

All Hands Herald

Massachusetts Department of Fire Services

May 2018

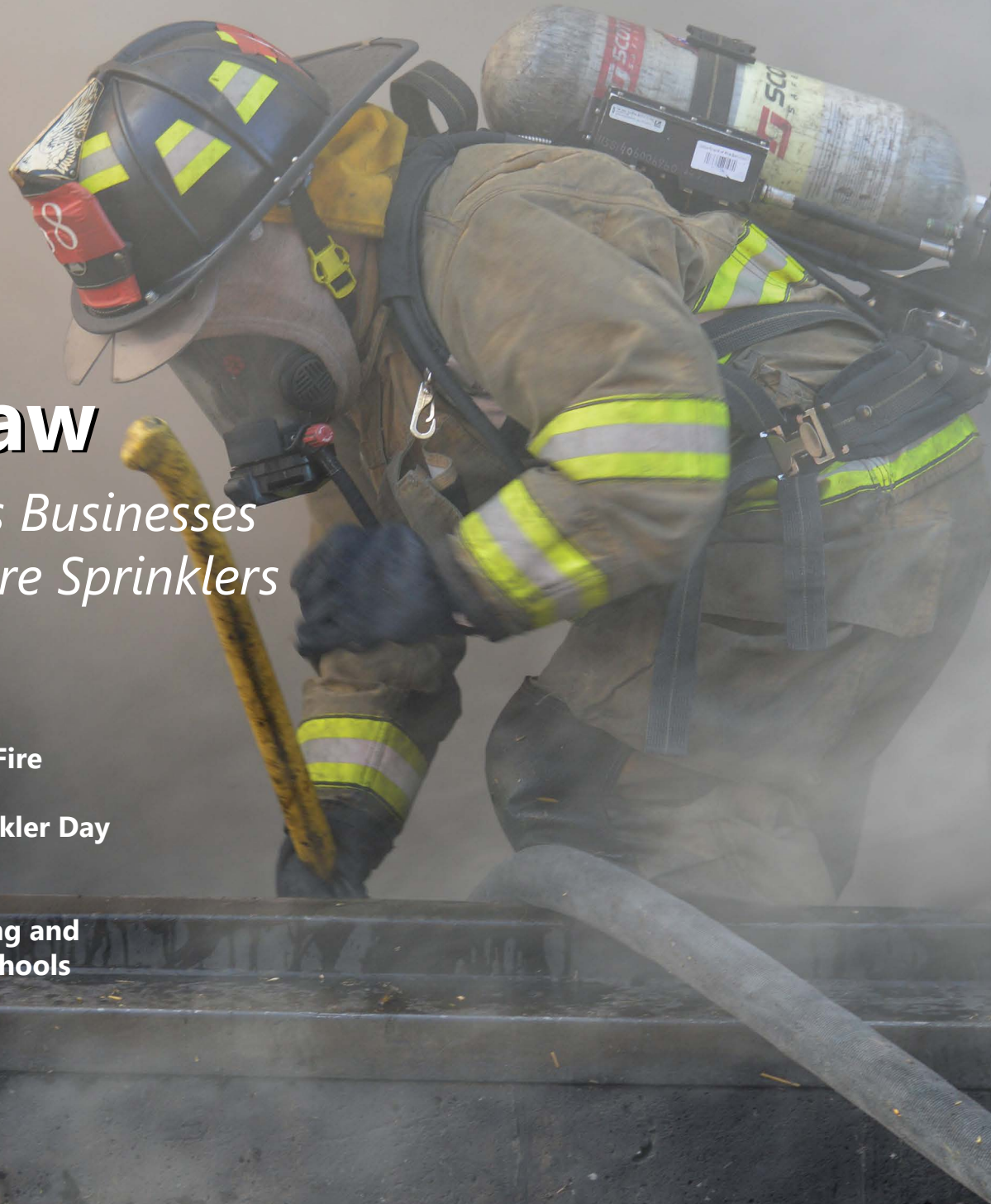
New **Tax Law**

*Encourages Businesses
to Install Fire Sprinklers*

**15 Years After the
Station Nightclub Fire**

**National Fire Sprinkler Day
is May 19**

**Emergency Planning and
Preparedness in Schools**



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The *All Hands Herald* is published three times a year by the Department of Fire Services. Our title incorporates the traditional fire service meaning of all hands working to extinguish a fire. In this publication, all hands is DFS staff providing information, training and assistance with fire service issues which affect all levels of the fire service.

Let us know how you like the *All Hands Herald* and what we can do to make it even more useful to you – our dedicated fire service members and customers.

