

# SPEAKING OF FIRE

FIRE PROTECTION PUBLICATIONS • OKLAHOMA STATE UNIVERSITY

A quarterly newsletter of Fire Protection Publications (Headquarters for IFSTA) Summer 2005 Vol. 5 Number 2

## IFSTA Update

### Fire Service Search and Rescue, 7th Edition

By Carl Goodson

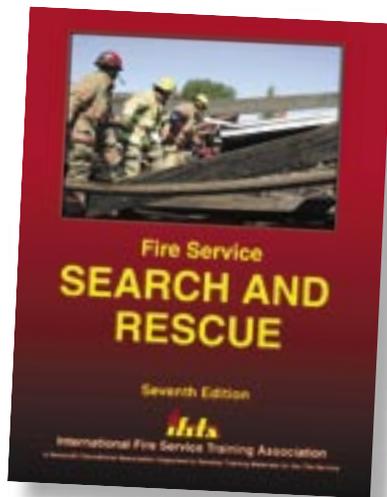
This revised manual was validated by the International Fire Service Training Association (IFSTA), which is a nonprofit educational association organized to develop training materials for the fire and emergency services. The IFSTA headquarters is at Fire Protection Publications, a department of Oklahoma State University.

The purpose of the IFSTA **Fire Service Search and Rescue**, 7th Edition, manual is to provide emergency response agencies and their personnel with the information needed to meet the Operations-level requirements of NFPA 1670, *Standard on Operations and Training for Technical Search and Rescue Incidents* (2004). Since there are currently no Operations-level professional qualifications standards for technical rescuers, this manual identifies the requirements that agencies must meet and the tools and techniques that their personnel must master if they are to provide Operations-level rescue service within their jurisdictions.

#### What are the benefits of the Search and Rescue manual?

- Provides emergency response agencies with an overview of the requirements of NFPA 1670 in a wide range of different technical rescue disciplines.
- Presents the principles and practices of basic fire service rescue in a manner that enables the discerning student to learn the techniques needed to safely and effectively conduct Operations-level rescues and participate in more complex search and rescue incidents under the supervision of a Rescue Technician.

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## From the Director

### Generation M – What Does It Mean for Training?

A recent report by the Kaiser Family Foundation<sup>1</sup> indicates that children spend an average of over six hours a day using media of some type including not only the traditional types, such as television and radio, but also more recent additions such as MP3 players, computers, and mobile phones. Yes, phones aren't just for talking anymore. If you've mastered text messaging, it's a wonderful way to reinforce priorities in your life by sending messages such as "You should have been home hours ago! Love you, Dad." The amazing fact is that once you consider that children are using more than one type of media at a time (and we thought we invented "multitasking!"), the total equates to almost nine hours a day! Consider this – if their media use was a job, they would be working overtime every week! The really surprising finding was that these same children spend an average of only 43 minutes a day reading, and what's more surprising, they could not focus on their reading for more than a few minutes at a time. Welcome to Generation M – the latest since generations X, Y, and Z – the first to redefine technology rather than just behavior.

Now, if you are like me and have a teenager at home, you have undoubtedly looked on in amazement as your child (all at the same time) types a report, IMs five friends at a time ("instant messaging" – this generation's equivalent to a normal face-to-face conversation), talks AND texts on the mobile phone ("hold on, I've got another call"), downloads MP3s (on my credit card!), listens to a blaring CD, and pets the dog. The Kaiser Foundation only underscores what we have already known – this is indeed a special generation. As adults, we could not even begin to work and be productive under these circumstances. As parents we reflect that frustration and limited understanding by yelling at our kids to "get off the phone, turn off that noise, log off, and start studying!" But as this report indicates, they are! In my own experience, my daughter the "media queen" is able to maintain a high grade point average with a heavy load of advanced courses, unfortunately reinforcing in her mind that indeed I really don't know what I'm talking about when it comes to studying.

All of this got me to thinking about training – how we train firefighters today and how we will train them in the future. What happens when

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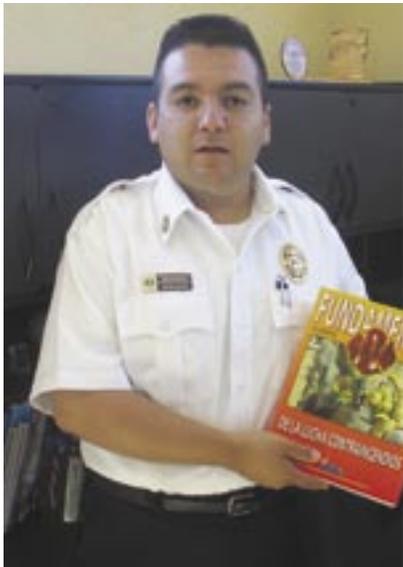
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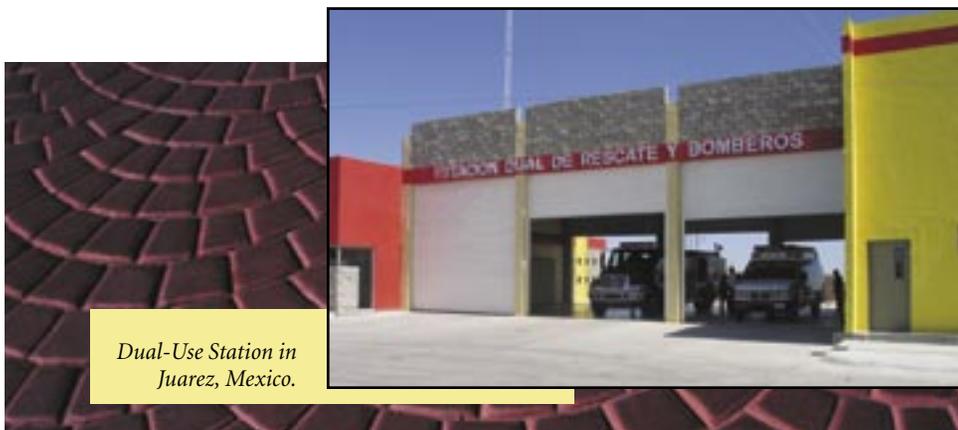


