October 2
Baltimore, Maryland
Course consists of 10 sessions over a period of four days. The sessions involve the following engineering educational subject areas. For more information, go to www.nfpa.org/MemberSections/IFMA/Training/Training.asp

Oil and Gas Technology
October 1 to October 4
Jakarta, Indonesia
To learn more about this event including contact and list of previous exhibitors, download the conference brochure at www.the-eic.com/events/appforms/OGT003.pdf.

The 3rd National Forum on Building Smarter in the Digital Age
October 20
Portland, Oregon
This program is held in conjunction with the Joint NCSBCS/AMCBO annual conference. Call Carolyn Fitch at (800) 362-2633 ext. 238 with any questions.

Strategies for Performance in the Aftermath of the World Trade Center
October 21 to 23
Kuala Lumpur, Malaysia
NFPA is a co-sponsor of this event on changes and improvements made following the World Trade Center and Pentagon attacks. For more information, visit www.cibklutm.com/conference_registration.htm.

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The Fenwal Leak Detection System consists of a patented Leak Detection Cable that runs throughout the protected area and links to a control unit. The Fenwal LDZ4 and LDZ8 Leak Detection Zone Controllers monitor up to 1,000 feet (305 meters) of the special cable per zone. For larger areas, the Fenwal LD5000 Distance-Read Leak Detection System pinpoints leaks in 5,000 foot (1,524 meter) long cable systems. For more information visit www.fenwalfire.com.

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FIRE PUMP CONTROLLER
The FDM Medium Voltage Microprocessor-based Fire Pump Controller is based on the AMPGARD controller design, which incorporates Eaton's industry leading Cutler-Hammer TRITON SL Series Medium Voltage Vacuum Contactor. The SL-400 Contactor utilizes vacuum interrupters that exhibit a long electrical life and a high interruption capacity and are available from 2200 - 7200 volts.

Circle Reader Service Card No. 103
We are now accepting proposals for educational presentations at NFPA's 2004 World Safety Conference and Exposition® (WSCE). We invite you to share your experience and expertise with your peers in the field of fire and life safety as a presenter in Salt Lake City, Utah, May 23-27, 2004. Please complete the form below in full and return, via mail, e-mail, or fax to NFPA by September 26, 2003. Presentations should be non-commercial in nature and specific brand names should not be mentioned. All presentation proposals will be reviewed by the Sessions Committee and selections will be made based on quality, relevance, focus, practical application, timeliness and on the presenter's experience and credentials.

### Presentation Submission Form

(Please type or print clearly.)

| Title of presentation: |  |
| Description of presentation (50 words or less): |  |
| Presentation Length: |  |
| ☐ 1 hour ☐ 1-1/2 hours ☐ Other |  |

To be considered, a resume and short description of the presenter's and any co-presenter's credentials must be attached.

**Learning Objectives:**

|  |

**Important:** A handout will be required 4 weeks in advance of the conference. NFPA does not pay for travel expenses, but speakers will receive a complimentary conference registration.

### Presenter Information:

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If you plan on someone presenting this topic with you, please complete the information below. Use additional pages if necessary.

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An improved terminal block is now available for t-tap water-flow detectors from System Sensor, a market leader in fire and notification devices. The terminal block can now be easily mounted between studs and provide access to all terminals. Visit www.systemsensor.com.
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SUPPRESSION-RELEASE PANEL
The new Simplex 4004R Suppression Releasing Panel from SimplexGrinnell controls the release of extinguishing systems, such as Inergen, FM-200, preaction, water spray deluge and carbon dioxide to suppress fires in computer rooms, petrochemical plants, and other high-risk locations.
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WHEN FIRE STRIKES:
GET OUT!
STAY OUT!

Sparky, along with all his friends at NFPA, would like to send out a big "thank you" for joining this year's Fire Prevention Week team. The involvement of people like you continues to make a difference and save lives. We'd also like to applaud the Home Safety Council™ and Pella® Windows and Doors for being this year's funding partners. Thank you for your efforts to improve fire safety.

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**FLOWMETER**
Sensor Products has announced the launch of the Mainstream Portable flowmeter for open channels and part-filled pipes. Derived from the Mainstream III fixed-installation flowmeter, the new portable unit is ideal for short-term or extended field studies. The Mainstream Portable is designed for use in harsh field conditions — with a high-impact case that is fully submersible and resistant to chemicals.

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LOOKING BACK

Our Lady of the Angels School Fire, Chicago, Illinois, December 1, 1958

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