If you have suggestions, ideas, questions or want to make a contribution to the *All Hands Herald*, contact:

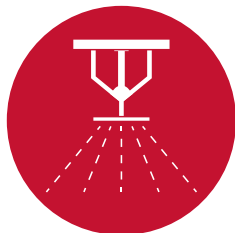
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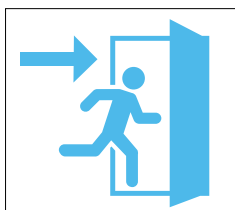
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The *Tax Cuts and Jobs Act* of December 2017 contains several critically important provisions which give significant incentives to property owners to install fire sprinklers.



2 National Fire Sprinkler Day is May 19

National Home Fire Sprinkler Day aims to promote home fire sprinklers, raise awareness of this life-saving technology, and break down the myths and legislative barriers to its use.



3 15 Years After the Station Nightclub Fire

Sprinklers have brought safety to Massachusetts in the 15 years since the Station nightclub fire. Now, a new federal law provides incentives to property owners to install fire sprinklers across the nation.

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From the Fire Marshal

From the FM

Until this year, the phrase *Valentine's Day Massacre* referred to a Chicago gangland shooting in 1929. Going forward, the phrase will refer to the tragic school shooting in Parkland, Florida that killed 17 students and teachers. Many communities are questioning what can be done to increase safety in their schools. When considering the best ways to prevent, prepare for, and respond to all types of emergencies in schools, building and life safety should be the primary consideration. Every school in Massachusetts has been required to have an all hazard evacuation plan since 2000, and fire, police and school officials are required to meet before the start of each school year to review the plan. Now may be a good opportunity to meet and review your local plan again to ensure that it addresses current concerns.

Fire service personnel are encouraged to work with other public safety personnel and school officials to promote a comprehensive approach to school safety and response to all emergencies. We don't want well intended ideas to result in unintended consequences. Continued dialogue with stakeholders leads to the best understanding and development of effective procedures. Remember that the best response begins with effective planning. Commissioner Borstel, Division of Professional Licensure, and I have issued a joint advisory on this topic to fire chiefs and building officials (see page 6).

School Fires Are Far More Common than School Shootings

We know that fires are a relatively common occurrence in schools and the prompt and orderly evacuation of building occupants is appropriate and necessary. Town and school officials may not realize how common school fires are if they have not personally experienced one. While the number of actual fires in schools in Massachusetts has been declining over the last five years (2012 - 2016) based on MFIRS data, we still experience an average of 161 school fires annually which result in over \$5M (averaged) loss each year.

NFPA 3000 – Standard for Preparedness and Response to Active Shooter and/or Hostile Events

The National Fire Protection Association (NFPA) has been working with stakeholder groups, including fire and law enforcement, to fast track the development of a new standard: NFPA 3000–Standard for Preparedness and Response to Active Shooter and/or Hostile Events. During

March, I participated in some of the subcommittee work on this standard. This standard was in development long before the Florida school shooting, but the tragedy underscores how important it is.

Active Shooter/ Hostile Event Pamphlet

DFS has worked with the Massachusetts Major City Chiefs of Police, the Professional Fire Fighters of MA, the Fire Chiefs' Association of MA, the Executive Office of Public Safety, the MA Chiefs of Police Association and the Mass. Department of Public Health's Office of Emergency Medical Services to develop a pamphlet, the *Massachusetts Active Shooter Response Guidance* for local police, fire and EMS officials. It embraces the best practices for law enforcement, fire and EMS to work together to save as many lives as possible in an active shooter or hostile event. Visit *Resources for the Fire Service* at <https://www.mass.gov/resources-for-the-fire-service-0> and look for the pamphlet under *additional resources*.

Federal Tax Bill Promotes Sprinklers

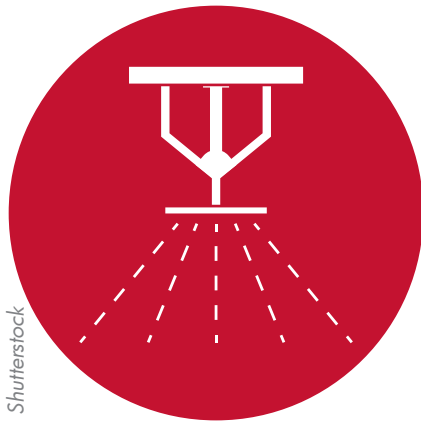
The December, 2017 federal *Tax Cuts and Jobs Act* contained several critically important provisions that provide significant incentives for business owners to install fire sprinklers. One provision allows small businesses that install sprinklers to depreciate the cost over five years instead of 39, recouping the investment more quickly. Massachusetts has often been a leader in fire safety. Fourteen years ago, the Massachusetts Fire Safety Act of August 2004 brought sweeping changes to fire safety laws including requiring sprinklers for many existing bars and nightclubs. It included a provision to allow owners of affected venues to depreciate the cost of installing sprinklers over five years instead of over 39 years on their state taxes.