**Surprising places that IFSTA products are being used around the world...**

The Juarez Fire Department in Mexico is presently using the Spanish version of **Essentials of Fire Fighting**. The fire station shown is called a “dual-use station” with both fire and rescue response vehicles and responders. Also pictured is Oscar Melendez who is a trainer for the fire department and a supporter of IFSTA products.

Rich Mahaney, a Haz Mat Operations Specialist in Dona Ana County, New Mexico, took these photos last August on a trip to Juarez, Mexico. Mahaney expects to be working with Melendez in the future. They will be responding to haz mat incidents on each side of the Santa Teresa Border Crossing between New Mexico and Mexico.

Mahaney said, “I was glad to see the IFSTA manuals on the shelf for them to use and reference in the fire station.”



Dual-Use Station in Juarez, Mexico.

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From the Director

Generation M enters basic training? It is not hard to picture that a traditional delivery method of lecture and reading assignments may not be the most effective approach. What’s more, if we think that we have the expertise on our own to design media-based training that will be effective, we only need to look at how ineffective we have been so far in capturing this generation’s attention! Face it, the complexity of their world and their mastery of it is as foreign to us as trying to fly the space shuttle – we don’t have a clue.

We at FPP have been approached by training officers and program administrators from around North America and elsewhere throughout the world with a similar need and vision – they all must consider and need some level and combination of media in their training delivery. This need is driven by a combination of various levels of understanding of the learning style of this generation and the capabilities of media in training, which are impacted by budget constraints, new services requiring additional training (such as NIMS and WMD), and efficiency demands. Most all of these experts understand in concept what they want to do with media in their training, but similarly most all grapple with what it will look like in detail. To compound the confusion, there are any number of training products that pop up in the marketplace on what seems like a daily basis, all offering some type of “E” solution to your “training needs.”

In his book *Good to Great*, Jim Collins shows how truly successful organizations take the time to evaluate the use of media in their organization and products and don’t just jump into the fray at the first opportunity. We at IFSTA/FPP have heeded that advice and the lessons – both good and bad – of those organizations that Collins researched. As such, over the past couple of years we have been in the process of determining how best to provide for media delivery in fire training – real training that can be outcome-measured in not only operational effectiveness, but most importantly in firefighter safety. It’s not enough to just throw out some CDs or provide an Internet connection and call it “training.” When it comes to firefighter safety, we have too much at stake to get it wrong. And throughout this effort, what initially appeared on the surface as a relatively straightforward proposition has instead proven to be an extremely complex and challenging endeavor. As I noted earlier, if you have been involved in determining the best approach for your own organization, you know what I mean. We are now in the final stages of wrapping up what will be a truly state-of-the-art system – one that is both comprehensive and proven effective. It is one that I am sure you will find has the flexibility to meet the needs of not only your organization but the unique needs of each service provider, regardless of location or size. Consistent with our mission, it will be focused on the end goal of allowing you to be the best at what you do with the goal of bringing you home safely. Look for it soon; we’re excited, and I know you will be pleased. Be safe!

Chris Neal, Director  
*Chris Neal*

<sup>1</sup> <http://www.kff.org/entmedia/entmedia030905pkg.cfm>

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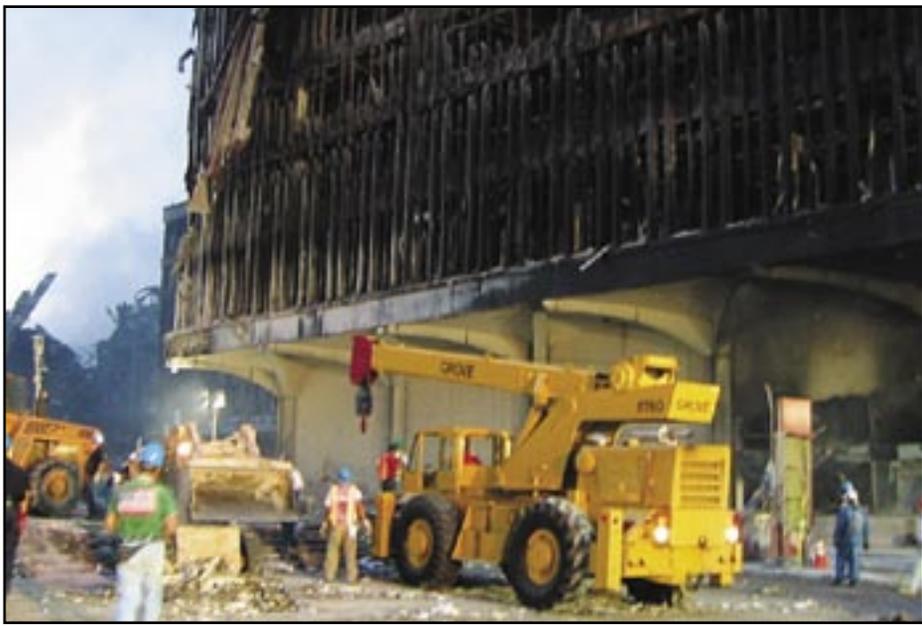
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## Fire Service Search and Rescue

