

SPEAKING OF FIRE

FIRE PROTECTION PUBLICATIONS • OKLAHOMA STATE UNIVERSITY

A quarterly newsletter of Fire Protection Publications (Headquarters for IFSTA) Spring 2002 Vol. 2 Number 1

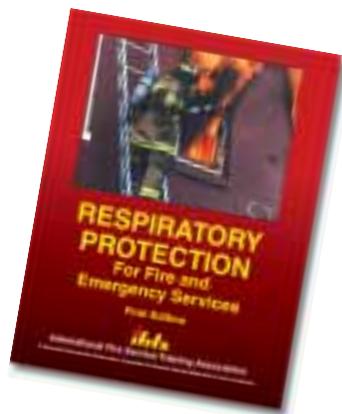
New from IFSTA!

Respiratory Protection for Fire and Emergency Services

First Edition

by Fred Stowell

This first edition of **Respiratory Protection for Fire and Emergency Services** acknowledges the expanding respiratory hazards faced by fire and emergency services responders while performing their duties. Respiratory hazards may be encountered during any type of emergency incident including, among others, the following:



- Structural fires
- Wildland fires
- Trash container fires
- Shipboard fires
- Aircraft fires
- Hazardous chemical incidents
- Medical responses
- Structural collapses
- Confined-space incidents
- Natural disasters
- Oxygen-deficient atmospheres
- Terrorism acts

While supplied-air respirators (SARs) and self-contained breathing apparatus (SCBA) still provide the primary protection in incidents that are immediately dangerous to life or health (IDLH), responders must also be familiar with respiratory protection equipment used in less hazardous environments. Personnel performing search and rescue following the collapse of the World Trade Center towers in New York City in September, 2001, were equipped with air-purifying respirators (APRs) to protect themselves from airborne particulates that remained in the atmosphere near the site for weeks following the incident. Emergency responders who provide medical care may be required to wear APRs or high efficiency particulate air (HEPA) filter masks to protect themselves and their patients from potential airborne infections.

This new manual replaces the previous IFSTA **Self-Contained Breathing Apparatus** manual. It is divided into two sections: the first covering the administrative requirements and the second covering the operational requirements. The administrative portion, which consists of seven chapters, includes information on the development of a respiratory protection program, background history of respiratory protection, various general legal requirements for occupational safety and health (both Canadian and United States federal, state, provincial, and municipal authorities), risk management, selection and procurement of respiratory protection equipment, medical evaluation,

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From the Director

Like many of you, I have been disillusioned by the Enron scandal that has been so prevalent in the news recently. On the surface it would appear that the Enron scandal is light years from the fire service, but in reality, there are certain lessons from it that we should consider. For my part, these thoughts began in an unusual way.

Shortly before the holiday season last December, I was watching a Saturday afternoon Christmas parade in a small community in Oklahoma — enjoying a little slice of Americana. It was not unlike any one of hundreds across the country that weekend with the local high school band leading the way, smiling kids in scout troops, the local tumbling club, and horses (along with what they leave behind) bearing local law enforcement officers, roundup club members, and the local rodeo queen. It was a wonderful way to spend an early winter weekend afternoon. Toward the end of the parade, the local volunteer fire department approached in their 1960s pumper and a do-it-all grass rig (both polished to the hilt) with firefighters and their families alongside waving at the crowd. As they approached, what occurred truly surprised me. Everyone in the crowd spontaneously stood, applauded, and cheered as if the World Series champs were in town. In fact, I noticed one woman standing near me wiping away tears. Now while I still enjoy the fire trucks more than anything else in parades (and maybe I'm not quite as wide-eyed as I was as a kid), I was still surprised by the reaction to those firefighters. But it became quickly evident that these firefighters were not just friends and neighbors — since September 11th, they had become heroes.

Now I am willing to wager that most if not all of those firefighters in the parade have never even been east of the Mississippi River much less to New York. Yet they became a focus of admiration and concern in their community. The world has changed for these firefighters. And hasn't it changed for us all? While this fire department is from Oklahoma, it could have been any one from across the country (paid or volunteer, urban or rural). All firefighters have been thrust into the limelight and showered with attention and concern. On the national level, that newfound attention has resulted in a dramatic increase in federal dollars available to fire departments at the local level, which will allow the fire service to better provide for firefighters and the citizens they serve.

And that brings me back to the Enron situation and what it may teach us in the fire service. It appears that based on the strong support of their employees and an ethically questionable financial "shell game,"

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From the Director

the leaders at Enron reaped incredible benefits. However, this short-term reward came at the cost of their employees, their stockholders, and ultimately their company. Unfortunately, these company executives squandered an incredible opportunity. Now the term "Enron" is synonymous with corruption and failure. Yet amazingly, it was the actions of only a handful of individuals who caused this debacle. The overwhelming majority of employees within the company were hardworking, honest, values-based employees who supported and positively represented the Enron mission. That fact hardly matters now — the company is bankrupt, many of its employees are unemployed, and shockwaves still reverberate through Wall Street and the energy industry. So what are the lessons that apply to the fire service? The following may be a few:

1. A windfall of new or additional resources is a rare opportunity.
2. The actions of a handful of individuals can impact an entire industry.
3. The consequences of inappropriate actions of a few can unfairly reflect on many.

The fire service is in the spotlight as never before. Yet a paradox exists in that while firefighters have always been held in high esteem, this favor has rarely translated into funding for the most part. Instead, the fire service has, more often than not, had to "make do" with limited resources and has generally done it well. However, it is difficult to rescue victims or fight fires with moral support alone. Now our resources are much more abundant.