Hot Works and the Fire Code

Starting this July, everyone who requires a permit to conduct hot works and welding will be required to complete training approved by the State Fire Marshal. We are working with industry associations to approve specific training programs and to communicate the deadline to complete a program. We have also scheduled training for



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New Tax Law *Encourages Businesses to Install Fire Sprinklers*

Last December, congress passed the most sweeping tax reform legislation since

1986. The *Tax Cuts and Jobs Act* contains several critically important provisions which give significant incentives to property owners to install fire sprinklers. These include:

- Small businesses will now be able to fully expense installation of fire sprinklers under section 179 of the tax code up to a cap of \$1 million in each year of expense. This will allow for the retrofit and upgrading of many occupancies including nightclubs. Small businesses that need to borrow money to pay for a retrofit will be able to fully deduct the interest expense on the loan.
- Larger entities can fully expense capital costs over the next five years. Starting in 2023, the amount that can be expensed will slowly taper down. This part of the provision means that fire chiefs and local policy officials can now ensure business owners have five years for full expensing, which should provide the opportunity for many high-rise and other high-risk occupancy buildings to improve their fire safety features.

Small Business Section 179 Expensing

Previously qualified small businesses were allowed to fully expense purchases such as computers, equipment and light duty vehicles up to an annual cap of \$500,000. Under the new law Congress has added fire protection as an eligible expenditure under section 179 of the tax code. Congress also increased the amount that a small business can deduct in a single year to \$1 million. This provision applies only to commercial structures and cannot be used for retrofitting sprinklers in residential structures. However, entertainment venues can be retrofitted under this provision.

This change is a permanent law and unlike section 13201 (which applies to larger businesses), is not gradually phased out over time. To help our members and interested stakeholders fully understand the new tax law, the National Fire Sprinkler Association has created a few examples.

Visit the National Fire Sprinkler Association website at www.nfsa.org for educational materials on the impact of the tax reform, as well as help for home and business owners looking for a sprinkler contractor.

Business and industry owners are encouraged to contact their tax professionals and refer them to the changes in Section 179 of the recently passed tax reform legislation (P.L. 115-97).

National Fire Sprinkler Day – May 19

Raising Public Awareness of this Life-Saving Technology

This year we have a chance to celebrate a new national day that has the potential to increase fire safety and save lives across the state and across the nation. NFPA's Fire Sprinkler Initiative, the Home Fire Sprinkler Coalition, and the Home Fire Sprinkler Coalition-Canada are initiating National Home Fire Sprinkler Day. The project tasks fire sprinkler advocates across North America with hosting events on May 19 that promote home fire sprinklers, raise awareness of this life-saving technology, and break down the myths and legislative barriers to its use. The goal for the day is to have safety advocates host at least one sprinkler-related event in all 50 states and in some Canadian provinces and territories.

The NFPA's Fire Sprinkler Initiative has ideas and resources for creating a successful event at <https://www.nfpa.org/Public-Education/Campaigns/Fire-Sprinkler-Initiative/Take-action/Home-Fire-Sprinkler-Day>.

[nfpa.org/Public-Education/Campaigns/Fire-Sprinkler-Initiative/Take-action/Home-Fire-Sprinkler-Day](https://www.nfpa.org/Public-Education/Campaigns/Fire-Sprinkler-Initiative/Take-action/Home-Fire-Sprinkler-Day).

The NFPA's Fire Sprinkler Initiative asks the fire service to let them know about events held to raise sprinkler awareness for this first National Fire Sprinkler Day. Visit <https://www.nfpa.org/Public-Education/Campaigns/Fire-Sprinkler-Initiative/Take-action/Home-Fire-Sprinkler-Day> to record your event.



15 Years After the Station Nightclub Fire

Sprinklers Have Brought Safety to Massachusetts

February 20, 2018 marked the 15th anniversary of the deadly Rhode Island nightclub fire at The Station. The tragic fire killed 100 people, including many from Massachusetts. In West Warwick, the anniversary was marked by celebrating fire sprinkler provisions in the recent federal tax reform law. The *Tax Cuts and Jobs Act* contains several critically important provisions that provide significant incentives for business owners to install fire sprinklers. One allows small businesses that install sprinklers to depreciate the cost over five years instead of 39 years, recouping the investment more quickly. This provision was first enacted in Massachusetts in 2004.