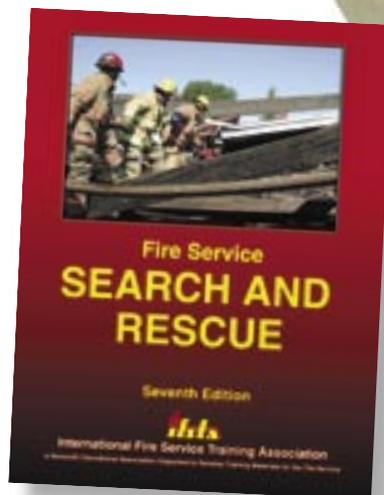
### We must meet the need...

Rescuers may respond to situations that range from the very simple to the extremely complex. Search and rescue incidents are often extremely dangerous for fire/rescue personnel and require the application of knowledge, skill, and teamwork. This knowledge, skill, and teamwork are developed and maintained through training and experience.

Because the lessons learned during actual search and rescue operations may or may not apply to other incidents and because these incidents occur at random intervals, rescuers cannot rely on experience alone to prepare them to deal safely and effectively with all types of search and rescue incidents. Rescuers need a solid foundation of classroom and hands-on training that is periodically reinforced by realistic and challenging training exercises. Many states, provinces, and regional training entities offer excellent courses in various rescue disciplines, and rescue personnel are encouraged to take advantage of these opportunities.

### Chapter list:

- 1 Introduction to Fire Service Search and Rescue
- 2 Search and Rescue Incident Management
- 3 Rescue Tools and Equipment
- 4 Rope Rescue
- 5 Confined Space Search and Rescue
- 6 Structural Collapse Search and Rescue
- 7 Trench Rescue
- 8 Elevator and Machinery Rescue
- 9 Water and Ice Search and Rescue
- 10 Wilderness Search and Rescue
- 11 Fireground Search and Rescue
- 12 Special Rescues



A glossary and appendix are also included to further clarify information contained in the text.

This manual focuses primarily on Operations-level situations to which firefighters and rescue squad members are most often called. However, to provide Operations-level fire/rescue personnel with the background information needed to effectively support and participate in complex technical search and rescue operations, some Technician-level information has been included. In addition, because firefighters constitute the primary intended audience for this manual, fireground search and rescue has also been included even though it is not addressed in NFPA 1670.

If you are interested in ordering **Fire Service Search and Rescue**, please call 800-654-4055.

*Carl Goodson is a Senior Technical Editor at Fire Protection Publications*



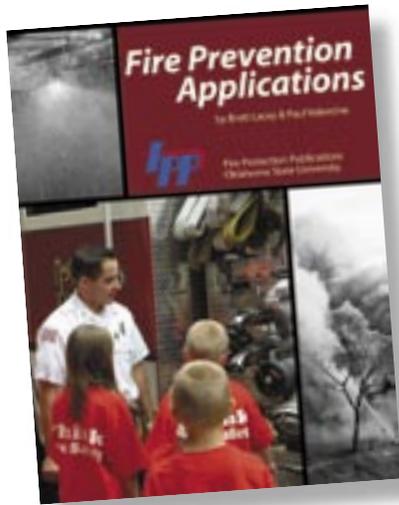
### FPP On The Road\*

**Firehouse World**  
Baltimore, Maryland  
July 28-30, 2005

**Fire-Rescue International**  
Denver, Colorado  
August 12-13, 2005

**2005 International TERC World Extrication Competition and Fire Rescue Expo**  
Fort Lauderdale, Florida  
September 1-3, 2005

\*Please note that show dates may be subject to change.



# A More Practical Approach to Fire Prevention Applications

By Paul Valentine and Brett Lacey

This manual was published as part of Fire Protection Publications' effort to support the United States Fire Administration's (USFA) Fire and Emergency Services Higher Education (FESHE) initiative. For a number of years now, representa-

tatives of more than 100 fire and emergency services protection degree-granting institutions have been meeting under the USFA's leadership to develop a national core curriculum for two- and four-year degree programs. Detailed course outlines and objectives have been developed for both core and elective courses. The new text *Fire Prevention Applications* is designed to meet the objectives contained in the FESHE model "Fire Prevention" course outline.

Paul Valentine and Brett Lacey have taken a different approach to a problem that many in the fire service haven't seen before. In their new book, *Fire Prevention Applications*, they compiled a philosophical approach to the aspects of running one of the most complex divisions in the fire department – fire prevention. The book leaves out most of the technical code issues and many of the policy and procedural elements of running a fire prevention division. Instead, the new text takes a nontraditional look at fire prevention methodology and process. It explores and emphasizes the need for good public process and community motivation in solving present day community injury problems. While many fire prevention texts cover traditional code or system installation requirements, this book emphasizes a more strategic approach to fire prevention and overall injury prevention. The text was written to meet the US Fire Administration Objectives.