So as the tide begins to change, particularly in light of the lessons of Enron, we need to consider the following questions:

- Will the fire service be good stewards of newly found resources and invest them in a manner that best serves both its external and internal customers? The fire service has a long and successful history of making the most out of little. It will be a tribute to its discipline and professionalism if communities feel that their investments were properly and efficiently utilized after a few years.
- Will firefighters continue to represent themselves and their departments in a manner that brings favor to not only themselves but the entire fire service as well? We have seen how a few individuals can impact an entire service or industry. It might be easy to imagine how an event that affects the Stillwater Fire Department could be on the front page in Boston.
- Will firefighters continue to focus on proper and safe procedures in their emergency activities or will they take unnecessary chances in attempts to live up to "hero" status? As Chief Compton noted in his tribute to the firefighters lost in New York City in the last edition of *Speaking of Fire*, firefighters will risk a lot to save a lot — that does not change. Yet, firefighters also need to commit to the entire principle and remember that they will not risk a lot to save a little. Communities need their firefighters now and for years to come; therefore, be smart, be disciplined.

At OSU Fire Protection Publications, we too are aware of these lessons and our responsibilities to you and the fire service. This commitment is reflected in the Mission and Values that our staff has recently developed. Please take time to check them out when you visit our web site. It is your assurance that we remain committed to you and the fire service. Take care and be safe!

Sincerely,
Chris Neal

Director, Fire Protection Publications

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New from IFSTA!

facepiece fit testing, and training. Both quantitative and qualitative fit-testing procedures are described and illustrated. The last three chapters focus on inspections, care and maintenance, and operational guidelines. The manual is supported by eleven appendices that provide examples of a sample respiratory protection program, valuable addresses for state Occupational Safety and Health Administration (OSHA) offices, an incident report and product warning samples, risk management formulas, an SCBA survey form, an equipment evaluation form, a sample request for proposal, decision flow charts, and generic donning and doffing procedures for SCBA. The glossary provides definitions for terms used in the manual.

As is the custom with all IFSTA publications, this manual was written, reviewed, and validated by members of the fire and emergency services community. Training officers, line personnel, manufacturers' representatives, and members of both public and private fire brigades provided their combined experiences to produce this manual. You can be assured that the material is accurate, is up to date, and conforms to NFPA standards.

Like personal protective clothing, respiratory protection equipment is essential to the safety of emergency responders. It allows responders to operate in hazardous environments that would otherwise jeopardize their lives, health, and safety. This manual provides fire and emergency service organizations with the information necessary to create and implement a respiratory protection program and to evaluate and procure the appropriate type of respiratory protection equipment. It also provides the emergency responder with information on care, use, and maintenance of respiratory protection equipment. While it is not intended to replace the respiratory protection equipment manufacturer's instructions on care and use, it provides a framework for that information. **Respiratory Protection for Fire and Emergency Services** is recommended for any and all emergency response organizations that are required to use respiratory protection by the authority having jurisdiction that governs them.

Fred Stowell is a Senior Technical Editor at Fire Protection Publications.

NAFTD Update

North American Fire Training Directors

by Adam Piskura, President

The North American Fire Training Directors (NAFTD) is comprised of representatives from all Canadian provinces and territories as well as each of the fifty states in the U.S. As the primary point of contact for fire training and education that is not conducted directly by a fire department, members are responsible for helping fire departments achieve their goals. Besides training, NAFTD members offer recruitment, selection, and promotional advice; interpretations of federal and state laws and compliance assistance; information on sources of funding assistance; citizen fire and life safety information; equipment specifications; firefighter certifications; and brokering of requests for assistance that are not available from a state, province, or territory.

Each year training directors ensure that 700,000 firefighters are trained in the United States. This training ranges from basic entry-level instruction through chief officer courses. State fire training systems are composed of the go-to people for National Fire Academy (NFA) field programs, offer evidence on training, and are often the offices that keep certification records.

Local and national news media outlets often rely on state and provincial training organizations for fire-service-related information. Also, it is not uncommon for many members to receive calls from parents with children wishing to become firefighters. Members have to be accessible to the public as well as the fire service.

Legislators frequently verify fire-service conditions with the state fire training system. As such, members have to be trustworthy to both elected officials and the entire fire service community. Messages to and from both are free from biases and personal emotion. We all want what is best for the fire service and the publics served. In order to fulfill this responsibility, many directors attend a myriad of meetings each month. Firefighter associations, training associations, fire chief organizations, mutual aid associations, geographic organizations, city and town councils, legislative groups, civic organizations, and anyone wishing a fire service speaker may receive a training director as a spokesperson.

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NAFTD Update

While there are no life-threatening emergencies in education, our customers expect immediate answers to questions and instant delivery of courses. Their yardsticks are the normal response modes to emergencies. Of course, often there is another dimension to their urgent expectations. Most employees of state, provincial, and territorial fire training systems are (or were) fire department members. As such, members strive to meet expectations.

Often state-level fire training systems serve as truth detectors. Fire department officers often call to get the “straight skinny” on a subject. During the terror attacks on the United States, many state training agencies were inundated with calls offering to assist in the domestic defensive effort. It is expected that NAFTD members know the answers to all fire-service-related questions.

If a NAFTD member does not have a requested program or answer to a question, we do know where to get help for the firefighter customer. Through the association of NAFTD, the systems share their curriculums and initiatives through e-mail list serves and at least two annual meetings. Members are also the principal points of state contact with the National Fire Academy. The National Fire Academy facilitates a process known as *endorsement* where state-level programs are qualified as the equivalent of an NFA course in both quality and content. Once a course meets established criteria within a peer-review process, it becomes an endorsed course. This endorsement allows state directors the option of awarding NFA certificates for state-developed courses. This process increases the course value for students pursuing credentials.