In Massachusetts, we were determined to learn the lessons of The Station nightclub fire. We wanted to make our clubs safer and prevent a tragedy from happening here. The *Massachusetts Fire Safety Act* of August 2004 brought sweeping changes to fire safety laws. It included a provision to allow owners of affected venues to depreciate the cost of installing sprinklers over five years instead of over 39 years, the provision that has now been made into federal law.

The *Massachusetts Fire Safety Act* required many bars, restaurants, nightclubs and dance halls to install sprinklers. In the first ten years of the law, officials estimate that over 770 Massachusetts venues (not including those in Boston) installed sprinklers. The Automatic Sprinkler Appeals Board (ASAB) was instrumental in implementing the law, helping to resolve questions about which establishments were required to install sprinklers. Owners can appeal an order from the fire chief to install sprinklers to the ASAB. The board continues to hear cases today, but many fewer than when the Massachusetts Fire Safety Act was new because the parameters of the law are now more clearly defined by case law. As property uses change, fire officials continue to issue orders requiring sprinkler installation wherever required.

In response to the tragic Station nightclub fire, the administration convened the Secretary's Task Force on Building and Fire Safety, made up of fire and building officials, club owners, parents who lost children in the fire, and other important stakeholders. They produced a report in September 2003 making 34 recommendations in seven categories including: sprinklers, egress, pyrotechnics, interior finishes, training and education, laws and regulations, and funding and resources. All of the recommendations were considered by the appropriate regulatory agencies or governing bodies and nearly all were implemented. Some of the most important accomplishments were:



- Sprinklering existing nightclubs with a capacity of 100 or more;
- Sprinklering new nightclubs with a capacity of 50 or more;
- Requiring trained crowd managers when clubs are open;
- Completion of daily safety checks;
- Banning the use of indoor pyrotechnics except under limited circumstances;
- Tying liquor license renewal to safety inspections by fire and building officials;
- Creating enhanced penalties for violating fire and building codes and for knowingly putting the public at risk; and
- Creating a streamlined ticketing system for enforcing fire and building codes.

Trained Crowd Managers

To date, over 16,000 people from many states have passed our online crowd manager training program. Massachusetts nightclubs must have at least one trained crowd manager on duty for every 100 occupants, when a club is open to the public. Crowd managers must conduct a daily safety inspection using a checklist and must direct patrons to safety during an emergency. Research has shown that patrons look to staff for guidance during an emergency and having trained crowd managers can save lives.

Ban of Pyrotechnics

Use of pyrotechnics in bars and nightclubs is banned. Limited use of pyrotechnics is allowed in certain sprinklered theaters and large venues (such as the TD Garden and DCU Center). A permit from the fire department is always required.

Inspections Tied to Liquor Licenses

Safety inspections by fire and building officials are now required in order to obtain or renew liquor licenses. The inspections check for building or fire code violations, that trained crowd managers are on staff, and that daily safety checklists are complete, where required.

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Major Improvements in Hot Works Safety

Take Effect July 1



As of July 1, 2018, new provisions of the state fire code take effect regarding permits for hot works, welding and cutting. The most important is that starting July 1, anyone applying for a hot works permit from the local fire department anywhere in the state must demonstrate they have completed an approved training program. DFS has approved the same NFPA Hot Work Safety Certificate Program that the City of Boston has required since October 2016. DFS is evaluating additional training programs which will be announced shortly.

The second important part of the regulation is a clarification of when and who must apply for a hot works permit from the local fire department. With the adoption of the model code in January 2015, anyone conducting this kind of work has been required to have a permit from the local fire department. The new exceptions to this are certain licensed tradespeople, such as electricians and plumbers, already pulling permits from the local building department under their specialty codes (e.g., electrical code, plumbing code). They do not also have to pull a

separate permit from the fire department. There is also an exception for homeowners and hobbyists.

Fire Department Training

DFS will be conducting training specifically for fire service and code enforcement officials to review the new fire code regulations for hot works and learn what is involved in enforcing it. Classes started April 17 and continue across the state throughout May. To register, use the DFS Learning Management System (LMS) and search the catalog for “Hot Works.”

History

One of the many lessons learned from the March 26, 2014 fire that killed two Boston firefighters, sparked by unpermitted and improperly performed welding, was that there was a lack of training and understanding surrounding hot works and hot works safety. The Board of Fire Prevention (BFPR) established a Hot Works Task Group in 2015 to make recommendations to the BFPR for incorporation into the regulations to increase safety awareness in an attempt to mitigate such tragedies from reoccurring.