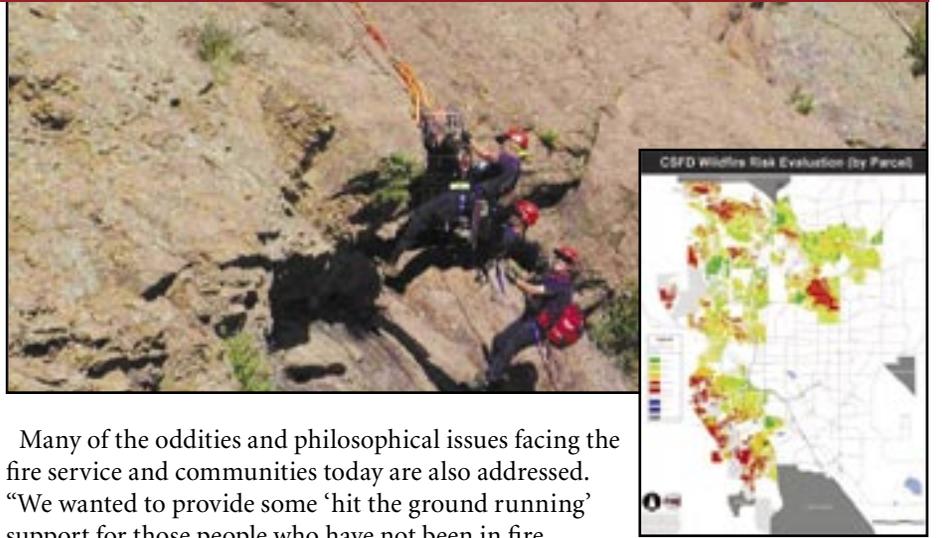
Lacey says, "Many of the existing text and manuals surrounding fire prevention practices have to do with checking extinguishers or inspecting sprinkler systems... or even how systems work. I felt there was a huge component missing for those folks that invariably get assigned to the division after being on the line for years and years. In many cases, these individuals take the assignment with a heart to succeed but being placed on the end of the spear, aren't prepared for all the issues that confront them."

The fire service has changed significantly over the last hundred years. Not only are we responsible for fire protection, but in many cases our responsibilities have expanded well beyond just putting out fires. We mitigate fire and explosion hazards, provide medical care, regulate and mitigate hazardous materials situations, perform high-angle rescue, support health and wellness care to various target groups, plan and respond to terrorist threats, and many other functions. This demand for public service has created a significant paradigm shift for fire department administrations as the fire service strives to accommodate the ever-changing political and economic demands of our communities. *Fire Prevention Applications* will help the reader understand these demands and provide various suggestions and processes by which to engage and be productive in this environment. The fire service will continue to change, and Valentine and Lacey feel those changes will demand a greater need for prevention efforts with diminishing funds allocated to fire prevention.

Alternatives to many things previously thought of as "fire prevention" are provided in this book. According to Valentine and Lacey, "We take a look at various services provided by the American fire service and strive to provide alternate methods or approaches to reducing what seems to be an ever-increasing response and alarm load. This increasing demand costs a lot, not only financially – which is tough for many communities nowadays—but also in physical and personnel resources. It is our intent to provide nontraditional if not unique solutions to combat some of these obstacles."

According to Valentine, "It takes a comprehensive approach to be effective in fire prevention. One of the best ways to address the community's fire and injury problem is utilizing a coalition of people within the community." The fundamental concepts of coalition building are discussed in this text.

*Fire Prevention Applications* explores a wide range of fire prevention tasks and responsibilities and explains different approaches that may be used. The authors also provided examples and explanations as to why certain things are necessary. The book explores some mitigation venues that have not yet been explored in a comprehensive book like this. The topics range from basic fire inspection practices to wildland risk management. A community risk management approach is emphasized in this book; this stems from the fact that most American fire departments handle much more in the way of emergencies and assistance than just fire protection.



Many of the oddities and philosophical issues facing the fire service and communities today are also addressed. "We wanted to provide some 'hit the ground running' support for those people who have not been in fire prevention bureaus before," says Lacey.

The authors are trying to make an impact in the operational side of the house too by creating a document that is enjoyable to read, stimulates some kitchen table dialog, and hopefully makes some headway in shifting some outdated or myopic paradigms. Whether you are at the college level, entering into the field of fire prevention, or tasked with managing a fire prevention division, the text covers the concepts of fire prevention using the following topics and objectives:

## Chapter List

- 1 Introduction
- 2 History and Development of Fire Prevention
- 3 Codes and Standards
- 4 Development and Implementation of Fire Prevention Bureaus
- 5 Fire Prevention Bureau Organizational Structure and Function
- 6 Risk Assessment
- 7 Fire and Life Safety Education
- 8 Public Information Officer: A How-To
- 9 Fire Investigations
- 10 Construction Document Review
- 11 Fire Inspection Procedures
- 12 Identification and Protection of Hazards
- 13 Wildland Fire Mitigation
- 14 Using Technology to Improve Fire Prevention Efforts

If you are interested in ordering *Fire Prevention Applications*, please call 800-654-4055.

Be sure to check our web site for information about the upcoming instructor disk for *Fire Prevention Applications*.