Because the National Fire Academy views state directors as partners, the NFA allows select resident courses to be delivered off campus by state fire training systems. This process is known as *enfranchisement*. Enfranchisement acknowledges that the state fire training system *is* the NFA in the state. The synergy from combining federal and state fire training and education efforts benefits students by increasing program and course access and assurance of quality deliveries.

State, provincial, and territorial fire training systems are organized in many different fashions. They are the result of government growing to accommodate the requests from the fire service community for assistance to meet requirements and help keep firefighters safe while they work in hostile environments. Of course, nonhostile environments became even more important with increased Occupational Safety and Health Administration (OSHA) scrutiny and the creation of National Fire Protection Association (NFPA) Standard 1500, *Standard on Fire Department Occupational Safety and Health Program*.

State training systems are attached to a variety of parent organizations. The predominant categories are land grant universities, offices of state fire marshals, separate boards or commissions, boards of education/vocational education, or other higher education institutions.

State fire training directors are responsible for planning reoccurring and special events sometimes involving upwards of a thousand attendees. The accurate management and dispersal of state, federal, and private foundation grant money often exceed several hundred thousand dollars each year. These monies are most often used to decrease the cost of instruction for firefighters.

Printing projects are a large component of our activities. The creation of marketing materials, bidding graphics and printing contracts, and ensuring that the information is received by the intended audience in a timely manner are critical responsibilities.

Entrusted with the public's funding, fire training directors are expected to make all training equally accessible to all fire departments within their purview. More importantly, fire chiefs and the communities they serve expect fire training directors to keep their firefighters safe during all training evolutions. That expectation means simulations and live burns must be conducted safely while maintaining the realism that the occupation of fire fighting demands.

As employers, fire training directors typically engage a hundred part-time instructors. Besides the selection process, these individuals must be monitored for effectiveness via a quality assurance process. As with any chief executive officer, directors of fire training must constantly strive for improvement and be ready to discipline or reward and acknowledge human performance. Both instructors and support staff contribute to the success of training programs. Instructors deliver the lesson scheduled by full-time staff in the course of answering fire department requests. After determining mutually acceptable delivery dates, curriculum and class support materials are delivered to the training site. Following the course delivery, student critiques are evaluated. The director ensures that instructors are paid and customers invoiced (if appropriate). Some states use insurance premium taxes or other revenue sources to lessen dependence upon state general revenue funds or tuition.

Often, training directors are also responsible for instructing business and industry employees in various facets of OSHA compliance. Fire fighting, hazardous materials responses, confined-space entries, lockout/tagout procedures, and the use and maintenance of portable fire extinguishers are all course subjects delivered to private agencies. State, provincial, and territorial training systems and facilities are unique. That uniqueness is why municipalities request them and governments fund them.

Adam Piskura is also the Director of Training for the State of Connecticut Commission on Fire Prevention & Control, Connecticut Fire Academy.

IFSTA Board Update

by George Dunkel

With the 69th Annual IFSTA Conference just a few weeks away, I found myself daydreaming about what it must have been like to be one of the original members who came together in Stillwater 70 years ago and began developing the “Red Books.” I am not a historian, but I have heard some of the stories about the meetings that were held on the second floor of the downtown fire station during July with no air-conditioning. Fire chiefs, training officers, and firefighters gathered in confined quarters and worked together to reach a consensus on standardizing basic training materials for the fire service. Most of us today can trace our first training manuals back to those hot days in Oklahoma.

I am pleased to hear that IFSTA delegates from past years are being invited to this year's IFSTA Conference — a reunion of some of our heritage and a great opportunity for those of us who are currently working to help keep today's firefighters safe to mix with those who developed and validated training materials for us.

I just received a copy of the first edition of **Fireground Support Operations**. I am very impressed with its contents, style, and layout. I congratulate the committee, Chair Wes Kitchel, Technical Editor Carl Goodson, and the entire editorial and production staff for producing such a great manual. I am confident this new manual will be one of the most read and used training manuals in the fire service for years to come.

I look forward to seeing all of the new and updated training materials that IFSTA/FPP is debuting at this year's Fire Department Instructors Conference in Indianapolis. The work of the IFSTA staff and validation committees over the past few years has been unprecedented. Quality manuals and training aids have been produced with exceptional quality in a very timely manner. I am positive all members of the IFSTA family join me in congratulating the entire FPP staff for accomplishing such a formidable task.

I look forward to again traveling to Oklahoma this summer and assisting the many delegates and IFSTA/FPP staff as we continue the tradition started 70 years ago of producing quality standardized training materials for the fire service. Fire service training materials . . . developed by firefighters for firefighters.

George Dunkel is the Chief of the St. Helens (Oregon) Rural Fire District. He was first elected to the IFSTA Executive Board in 1997.

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Specifying Foam Systems

by Dominic Colletti

First the good news: Your department's apparatus committee has decided to install a foam system on a proposed new engine. Now the bad news: There is significant disagreement among committee members regarding which foam system to specify. The committee is hung up on the following questions: Should it be an eductor, an around-the-pump system, an electronic computer-controlled direct-injection system, a balanced-pressure system, or even a compressed air foam system (CAFS)? Should the new apparatus carry Class A or only Class B foam concentrate? Should it be equipped with dual foam concentrate reservoirs to carry both?

Specifying foam systems for fire apparatus is a broad topic. With all the hardware and foam agent choices on the market today, it can be a real challenge for a committee to specify a foam system that meets the community's needs, provides the biggest "bang for the buck," and is the best value over the lifecycle of the apparatus.

If yours is a municipal department in a rural, suburban, or urban location that will be specifying a foam system on a new full-size engine, review the following three major topics. By reviewing these topics when specifying a new foam system, you will better cover the basic issues that are required to make the best possible foam system purchase.