On January 1, 2018, the newly revised 527 CMR 1.00 Massachusetts Comprehensive Fire Safety Code, included the Task Force recommendations, including Chapter 41, *Welding, Cutting, and Other Hot Works*. The revisions to Chapter 41 include the adoption of material from NFPA 51B *Standard for Fire Prevention during Welding, Cutting, and Other Hot Work* (2014 Edition) into the chapter for ease of reference as well as additional Massachusetts Amendments regarding permit requirements for sole proprietors, individual operators and, training requirements to become a qualified person, as defined in Chapter 41.

15 Years After the Station Nightclub Fire, *continued from page 3*

Enhanced Criminal Penalties

Enhanced criminal penalties were enacted for those who cause death or injury by violating certain fire and building codes. In 2012, three Quincy landlords were convicted of manslaughter in the first application of the new law, M.G.L. c. 148, s. 34B. They rented an illegal basement apartment with only one means of egress, which violated the building code. The lack of proper egress contributed to the death of a man and his two young children, and left the wife badly burned.

In addition, substantial criminal penalties were created for allowing dangerous conditions in public assembly buildings, including blocked ingress or egress, shutting off

or failing to maintain fire protection systems, storing flammables or explosives, using fireworks or pyrotechnics without a permit, and exceeding occupancy limits. A first violation results in a fine of not more than \$5,000 and/or imprisonment of up to 2½ years. Subsequent violations may result in a fine of up to \$25,000 and/or imprisonment of up to five years (M.G.L. c. 148, s. 34A).

Overcrowding

A two-strike rule was created for exceeding capacity for bars, nightclubs, discotheques, and other venues with occupancies of less than 100. If a club is cited for an occupancy

Continued on next page

the fire service this spring to assist in enforcing this provision of the fire code.

Hood Cleaning Companies Must Have a Certificate of Registration

As of January 1 2018, companies and individuals that conduct hood cleaning must both be licensed. Fire chiefs or fire prevention officers may want to communicate this to restaurant owners and managers in town, so that they can ask to see the license before hiring a hood cleaning company. Business owners can use the DFS License Look-up at <https://www.mass.gov/service-details/dfs-licensing> to see if companies or individuals are licensed.

New Recruit Coordinator

Dennis Ball, a Nahant firefighter and MFA instructor for many years, has begun work as recruit programs coordinator. He oversees the Career and Call/Volunteer Recruit Firefighter Training programs. I am delighted to have this longtime member of the DFS family take on this important role in firefighter training.

Online Training Courses Available in LMS

The DFS Learning Management System (LMS) offers eight online training courses to the fire service. One of the most important is *Fire Prevention Basic* which is a pre-requisite

for *Fire Prevention Officer I and II* classes, and is also required by some fire departments for all firefighters to gain a grasp on basic fire prevention issues. The LMS also offers: *Introduction to Transitional Fire Attack*, *Photovoltaics for the Fire Service*, *Compressed National Gas for First Responders*, *Rehabilitation for the Fire Service*, *Fire Services Air Management*, *Chemical Suicide Awareness for First Responders*, and *Traffic Incident Management*.

Bob Rand Appointed to National Pro Board

In January, Bob Rand, MFA certification coordinator, was elected to a 3-year term on the Committee on Accreditation of the National Board on Fire Service Professional Qualifications. This is a recognition of the high caliber and professionalism of the MFA Certification Program. The Committee on Accreditation (COA) is responsible for the day-to-day operations for the National Board on Fire Service Professional Qualifications (Pro Board). The COA reviews applications for accreditation and self-study documents; conducts initial and five year site visit evaluations; approves or denies requests for accreditation; and, ensures compliance with the operating practices of the Board. The COA is comprised of seven members who are elected by the 74 member Advisory Committee and nine who are appointed by the Board.

15 Years After the Station Nightclub Fire, *continued from previous page*

violation twice in a year, or exceeds its capacity by more than 50%, automatic sprinklers must be installed within 90 days or the business will be shut down (M.G.L. c. 148, s. 26 G1/2). Brockton's Emu Safari club was the first nightclub required to install sprinklers due to overcrowding.

Ticketing System of Code Enforcement

A statewide non-criminal ticketing system was implemented that streamlines enforcement of fire and building codes. This program has been adopted in 207 communities to date. Communities are required to select and train a hearings officer in order to participate in this method of code enforcement (M.G.L. c. 148A). Violations are subject to \$100, \$500, and \$1,000 fines for a respective 1st, 2nd, or 3rd violation of the applicable code requirements.