*Paul Valentine is the Fire Marshal for the Mount Prospect (IL) Fire Department. He has been with the department for 13 years and has five years of fire protection engineering experience at a Department of Energy research laboratory and as a loss control consultant in the insurance industry. He has served on many International Fire Service Training Association committees and currently is a member of the IFSTA Executive Board. He is also a principal committee member of the NFPA Fire Marshal Professional Qualification Standard.*

*Brett Lacey is the Fire Marshal for the Colorado Springs (CO) Fire Department. He is a professional engineer and certified safety professional. He has served on various technical committees including NFPA 1031, IFSTA committee for Inspection Practices, and the Colorado Fire Marshal's Association Code Committee. He has been an instructor for two community colleges and has been employed in the private sector as an HPR loss control representative and safety engineer. He has over 24 years experience in the fire service in both a professional and volunteer capacity as a nationally registered paramedic, firefighter, and fire protection engineer.*

## Other FESHE books available:

- IFSTA **Building Construction Related to the Fire Service** with optional Instructor Disk
- FPP's **Fire Service Hydraulics and Water Supply** with optional Instructor Disk
- IFSTA **Orientation and Terminology** with optional Instructor Disk
- **Coming this Fall!** IFSTA's **Fire Detection and Suppression Systems** with optional Instructor Disk



# What You Need NOW to Make Fire Safety Month a Success This Coming October

By Meri-K Appy

President, Home Safety Council

The wisdom of founding father Benjamin Franklin is often sought by members of the fire service, and for good reason. Mr. Franklin's industrious and meticulous pursuit of excellence produced a legacy that continues to inspire nearly two centuries after his birth.

Among my favorite Ben Franklin quotes is one that works perfectly to introduce this article: "Never leave that 'till tomorrow which you can do today."

Although it is barely summer, now is the time to be thinking ahead to October to ensure your department's Fire Safety Month activities will be a great success. The nonprofit Home Safety Council wants to work in partnership with you to help you educate and inspire your community to achieve safer homes and families.

Here's a suggested Fire Safety Month timeline to follow between now and October 1:

## Today

If you haven't yet signed up for the Expert Network, the Home Safety Council's free, online resource for fire and life safety educators, don't leave that 'till tomorrow! Log on to [www.homesafetycouncil.org/expertnetwork](http://www.homesafetycouncil.org/expertnetwork) and sign up. You'll be joining nearly 2,500 other safety experts across America who are making good use of the high quality teaching aids we bring you at no cost. Once you sign up you'll soon receive a generous package of community safety teaching tools, including fire safety videos.

Tour the Expert Network regularly to find additional free materials that you can download on demand, with new information and materials being added every day. From safety fact sheets to family safety activities to local media materials, the Expert Network has what you need.

## This Summer

If possible, meet with teachers and school officials before the end of the school year to finalize plans for fall fire safety education. Plan to get together after school reopens in September to lock in dates for presentations, career days, and fire safety instruction.

## July

Contact your local Lowe's Home Improvement Warehouse managers to start talking about ways your department and Lowe's can work together in your community during Fire Safety Month. Some joint activity ideas you might present to managers include a fire safety day, fire protection equipment workshop, and a featured fire safety product during each week of Fire Safety Month. Bringing a fire truck to the store can be a great way to attract customers who will be interested in learning how they can make their homes safer from fire. Teaming up with Lowe's is a win-win proposition for the store and for your department.

Contact the manager of a local printing or photocopying company and request that they provide your department with free or deeply discounted printing services so you can duplicate the free fire safety materials on the Home Safety Council's Web site ([www.homesafetycouncil.org](http://www.homesafetycouncil.org)). You'll find a variety of helpful educational tools that you can download and print out for members of your community. Look in the Safety Guide for unique teaching tools like these:

- Step-by-step fire escape planning guide
- Fire safety checklist
- Tips on burn prevention
- Fact sheets on smoke alarms, fire sprinkler systems, and fire extinguishers
- Specially designed materials for adults with low literacy skills

## August

Review the free "hard copy" materials you received in the mail from the Home Safety Council when you signed up for the Expert Network. Choose which items you'll want to use for Fire Safety Month. Take a look at the videos and determine which best suits your educational outreach plans in October. Then download the free video lesson plans that Home Safety Council has posted online. Identify your audiences and develop your own lessons. Good bets for older youth and adults:

- **Fire: The Unforgiving Nature** – This fascinating video was produced by State Farm Insurance and was originally broadcast on cable television.
- **A Burning Issue: Is your family safe?** – This award-winning video produced by the Wisconsin Alliance for Fire Safety can be used in presentations or provided to your local television stations for broadcast in separate segments or all together.

## September

Teachers are back at school, and they want your help. If you haven't already locked in dates for presentations to students, do it now. This month the Home Safety Council will be mailing all members of the Expert Network a free copy of the new children's video *Code Red Rover, Grown Up Come Over*, in English and Spanish. The home safety video is the centerpiece of the Home Safety Council's 2005 educational safety campaign with Weekly Reader: "Safety Rangers Say No to Dangers," which includes a fire safety element.

In addition to reaching out to elementary schools make sure you're also on the schedule to address local civic groups, talk to youth groups, visit nursing homes and campus housing, and work with large employers to help them set up employee fire safety activities.