1. Consider the benefits of Class A foam.

If the new engine's mission is general duty — trash, automobile interior, grass, urban interface and structure fire fighting — add Class A foam capability as another valuable tool. Using Class A foam to quickly extinguish fires associated with ordinary combustibles is a good practice: It reduces fireground exposure to heat and toxic products of combustion, increasing firefighter health and safety. The benefit to the public of implementing a Class A foam program can be significant — in most fire districts, ordinary combustibles com-

pose the majority of working fire responses. Statistics show that they account for a large percentage of yearly fire loss. For example in the year 2000, the National Fire Protection Association (NFPA) reported some \$9,501,000,000 or 83 percent of all property damage occurred in structure fires. Half of the property loss occurred in residential properties. From the standpoint of reducing loss from structural blazes, implementing a Class A foam program makes good economic sense.

Class A foam concentrate proportioning devices known as *automatic direct-injection systems* have become popular on full-size engines. These systems pump Class A foam concentrate from an apparatus on-board storage reservoir (usually built as part of the booster tank). It then injects foam concentrate into the piping on the discharge side of the fire pump. Direct-injection systems prevent the fire pump, apparatus booster tank, or potable hydrant source from becoming contaminated with foam because waterway check valves are normally installed. Additionally, the system continually adjusts itself to inject the proper amount of foam concentrate over a wide range of flow rates and discharge pressures. After being turned "on," these systems require no pump operator intervention — they are fully automatic.

Many models of direct-injection proportioners can be connected to virtually any number of fire pump discharges and discharge locations you want. Typically, installations on new fire apparatus include two 1¾-inch cross-lays, a 2½-inch side or rear discharge, and a prepiped deck gun, which are all piped in as "foam capable." The remaining fire pump discharges are "water capable" only.

One popular type of direct-injection system is the *electronic, computer-controlled, direct-injection proportioner*. These systems are engineered to handle Class A and most Class B foam concentrates and have a key design feature of easy operation. The benefit of no-hassle operation is reduced stress on pump operators who work under demanding fireground conditions.



These firefighters from the Kimberton, Pennsylvania, Fire Department get to see firsthand the flame-knockdown punch a compressed air foam system provides. They are using a 1¾-inch attack hose with a delivery rate of 125 gpm Class A foam solution and 80-cubic-feet-per-minute of compressed air.

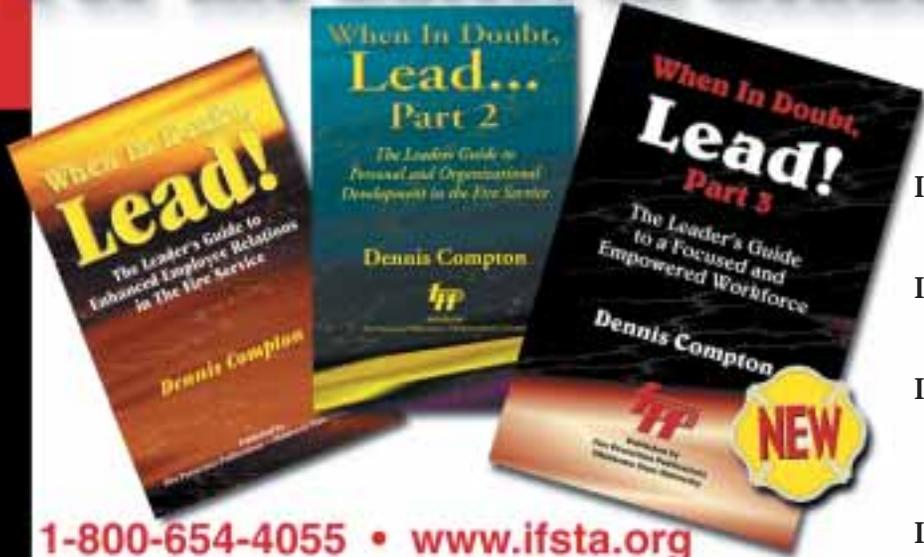
How do electronic, computer-controlled, direct-injection systems work? These systems use a paddlewheel flow sensor installed in the fire pump's discharge piping to measure water flow rate out of foam-capable discharges. Using this information, the systems then inject an amount of foam concentrate in direct relationship to the water movement past the paddlewheel flow sensor. A microprocessor controls all system functions and maintains the operator-set proportioning ratio over a wide foam solution discharge flow range — for example, 20 to 1,000 gpm. Therefore during fire combat, whether a crew uses Class A foam from a handline at 95 gpm or from a portable monitor at 500 gpm, foam concentrate injection always remains at the operator-preset ratio — for example, 0.3 percent.

Should your department invest in a highly accurate electronic computer-controlled direct-injection system on a new engine? After all, these systems cost more to initially purchase than other less accurate systems. Based on the results of a foam use survey, the answer is "yes" — because it makes good economic sense over the lifecycle of an engine.

A survey questioning 31 fire departments that use Class A foam yielded information that indicated their average yearly usage of Class A foam concentrate was 211 gallons. This figure included concentrate used both during fire-suppression operations and training drills. Foam concentrate used during training drills accounted for 39 percent of the total amount. At \$14 per gallon, this figure equates to an average annual cost of \$2,954. The survey also found that Class A foam is being applied on the fireground at an average proportioning ratio of 0.3 percent.