In recalling the 15th anniversary of the deadly Rhode Island nightclub fire, State Fire Marshal Ostroskey said, "Despite all we have done to make the club-going public safer in Massachusetts since 2003, it is important that people learn several key lessons from this fire to keep themselves safe in nightclubs and other public event venues:

- If a club or event space is overcrowded, leave. An overcrowded club is not safe.

- When you enter a club or other event venue, notice all the exits, not just the one you used to enter. Make a plan of how to exit the building in case of emergency.
- Don't wait for venue staff to tell you to leave if you feel unsafe or see an emergency. Don't let anyone tell you cannot use an exit. Use any exit you see to escape danger."

Education

In an effort to educate college students, most of whom were toddlers when The Station nightclub burned, DFS created a nightclub safety video called, *A Survival Guide to Getting In and Getting Out*. It can be found on the DFS Nightclub Safety webpage at <https://www.mass.gov/service-details/nightclub-fire-safety>.



Emergency Planning and Preparedness in Schools

Joint advisory from State Fire Marshal Ostroskey and Commissioner Charles Borstel (DPL) on 3/30/18.

In response to recent events involving violence in schools, most notably the Parkland, Florida school shooting, many communities are questioning what can be done to increase safety within their schools. When considering the best ways to prevent, prepare for, and respond to all types of emergencies in schools, building and life safety should be the primary consideration. Every school has been required to have an all hazard evacuation plan since 2000, and fire, police and school officials are required to meet before the start of each school year to review it. Now might be a good time to meet and review the plan again to ensure that it addresses current concerns.

Fire service personnel are encouraged to work with other public safety personnel and school officials to promote a comprehensive approach to school safety and response to all emergencies that develop in our communities. We need to make certain that the planning and proposed actions are thoroughly examined, code compliant, and continuously evaluated and communicated in order to protect our citizens from any negative consequence during incidents. We don't want well intended ideas to result in unintended consequences. Continued dialogue with stakeholders leads to the best understanding and development of effective procedures. A summary of requirements applicable to Massachusetts schools is provided below. **Remember that the best response begins with effective planning.**

Fire Evacuation Drills

We know that the incidence of fires is a relatively common occurrence in schools and the prompt and orderly

evacuation of building occupants is appropriate and necessary. While the number of actual fires in schools in Massachusetts has been declining over the last 5 years (2012 - 2016) based on MFIRS data, we still experience an average of 161 school fires annually which result in over \$5M (averaged) loss each year.

In order to comply with the Massachusetts Comprehensive Fire Safety Code, 527 CMR 1.00, fire evacuation drills must be conducted on a regular basis and should include expected and unexpected times and varying conditions to simulate conditions possibly encountered in an actual emergency (527 CMR 1.00: 10.5.4). The following is a summary of the requirements of 527 CMR 1.00: 20.2.4.2:

- The responsible school official must formulate a plan for the protection and evacuation of all occupants in the event of fire and must include alternate means of egress.
- The school official plan must ensure that staff are properly trained on the plan and fire drill procedures.
- All students must be advised of the fire drill procedure or take part in a fire drill within three days of the start of school.
- The head of the fire department, or a designee, must visit the school at least four times a year for the purpose of conducting fire drills and ensuring that staff understand the procedures. These drills should be conducted without advance warning (except for the school official).
- Records of fire exit drills must be kept on the school grounds and provided to the head of the fire department at least twice a year.
- Fire exit drills must include the complete evacuation of all persons from the building.
- A drill of the multi-hazard evacuation plan, required by the provisions of St. 2000, c.159, s. 363, shall be permitted to be substituted for one of the required fire drills.

Practicing fire drills is essential to an effective response to fire alarms during a real emergency. Drills should be scheduled in advance but notification of a drill should be limited to those personnel necessary for the successful conduct of the drill. Inadvertently posting the drill date and time publicly could allow for the drill to be used to do harm.

Since staff members should have advanced training in recognizing hazards, they should be the first to enter a hallway. Hazards could include smoke, fire, or an intruder intending to do harm. Staff should practice situational awareness and be prepared to use alternate egress means or make decisions based on the hazards presented. The following are questions that may be posed to staff members during training:

- Do we leave? Or do we stay and shelter in place?
- If we cannot escape through the primary means, what is the alternate means?
- Are windows or other escape routes available?
- What methods can be used to notify officials if the primary egress is blocked?