Now is the time to revisit your Lowe's store managers and make final arrangements to work together on community events during October.

## October

It's Fire Safety Month! And you're ready to make this the most successful community fire safety campaign yet.

The Home Safety Council and our online Expert Network stand ready to help you make Fire Safety Month a valuable educational experience for your community. In closing, I can't resist one last Ben Franklin quote, which seems fitting for the occasion: "Energy and persistence conquer all things." Let's work together to conquer home fires once and for all!

The Home Safety Council is a 501(c) (3) nonprofit organization dedicated to helping prevent the nearly 21 million medical visits that occur on average each year from unintentional injuries in the home. Through national programs and partners across America, the Home Safety Council works to educate and empower families to take actions that help keep them safer in and around their homes. To learn more about the Council's programs, partnerships, and resources visit the Home Safety Council at <http://www.homesafetycouncil.org/>



## Firefighter Life Safety Initiatives Delivered on a National Basis

The National Fallen Firefighters Foundation is pleased to announce that through the Assistance to Firefighters Grant Program, funding has been secured to facilitate the delivery of the Firefighter Life Safety Initiatives on a national basis. The Grant Program

award of \$750,000 and a sponsorship pledge from Fireman's Fund Insurance of \$329,000 in matching support will fully fund the Foundation's planned efforts for the year, at an estimated budget of \$1,079,000. Therefore, it will proceed quickly with a long list of planned projects.

### The projects that will be conducted with these funds include:

1. Development of "ready-to-use" training packages for distribution to approximately 30,000 fire stations across the United States. Each package will contain audiovisual materials, lesson plans, and additional materials to carry the message directly to the greatest possible number of firefighters.
2. Development of the "Everyone Goes Home" web site, which will provide timely information and downloadable materials for training and education.
3. Four mini-summit meetings – each focused on a particular aspect of the Firefighter Life Safety Initiatives project.
4. Support for the establishment of two university-based research centers to develop projects relating to the 16 initiatives.
5. Establishment of a technology-transfer effort to identify existing technology from the federal laboratory network that can be adapted to address firefighter safety priorities.
6. Establishment of a speaker's bureau to provide presentations to as many fire service audiences as possible.
7. Establishment of the Firefighter Life Safety Seal of Excellence Award to recognize outstanding contributions to our efforts.
8. Funding to participate in fire service trade shows and meetings to promote the initiatives and to work with fire departments conducting demonstration projects relating to the initiatives.

The first of the planned mini-summit meetings was held in San Diego on February 1, 2005, in conjunction with Firehouse World. This session was directed toward the wildland fire fighting community and produced a series of recommended actions to address the particular issues that will have the greatest impact on wildland firefighter safety.

The second mini-summit was held in Indianapolis on April 13, 2005, in conjunction with the Fire Department Instructors Conference (FDIC). Appropriately, this session was designed to address the application of the 16 initiatives in the training context. In addition, the Foundation assisted with a major prime-time presentation for the main FDIC program entitled "A Family Affair," which was presented by Chief Billy Goldfeder and three firefighter line-of-duty death survivors who drove home the point that safety within the fire service is everyone's responsibility and without it, everyone suffers.

The National Fire Service Research Agenda Symposium took place June 2 -3, 2005, at the National Emergency Training Center. This project, which was funded by a grant from the National Institute for Science and Technology, is directly related to Initiative 7 from the Tampa Summit.

On July 29, 2005, the mini-summit on structural fire fighting issues will be conducted in Baltimore, coinciding with Firehouse Expo.

Obviously, we are expecting to be very busy working on all of these projects. We will be looking for participation and assistance from many of you who have offered to support the Firefighter Life Safety Initiative project. We will be providing

many opportunities to be a part of the overall effort. The good news is that we have the financial resources to support the effort, but we won't be able to do it without help from our friends.

The Foundation announces the selection of three individuals who will make up the Line-of-Duty Death Prevention Implementation Team for the Firefighter Life Safety Initiatives Project:

Richard Anderson—Project Manager

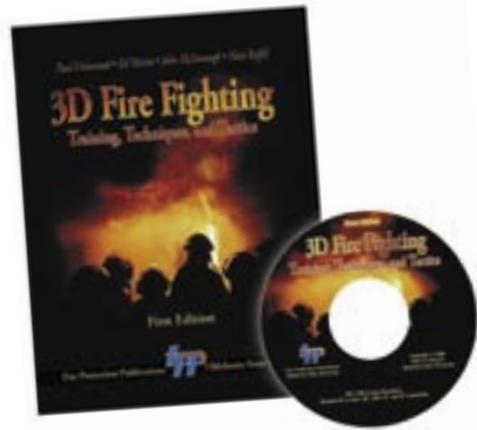
Larry Curl—Project Administrator

Gordon Routley—Programs Subject Matter Expert

All three of these men are highly charged and motivated individuals who will be critical to the success of the goals we have established for the project. We welcome them to the team and ask that you direct any inquiries to them about the project through their new email address of [groulley@firehero.org](mailto:groulley@firehero.org).