With the above information in mind, let's look at foam system lifecycle cost. If an apparatus committee specified a low-accuracy, manual Class A foam proportioning system for a new apparatus, some level of "overproportioning" could occur. In other words, if you set a less accurate foam system to proportion at a ratio of 0.3 percent, it is possible to actually end up with a 0.4 percent ratio because of inherent inaccuracies. Based on the above survey's yearly average foam consumption estimate of 211 gallons, this overdosing would equate to wasting 70 additional gallons of foam concentrate per year. Multiply this waste by a 20-year

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Live fire training under controlled, safe conditions is a must when considering adopting a compressed air foam system (CAFS). Learning how to correctly use CAFS means spending time applying product in controlled live fire evolutions with a hoseline. Always follow NFPA 1403, Standard on Live Fire Training Evolutions, when conducting live fire training exercises.

apparatus life (1,400 gallons) and the present cost of concentrate (\$14 per gallon). You find that this waste costs \$19,600 over the life of the apparatus. This money is more wisely spent initially on an accurate electronic, computer-controlled, direct-injection system to provide a high level of foam dispensing accuracy and repeatable results during foam fire-fighting operations.

2. Consider installing two foam concentrate reservoirs on your engine – one for Class A foam concentrate and the other for a multi-purpose Class B foam concentrate such as a 3 percent Class A and 3 percent aqueous film forming foam – alcohol resistant concentrate (AFFF-ARC).

What about flammable liquid fuel spills and fires? The capability of applying a multipurpose Class B foam concentrate is important when tackling a gasoline spill or fire at an automobile accident or vehicle extrication scene.

Since 1991, the Environmental Protection Agency (EPA) has made it a requirement that refineries use *oxygenates* – additives that reduce smog-forming tailpipe emissions – because they make gasoline burn more completely. In certain areas of the country refineries chose to use ethanol, while in other areas refineries chose to use methyl tertiary-butyl ether (MTBE) as a gasoline additive. Extinguishing fires involving gasoline treated with MTBE is a real challenge. This situation is where multipurpose AFFF-ARC comes into play. This type of foam is multipurpose in that it handles both a burning normal hydrocarbon fuel (diesel, kerosene, etc.) and a polar solvent fuel (alcohol, undiluted MTBE, etc.) when applied at the manufacturer's specified application rate.

If you were just going to specify a single Class A foam concentrate reservoir on a new engine, adding another reservoir for Class B foam and a dual tank changeover valve is a minor cost increase in the overall scheme of things.

3. Perform a review of the features and benefits of adding a CAFS on your new engine.

If your department currently has limited foam capability, the idea of adding a compressed air foam system on a new engine may seem like a stretch. I sometimes hear, "My department is not ready for it," and "It costs too much." The cost of adding a CAFS to a new full-size engine can be in

the range of \$35,000 to \$40,000 – a lot of money for CAFS, say you? Not if you consider the cost of losing a building from fire. Let's talk "Return on Investment" here – just one effective exposure protection scenario can pay for the CAFS hardware twice over through reduced fire loss. Adding a CAFS to your engine can make it so much more effective at suppressing fire – from three up to five times – that it is worth it. Compressed air foam systems provide an exceptional fire suppression value for the community by multiplying the effectiveness of your department's fire fighting force.

For an example of the value of CAFS, one only need look at the Manchester, New Hampshire, Fire Department. Manchester is an urban

department that has adopted CAFS specifically for structural fire fighting. On March 28, 1999, at 2:30 a.m., the department responded to a serious fire in a 28-unit garden apartment complex. Two of Manchester's three CAFS-equipped structural pumpers arrived first, finding advanced fire conditions. After extinguishment, the total fire loss was four apartments and the roof above. A potentially larger property loss was averted. Compressed air foam application had a direct impact in keeping the fire to the area of origin. That's real value.

Regarding some departments not being ready to implement CAFS, it is indeed a different way to fight fire from what we are traditionally accustomed to – training and education are required.

What are the hardware components found in a CAFS? Simply, a full-size engine with CAFS is equipped with a high-volume air compressor of about 200 cubic feet per minute in size, an electronic direct-injection foam proportioner, the normal midship centrifugal fire pump, plus operator safety and other controls to integrate all the components together.

If you are specifying CAFS, be careful – if the engine is to be used for structure fire fighting, make sure the CAFS is sized correctly for the application. That means installing a minimum 200 cfm air compressor and at least two 1¾-inch cross-lays and a 2½-inch side or rear discharge that are piped in CAFS capable.

While CAFS foam is more effective at stopping fire than water, plan on using adequate foam solution (liquid) delivery rates. Follow delivery rate benchmarks such as the Iowa Method of Water Supply or the National Fire Academy formula. This may mean using a 2½-inch CAFS hoseline flowing 180 gpm of Class A foam solution and 120 cfm of air to knock down a fully involved residential dwelling fire.

When Using Compressed Air Foam Systems:

1. Choose a suitable foam concentrate for the fire hazard at hand. After initial incident size-up, choose an appropriate Class A or a Class B foam concentrate for the type of fire hazard. Follow the manufacturer's recommendations regarding each foam product's specific fire fighting suitability and the proportioning ratio(s) at which each must be used.

2. Produce a foam solution application rate that is adequate to quickly knock down the size fire. If you are applying Class B foam, be sure that the foam solution discharge rate (gpm) meets or exceeds the minimum as set forth by the concentrate manufacturer (for example, 0.1 gpm foam solution application rate for each square foot of burning flammable liquid). If you are applying Class A foam at a structure fire, be sure to use either the Iowa Method of Water Supply or the National Fire Academy formula as delivery rate benchmarks so adequate foam solution application rates are achieved.

3. Adjust the CAFS apparatus to produce a foam consistency considered optimal for the fire condition – wet, fluid, or dry. For direct attack on most ordinary combustibles, use a wet finished foam. For exposure protection on wood-sided structures, use either fluid foam or fluid foam followed by a dry foam coating. Under some conditions, the use of a dry foam alone works well on concrete and vinyl-sided structures.