When assessing emergency plans, these questions should be considered and the resulting answers should be included in the plan and at a minimum, practiced through staff training exercises.

Lockdown Plans

Lockdown plans can be incorporated within the multi-hazard evacuation plan, and practiced as one of the minimum four required drills each year. When explaining and conducting these drills, consideration and sensitivity should be incorporated into the discussion of this type of emergency plan.

Per St. 2000, c. 159, s. 363: “Notwithstanding any general or special law to the contrary, the superintendent of each school district shall, prior to the beginning of the school year, meet with the fire chief and police chief of the city, town or district to formulate a school specific “Multi-hazard evacuation plan” for each school under the superintendent’s supervision. Said multi-hazard evacuation plan shall encompass, but not be limited to, evacuations for fires, hurricanes and other hazardous storms or disasters in which serious bodily injury might occur, shootings, and other terrorist activities, and bomb threats. Said plan shall be designed for each school building after a review of each building. Said plan shall include, but not be limited to: (1) establishment of a crisis response team; (2) a designation as to who is in charge of said team and designated substitutes; (3) a communication plan; (4) crisis procedures for safe entrance to and exit from the school by students, parents and employees; and (5) policies for enforcing school discipline and maintaining a safe and orderly environment during the crisis. Each district, with the assistance of the local police and fire departments, shall annually review and update as appropriate said plan. At the beginning of each school year, students at each school shall be instructed as to the plan that is developed.”

Fire Alarms

Fire alarms are a primary feature of fire safety in public buildings. They provide early detection and notification of a potential fire and initiate the evacuation sequence. While a fire alarm system may be used by a school intruder to inflict harm on the building occupants, removing fire



In response to recent school violence and shootings, many communities are questioning what can be done to increase safety in schools. Building and life safety should always be the primary consideration.

alarms or altering the response to a fire alarm notification signal is not the best solution. Delayed evacuation or a “shelter-in-place” fire alarm response may have deadly consequences in the event of a rapidly growing fire.

Fire alarm tones are standardized across all public buildings and in the home. Children may become confused if taught to react differently to a fire alarm signal in a school vs. the home. Additionally, if people are conditioned to ignore a fire alarm signal until instructed to evacuate by a speaker system or authority figure, the advantages of early detection and notification intended by a fire alarm system are lost. Removing required fire alarms from public buildings directly conflicts with the intention of the building and life safety codes and disregards the history of lives saved from fires directly resulting from the effective and reliable technology of fire alarms.

School staff and students must be made aware that any fire alarm activation has the potential to be a result of a catastrophic event. Regardless of whether there is smoke and/or fire along the egress path or an intruder, the staff personnel should be trained to know how to react to these potential situations. Prevention is the best approach to life safety in buildings. When prevention fails, situational awareness and enforced training in staff members are the best routes to survive an incident.

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Bringing High School Students to the Fire Service

A Cape Story

In recent years, Mattapoisett FF Justin Dubois became concerned about the inability of cape area fire departments to attract and retain new call/volunteer firefighters. Dubois attends the Massachusetts Public Fire and Life Safety Education Conference most years and he heard presentations at several conferences about citizen fire academy programs around the state. He realized that he could develop a program for his area, but he knew he needed partners in the project.

Dubois recruited FF Ross Macedo from his department, Captain Jeff and FF Tracey Eldridge from Rochester and FF Joshua Fardy from the Marion Fire Department. Together, this group put together an Explorer program, based on a successful program led by Anne Marie Peckham in Westport.

The new co-ed Explorer program teaches students (aged 14-18) fire prevention from the firefighter's perspective. Eleven students are enrolled in the initial program. They meet weekly and on one Saturday per month. According to Dubois, "This Explorer program took off and went beyond our expectations. The parents and the community are so excited about their children's participation and what they are learning. One student's father is on the school committee and he has photographed activities to document and generate publicity. We have the backing of the fire departments, the schools and the communities, and we have had nothing but compliments about what we are trying to do."

The program was launched during Fire Prevention Week in October, 2017. Students have their own equipment, donated from fire departments around the Commonwealth. Instructors are leading them through skills taught at the Massachusetts Firefighting Academy (MFA). Students have participated in an ice rescue and have formed an association similar to a fire department. Each participating town hosts the students on a rotating basis. Because each town has certain strengths, students are exposed to a variety of fire issues. In Rochester, students focus on forestry, learning about brush trucks, tankers, and drafting. In Mattapoisett, students focus on water safety issues. In Marion, they focus on EMS skills. A Facebook page helps promote and share what they are learning (MMR Hose CO. Explorer Post 343).