## 3D Fire Fighting

by Paul Grimwood, Ed Hartin,  
John McDonough, and Shan Raffel



Having served as a firefighter—both in the USA and Europe across a thirty-year period from the early 1970s – Paul Grimwood studied structural fire fighting tactics from an international perspective and became aware at a very early

stage there are several tactical approaches common to specific countries that are used to control and suppress compartment (room) or structural fires. He stood alongside New York City firefighters for many months through the bleak mid 70s during the busiest period in the history of the fire department and watched in awe as they opened up (ventilated) structures, allowing the fire to show itself before unleashing a “deluge” of water power through their high-flow nozzles in a direct tactical attack. This method of ventilation was in conflict with his own instincts that had evolved through much experience and training while serving in the London Fire Brigade some years previous, where firefighters would cautiously take actions to confine the fire before hunting it out and delivering high-pressure low-flow fog patterns to complete control and suppression.

However, he learned that there was much to be said for opening structures, and subsequent experiences confirmed this aspect of tactical fireground operations. It was also appreciated that fire confinement, as a strategy, still offered major advantages in some respects and could be used most effectively in specific situations. Although Grimwood was impressed by the concept of high-flow attack hoselines, he was also appreciative of the “new-wave” uses of rapid bursting (nozzle pulsing) tactics being introduced during the early 1980s by Swedish firefighters. To make their approach routes safe, Swedish firefighters directed small amounts of their fog patterns into the dangerous gases forming in the overhead. This tactical approach also provided a means of dealing with the “gaseous phase” of combustion, as opposed to the “fuel phase” that 95% of fire attacks were aimed at. It further educated the minds of firefighters in various aspects associated with fire behavior that had received little coverage from a training perspective.

The wide range of tactical approaches suggested to Grimwood that there should be some “middle ground” where he could combine fireground tactics into a unified strategy that would accommodate all situations. A fireground strategy that favored venting tactics over confinement strategy or high-flow direct hits over low-flow “pulsing” fog patterns, (or vice versa) was not optimal for all situations. The term *3D Fire Fighting* refers to techniques and tactics used by firefighters to assert an element of control over deteriorating fire conditions inside fire-involved structures, or compartments. This objective of taking control of interior conditions at the outset of fire operations is based upon the safe-person concept, where an immediate risk-based approach – evaluating risk versus gain – is applied at the earliest opportunity, i.e., on fire department arrival.

In the past it has been common for firefighters to direct their initial attack strategy towards the visible fuel phase fire while neglecting the hidden dangers of the gaseous-phase fire or exposure. This fundamental error has cost many firefighters their lives. This book describes in detail the techniques and tactics used to safely gain access to a fire compartment or structure and how to advance safely and mount an effective attack on the fire. This training manual and accompanying CD show firefighters that fire development in the gaseous phase is potentially more lethal than that in the fuel phase. There are references to traditional forms of mounting an attack on the fuel-phase fire, as well as the relatively “new-wave” approaches developed by firefighters in Sweden and England during the 1980s for dealing with the hazards of flashover, backdraft, smoke explosion, and other

forms of fire gas ignition (FGI). These techniques include zone control (buffer and safe zoning); 3D water-fog applications into the gaseous phase to suppress flaming combustion and inert unignited fire-gas accumulations; tactical venting options that address both opening up and closing down (confining) a fire; as well as direct (straight-stream) and indirect (fog) methods of fire suppression.

A detailed review of fire fighting flow-rate research demonstrates some surprising misunderstandings that have caused several misapplications of fire fighting flow-rate formula over the years. There are distinct differences between fighting a fire using just the critical flow rate as opposed to the more effective tactical flow rate and the reasons for this are explained.

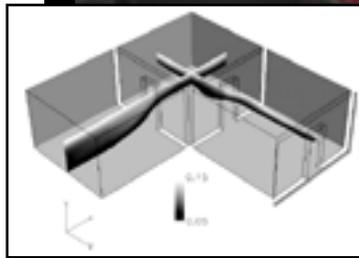
*3D Fire Fighting* brings together four tactical fire fighting specialists from the USA, Australia, and the UK. Each author brings his own area of expertise to the publication in a way never seen before, truly from an international perspective. The authors are Paul Grimwood, Ed Hartin, John McDonough, and Shan Raffel.

The book and CD explore new approaches to tactical venting options; fire confinement strategies; and offer primary teaching aids relative to various forms of rapid fire progress; CFBT (Compartment Fire Behavior Training); and tacti-

cal fire attack (smoothbore versus water-fog versus CAFS – the debate ends here!). Read the first-hand views of fire chiefs in New York City and London who debate the “venting” versus “confinement” tactics head on. Learn how to implement CFBT training in your fire department using tried and tested methods based on the original Swedish model with safe-operating practices developed in the UK.

This book is for the fire chief, the fire administrator, the engineer, or the firefighter. It demonstrates how a safer and more effective approach to tackling structure fires can result in reducing the life losses dramatically, as has been shown in the countries where 3D Fire Fighting has evolved.

*If you are interested in ordering 3D Fire Fighting, please call 800-654-4055.*



**Pictured from left:** Mike Wieder (Asst. Director – FPP), Kathy Rousseau (FPP employee), David Thompson (Assoc. Dean, College of Engineering, Architecture and Technology – OSU), Clint Parker (Graphic Designer – FPP), Dennis Compton (Past Chair – IFSTA Board), Janet Maker (Business Manager – FPP), Wes Kitchell (IFSTA Board member), Cindy Brakhage (Senior Editor – FPP), and Jeff Morrisette (IFSTA Board member).