4. Optimize the foam application on the burning fuel or exposure by using the best manual foam application technique to meet the fire challenge at hand. On a pooling flammable liquid fire, apply Class B foam using the most appropriate technique – for example, roll-on, lofting, sweeping, or strike-the-object. Do not plunge the foam stream into the pooling liquid. For protecting a vertical exposure with dry Class A compressed air foam, rapidly sweep the nozzle in a side-to-side motion to reduce the finished foam's forward velocity and allow it to cling to the surface.

5. Monitor the fire and fire fighting progress – make adjustments in foam application tactics as required. Constantly evaluate suppression progress and changing fire conditions. Make adjustments as required until successful incident termination.

Dominic J. Colletti is the author of Class A Foam – Best Practice For Structure Firefighters, a 245-page firefighter-training manual, distributed by IFSTA/FPP. Dominic is the FAMA representative on the NFPA 1500 and 18 Technical Committees and is the Director of Sales at Hale Products, Inc. A volunteer firefighter with the Humane Fire Company of Royersford, Pennsylvania, Dominic can be reached at CafsExpert@aol.com.

IFSTA/FPP On the Road...

FDIC West
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Penn Fire Expo
Harrisburg, PA
Exhibit dates: May 17–19

New York Fire Chiefs
Syracuse, NY
Exhibit dates: June 7–9

New England Fire-Rescue
West Springfield, MA
Exhibit dates: June 23–25

Firehouse Expo
Baltimore, MD
Exhibit dates: July 18–20

'Tis the Season for Fire Service Trade Shows

by Michael A. Wieder

When I began writing articles for *Speaking of Fire* back in the mid 1980s, I set out to develop a series of articles on simple, useable tactical information and standard operating procedures on the types of incidents to which most firefighters commonly respond. In previous months we have discussed incidents such as automatic alarms, trash container fires, and chimney fires. We have also looked at important everyday issues such as firefighter rehabilitation and incident communications. In this edition's installment, I would like to depart from espousing my views on emergency incidents to discussing another timely issue for many fire service personnel. While many people look forward to Spring because it signals the beginning of baseball and golf seasons, dedicated fire service personnel realize that it also hails the beginning of the fire service trade show season. Thus, the focus of this article will be to list some of the ways that you can maximize your time and expense when attending a trade show.

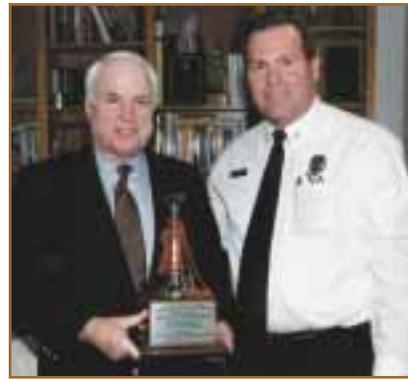
Certainly, one of the fringe benefits of working at a place like IFSTA/Fire Protection Publications over the past 16 years has been the opportunity to attend at least three or four major trade shows a year, usually as a vendor working in our booth. During that time, I have learned many tricks of the trade and other helpful hints that I would like to pass on as you begin planning to attend one or more of these shows in the coming year. Hopefully you can use these tips to maximize your experience.

1. **Take advantage of educational opportunities if they are available.** Many trade shows have educational seminars as part of the overall conference. In some cases the price of a one-day pass includes the opportunity to attend one or more of these seminars. Plan your day(s) so that you can take advantage of seminars that may be of particular interest to you or your department.
2. **Develop a list of particular items of interest that you wish to explore at the trade show.** If you are going to the show to gather information on or purchase specific items, make a checklist of these so you are sure to cover all of your needs.
3. **Match your list of needs to the vendors scheduled to exhibit at the show.** Most of the trade shows release a list of vendors or maps of the exhibit halls before the start of the show. Use this information to determine all of the possible vendors who will be at the show for each of the items you are seeking to discuss or purchase. If a map is available, you can mark their locations to ensure that you find all of the selected booths during the course of the day.

4. **Do not purchase an item at the first booth you come to that has it.** There is nothing more frustrating than purchasing an item, only to find the same item at another booth later in the day for a better price than what you paid. Make sure you have checked prices at all of the booths on your list, and then buy the item where you will get the best deal.
5. **For best results, be cordial and professional when dealing with vendors in their booths.** It has been my experience over the years that a small percentage of trade show attendees look forward to the opportunity to berate, belittle, or otherwise criticize vendors while they are at a show. This behavior may be because of problems the attendee had with one of the vendor's products, the perception of poor service from the vendor, or the attendee's often misguided opinion that he/she is more knowledgeable about the product than the vendor. Ninety-nine percent of all vendors

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Senator John McCain Honored for Support



Senator John McCain has been selected as the Congressional Fire Services Institute (CFSI) 2001 Legislator of the Year. Senator McCain was presented with the award on January 16, 2002, by Dennis Compton, Chair of the CFSI National Advisory Committee (NAC) and Fire Chief for the City of Mesa (Arizona) Fire Department.

Each year the CFSI Legislator of the Year Award honors a member (or members) of Congress who has stood at the forefront in advancing fire service legislation to give our nation's fire and emergency services personnel additional federal resources and training to perform their mission effectively . . . which is to prevent situations from occurring through the application of true consensus codes, provide public education to teach safe behaviors, and respond to emergency incidents when called upon to do so. Each of these mission responsibilities contributed to the survival of people at the World Trade Center and Pentagon on September 11, 2001.

Senator McCain played a significant role in the establishment of the Assistance to Firefighters Grant Program. Senator McCain's leadership as Co-chair of the Congressional Fire Services Caucus was reflected in the bipartisan support of this legislation.

The CFSI NAC, a coalition of 48 fire and emergency service organizations, provides guidance and council to the CFSI staff to help it advance its mission of education on Capitol Hill. Although CFSI NAC members represent different constituencies within the realm of public safety, their commitments as NAC members are to find common ground and collectively work together on behalf of all first responders.