## CFSI Dinner

IFSTA and its publishing partner Fire Protection Publications (FPP) at Oklahoma State University (OSU) were selected by the Congressional Fire Services Institute (CFSI) as the 2005 Fire Service Organization of the Year. The award was formally presented at the Seventeenth Annual National Fire and Emergency Services Dinner on April 7, 2005, in Washington, D.C.

## Public Fire Education with Impact:

### *“Where’s the Fire?”* Interactive Experience at INNOVENTIONS at Epcot®



Fire protection has always included five key elements: suppression, code enforcement, investigation, prevention, and education. Changing human behavior has always presented significant challenges. First, most North American fire department budgets devote a miniscule amount to fire education as compared to some of their international counterparts such as the Japanese. Secondly, it is difficult to deliver the fire education message to large numbers of people across the country. Finally, public educators seldom know if their message will be effective should an actual emergency occur.

On October 5, 2004, INNOVENTIONS at Epcot® at Walt Disney World® Resort in Lake Buena Vista, Florida, opened a new interactive experience called “Where’s the Fire?” This exhibit is sponsored by Liberty Mutual Insurance Co. in cooperation with the U.S. Fire Administration. Initially slated to run for three years, the over 4,000 sq. ft. exhibit is the largest public fire education experience in the country. The experience is staffed by INNOVENTIONS cast members who entertain and educate guests who participate in the “Where’s the Fire?” experience.

Epcot® was Walt Disney’s dream of a community of the future. With a mission of “discovery” and “hope for tomorrow” INNOVENTIONS at Epcot® seemed to be a natural place to offer something educational, yet entertaining to tackle the fire education problem. INNOVENTIONS is a unique 100,000 square foot interactive playground of hands-on exhibits where visitors from around the world discover how science and technology can simplify and enhance their lives today and tomorrow. The goal of the Liberty Mutual exhibit was to create an experience involving both adults and children that would allow them to retain a fire prevention message without becoming bored or frightened. It also allows guests to experience the same attention and dynamics of a fire fighting experience. Liberty Mutual safety educators in cooperation with Walt Disney Imagineering and USFA have created a significant exhibit that achieves these goals.

#### The exhibit includes:

**“Where’s the Fire?” Game House** – Two teams of up to 15 guests have a specific amount of time to search six rooms of a house (kitchen, family room, child bedroom, bathroom, home office, and garage) to find and eliminate fire hazards using a specially designed, technologically unique, hand-held “safety light.” Guests enter the house (which is divided into two identical sections) and are divided into two teams, each assigned a side of the house. Once in the house, a presenter greets the teams and gives a short presentation on the fire problem in the United States. When the game begins, team members (divided into groups of up to three per room) aim their “safety light” onto a wall-sized projected image in each room to find and extinguish hazards. Deciding if the hazard could cause a fire requires discussion: all members of the group must collectively aim their lights at the hazard to fix it. Correct decisions earn points, incorrect or slow decisions mean a point deduction. When the allotted time has elapsed, the teams are brought back together and the winning team is announced. The goal is for the guests to be able to identify and eliminate all of the hazards on the screen and apply these learnings to their own homes once they leave INNOVENTIONS.

After completing the “Where’s the Fire?” game guests with young children can go to the “Play it Safe” house.



**“Play It Safe” house** – Since children five and under are twice as likely to die in a fire than the rest of the population, a special four-room house and activity were created for younger guests. An INNOVENTIONS cast member teaches the children how to escape a building if a fire occurs and the importance of not hiding from firefighters and having a meeting place. The “Play It Safe” house has specially designed light sequences that replicate a fire spreading along the floor – the cast member helps direct the children away from the fire and find the best way to exit the house. This house also teaches parents that they should develop and practice an escape plan with their families when they return home.

Guests then have the ability to put all of the information they have learned to the test by taking a fire safety quiz.

**“Burning Questions” fire safety quiz kiosks** – These three touch-screen kiosks present a timed safety quiz, testing guests’ knowledge of fire facts. Each kiosk shows the well-known NIST video of a Christmas tree in a single room from the incipient stage of a fire to flashover. Guests have 45 seconds (the amount of time that it takes for flashover in the video) to complete a series of True/False questions about fire safety and prevention.

A highlight of the exhibit is the fire truck that greets guests as they enter the exhibit.

**30-foot Pumper Truck** — This specially designed, technologically advanced interactive truck lets guests see how a pumper truck operates and learn about the equipment worn, carried, and used by firefighters. The truck is in operating order and outfitted with every conceivable piece of equipment, hose beds, attack lines, turnouts, and pump panels for guests of all ages to enjoy. One side of the truck has been outfitted with a Wall of Honor. This panel displays over 100 patches from fire departments around the country—Liberty Mutual’s tribute to the important role of paid and volunteer fire fighters in the United States.

In addition to the exhibit, Liberty Mutual safety professionals—in collaboration with USFA public fire educators—created safety kits and presentation packages as a way of taking the “Where’s the Fire?” experience on the road. Liberty Mutual’s sales representatives and divisions will have access to these kits when they team up with local fire departments and public fire educators around the country to reach out and educate schoolchildren and the general public.

(Portions of this article originally appeared in Firehouse Magazine®)

For more information about INNOVENTIONS and this exhibit, contact Stacia Wake at [Stacia.L.Wake@disney.com](mailto:Stacia.L.Wake@disney.com)