Whenever a member of Congress, regardless of his or her political affiliation, lends support to the fire service, the fire service in turn acts accordingly by publicly acknowledging the member for his/her efforts. On behalf of the American fire service, we appreciate Senator McCain's support.

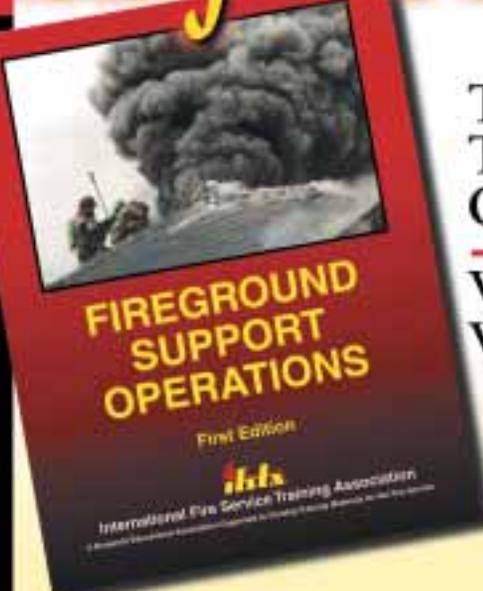
For further information, please contact Bill Webb, Executive Director of CFSI, Washington, D.C., 202-371-1277.

Solicitation for Proposals

The National Fire Protection Association (NFPA) is soliciting public proposals for changes to NFPA 1670, Standard on Operations and Training for Technical Rescue Incidents. First published in 1999, the standard is undergoing review and revision. The revised standard is scheduled for publication in 2004. The deadline for public proposals on the 1670 document is June 28, 2002. Anyone, not just NFPA members, may submit proposed changes to the standard by visiting the NFPA web site (www.nfpa.org) or by filling out and mailing the form that appears in the back of every bound copy of an NFPA standard. Each proposed change must be submitted separately. If more than one form is needed, the submitter can simply photocopy the form. Completed forms must be mailed to:

Secretary, Standards Council • National Fire Protection Association
• 1 Batterymarch Park • Quincy, MA 02269-9101

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Fill out and mail with entries to: **IFSTA/FPP CALENDAR CONTEST • OKLAHOMA STATE UNIVERSITY**
FIRE PROTECTION PUBLICATIONS • 930 N. WILLIS • STILLWATER, OK 74078-8045

PLEASE TYPE OR PRINT CLEARLY:

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City _____ State _____ Zip _____

Home Phone (____) _____ Office Phone (____) _____

I understand that all entries are nonreturnable. By entering these photographs in the IFSTA/FPP Calendar Photo Contest, I am acknowledging that I understand and agree to the terms stated in the contest announcement: Fire Protection Publications has the right to make any reasonable and proper use of the photograph(s) as they deem fit, so long as each use of the photograph is credited to me. For each photograph selected for future use by FPP, I will be compensated by a one-time payment of no less than \$100 at the time of first use, with no further compensation for subsequent uses of the same photograph. Unused photographs are not eligible for compensation of any kind.

I affirm that I am the legal owner or representative of the legal owner of all photographs I have submitted for this contest and that I have the permission of the owner to enter this contest and to take credit for and receive any prizes or remuneration for any winning entry.

Signature _____ Date _____

ENTRY INFORMATION (Complete a separate form for each photo submitted. This form may be photocopied for use as many times as needed.)

Entry No.: _____ Description: _____

Camera Information (Please fill out as completely as possible.) Type of Camera (Brand, Model, etc.) _____

Lens Used _____ Film Brand _____ ASA/DIN _____ Aperture _____ Shutter Speed _____

Number of Prints Entered _____ Number of Slides Entered _____

ENTRY DEADLINE
All ENTRIES must be postmarked no later than midnight, July 1, 2002

FPP Profile

Bob Dotter — Your Friendly Warehouse Guy

by Andrea Baker



When Bob Dotter is not spending his time riding against the wind on his Harley, he is busy managing the FPP warehouse. Bob is responsible for seeing that IFSTA/FPP materials are ordered, shipped, packaged, and delivered in good condition.

Bob can be found at any time during the day smiling and gently teasing his coworkers. However, those who work with Bob on a daily basis know he is

always making people laugh and brightening their day.

Bob was born in Stillwater, OK, but moved to Los Angeles, CA, where he worked in sales with a steel tubing company for 26 years. He and his wife Julie returned to Oklahoma because they enjoyed the slower-pace lifestyle. His hobbies include riding dirt bikes, playing racquetball, reading, and riding his Harley motorcycle.

Bob came to FPP in 1981. When he arrived, the warehouse was 6 months behind on orders. Under Bob's direction, the warehouse is currently processing orders in less than 24 hours. Bob's primary concern is customer satisfaction. He negotiates shipping discounts with the truck lines and vendors, which ultimately save our customers money.

Bob is a vital part of how FPP functions. He plans to retire in June, leaving behind some big shoes to fill. Concerning retirement, Bob has mixed feelings: "I know one thing, I will definitely have more time to ride my Harley," he said.

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2003 IFSTA/FPP CALENDAR PHOTO CONTEST

Entry Form on Reverse Side



CONTEST RULES

Entries must be either 35 mm color slides or 8- by 10-inch glossy color prints. Textured prints and/or odd-sized prints will be rejected as unusable. Each contestant may **submit a maximum of 20** entries in any combination of slides and prints. However, each entry must be accompanied by a separate, completed entry form (photocopies are acceptable). Digital photos will only be accepted if the following criteria are met: Digital prints must be accompanied by the image file on disc (CD-ROM preferred). Image file must be a minimum of 8" x 11" at 300 pixels per inch, (or: 2400 pixels tall x 3300 pixels wide) and saved in either PhotoShop Tiff or JPEG format.

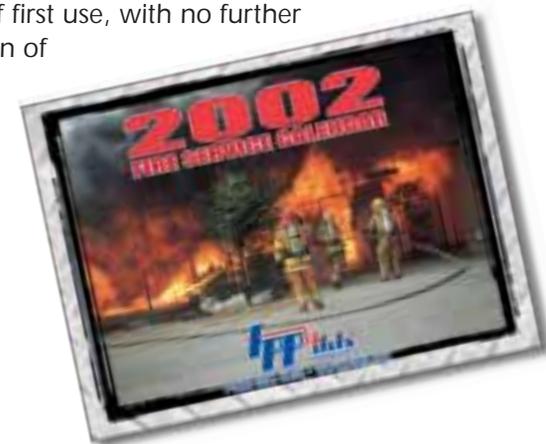
NOTICE

Entries are nonreturnable. Please submit either duplicate slides or prints. Submission of photographs for this contest shall constitute an agreement on the part of the contestant to allow Fire Protection Publications (FPP) to make any reasonable and proper use of the photograph(s), so long as each use of the photograph is credited to the photographer. Photos submitted for this contest (including those selected for the 2003 calendar) may be retained for future use and may be used in IFSTA/FPP's annual calendar, IFSTA/FPP catalogs, IFSTA/FPP manuals, and/or FPP's quarterly newsletter. For each photo selected for future use by Fire Protection Publications, the photographer will be compensated by a one-time payment of no less than \$100.00 at the time of first use, with no further compensation for subsequent use of the same photograph. Unused photographs are not eligible for compensation of any kind.

IDENTIFICATION OF ENTRIES

Prints: For each print, fill out an entry form including entry number and a brief description. Attach the form to the back of the print with transparent tape. Please do not write on the back of the photos for any reason. When submitting more than one print, place a sheet of typing paper between each photo to provide proper protection.

Slides: Put your name and an identifying number on the slide frame, and fill out an entry form for each slide including entry number and a brief description. Please use the same identifying number on the form that you put on the slide.



DEADLINE — JULY 1, 2002

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at trade shows take customer service very seriously and work very hard to satisfy your needs or correct any problems that may have occurred. However, as the old adage states, "it is easier to attract bees with honey rather than vinegar." Oftentimes the amount of assistance you get from vendors is directly dependent on how professionally you present yourself to them. Insulting, negative comments or behavior (particularly in front of other customers) will generally NOT result in you getting the most satisfying response. If you need to discuss a negative situation, quietly ask the vendor to step away from other customers and then present your case calmly and rationally. This approach is more likely to get you the help you need. As well, realize that just because you have been chief engineer of your fire company for the past ten years and you have repacked the casing on your fire pump a few times, you don't know more about fire pumps than the chief design engineer from the major fire pump manufacturer you are talking to. Respect vendors' knowledge of their products or you're the one who is likely to end up looking like an idiot.

- 6. When possible, attend the show on the last day.** Everyone gets so excited for their favorite show to come around each year that they tend to attend on the first day it is open. The results include parking-lot nightmares, aisles hopelessly jammed with attendees, and busy vendors who may not have the time to give you as much assistance as you desire. In the case of shows that run Friday-Saturday-Sunday, Fridays are typically the busiest days and Sundays are the slowest. You are more likely to get extensive help from a vendor on Sunday because the volume of people is much lower and vendors have more time to spend with each customer. As well, you are also more likely to get better deals on Sunday because many vendors further discount prices on display items in order to negate the need to pack and take them back to the shop.
- 7. Make hotel and restaurant reservations well in advance.** If you think that you can wait until the Wednesday before the show to get a good hotel room near the venue, you are likely to be disappointed. In many cases all of the hotels within 10 to 15 miles of the show are sold out months in advance. Book rooms early. If your plans change, you can generally cancel

the reservation up to 24 hours before the scheduled arrival without incurring any expense. The same goes for popular local restaurants. Do not wait until you get to town to make a reservation. Call at least a week or two in advance and make a reservation for the night you wish to eat there.

- 8. Do not expect hardship stories to result in getting free products from vendors.** At any given trade show, at least 80 percent of attendees can make the claim that "We're just a small-town volunteer fire department that is struggling to operate because of limited funds." Trust me, vendors hear this story a hundred or more times at each show. The truth of the matter is that we are in business because we have a product to *sell* not because we *give* it away. In rare cases a vendor may be able to help you, but there are literally thousands of departments in the U.S. that struggle to make ends meet and no vendor would be in business long if they donated free products to all of them. The best you can expect from this hardship line is generally a few more percents off the normal purchase price of an item.
- 9. Take advantage of free catalogs and product information sheets that are distributed at the show.** This information may be helpful in making purchasing decisions after the show is over. You should also find an easy-to-use system for filing this information so you can retrieve it at a later time.
- 10. Dress appropriately for the occasion.** Fire service trade shows are by no means formal occasions that require coats and ties in order for you to be considered presentable. However, it is my experience (as both a vendor and an attendee) that vendors tend to spend more time with and take more seriously attendees who are dressed appropriately. If you are wondering why a vendor is not taking you seriously, look no further than the dirty jeans and WWF "Stone Cold" t-shirt you are wearing for the answer. Wear nice clothes that are clean and in good condition. Comfortable walking shoes are a must!

Hopefully this information will help you make the most of your trip to a trade show. These shows can be very rewarding and meaningful experiences if the above advice is considered. With that in mind, come by the IFSTA/FPP booth at any of the major trade shows and say hello to us! We'll be looking forward to seeing you!

Michael A. Wieder is the Managing Editor at Fire Protection Publications.