"The students have had unforgettable experiences and they are learning life skills," says Dubois. So far, they have performed an ice rescue training exercise, they visited the New Bedford Fire Museum, heard guest speakers including



nurses and fire chiefs, and began a first responder training program in April.

Dubois believes that launching the program with a small student group has been very helpful. Students have bonded, and instructors have discovered that when you provide teens with skills, support and knowledge they blossom and grow beyond expectations. The Explorers who are graduating this year want to continue and so the instructors have begun to think about promotional exams and program expansion. The instructors believe they will have at least four new firefighters in their towns as a result of this year's program. And this is exactly what they had hoped for.

Dubois, Macedo, Jeff and Tracey Eldridge, and Fardy are impressed with the program. It has been praised by parents and community members. Their fire departments have bonded and are now working closely together. Firefighters from other departments in the area want to join this voluntary program. They believe that the program is generating both new firefighters and a new generation of men and women who want to give back to their communities.

Class 01 will graduate soon. The students and founders of the program are looking forward to Fire Prevention Week in October of 2018 when Class 02 begins.



Fire Investigation News

Woodstove Cause of Oxford Fatal Fire

A December 14, 2017 fatal fire at 16 Sacarappa Road in Oxford was caused by a woodstove. The fire took the life of Josephine Mulvey, age 93. Two Oxford firefighters were transported for minor injuries. The fire started at the woodstove in the living room of the single family home at 7:45 p.m. The home was totally destroyed. It was in a very rural wooded area with no hydrants. Firefighters from ten communities had to use a tanker shuttle to provide water on a bitterly cold night. The fire was jointly investigated by Oxford Fire and Police and State Police assigned to the Office of the State Fire Marshal and to the Office of the Worcester District Attorney.

Heating Cable Caused Mashpee Medical Marijuana Facility Fire

The cause of the February 9, 2018 fire at 29 Echo Road in Mashpee was accidental. The building housed a medical marijuana facility that was scheduled to have its final Department of Public Health (DPH) inspection before opening on the day of the fire. The fire started in a ceiling void space and spread to the attic. Heating cables meant to prevent water pipes from freezing ignited nearby cellulose insulation. Property damage is estimated at \$25,000. The fire was jointly investigated by the Mashpee Fire and Police Departments and State Police assigned to the Office of the State Fire Marshal.

Arrest in Brockton Domestic Violence Arson

On February 13, 2018, Brockton Police arrested a man for setting fire to a residential rooming house at 9 Highland Street, Brockton. The man was also charged with breaking and entering in the nighttime and domestic violence assault and battery. Additional charges may be forthcoming. The fire started at 2:25 a.m. and caused \$40,000 in damages. Two people were transported to a local hospital with minor injuries. The fire and incident were jointly investigated by the Brockton Fire and Police Departments and State Police assigned to the Office of the State Fire Marshal. The fire was determined to be intentionally set.

Man Arrested for New Bedford Arson

On February 28, 2018, New Bedford Police arrested Xavier Betancourt-Echev, 25, of 330 North Front St. Apt. 3S, New Bedford for setting a fire in a 5-family home at the same address. The one-alarm fire started at 11:50 a.m. on February 28, 2018. Members of the New Bedford Fire and Police Departments and State Police assigned to the Office of the State Fire Marshal jointly investigated the fire. They determined the fire was intentionally set. The Bristol County District Attorney's Office is prosecuting.

Smoking Caused Rutland Condo Fire

Smoking caused the January 12, 2018 fire at 176 Maple Street, Rutland. The fire occurred inside a second floor condominium at Countryside Estates. A man, the sole resident of the condo, was seriously injured and taken to a Worcester hospital for treatment. He jumped from his balcony. The fire started on the living room couch which was surrounded by combustible materials. The resident smoked little cigars, which are not required to be "Fire Standard Compliant," so they do not resist ignition when not being actively smoked. Cigarettes sold in Massachusetts are required to be fire standard compliant. The 24-unit building was built before 1975 and so was not required to have fire sprinklers. If the building were built today, it would be required to have fire sprinklers.

The building had a working fire alarm system with emergency door closures in hallways which helped many residents escape safely. The Rutland Fire Department rescued eight residents from second and third floor balconies by ladder. About 50 people are displaced by the fire.

Members of the Rutland Fire and Police Departments, and State Police assigned to the Office of the State Fire Marshal jointly investigated the fire.

Smoking Caused New Bedford Fatal Fire

Improper use or disposal of smoking materials caused the January 17, 2018 fatal fire at 282 Tinkham Road, New Bedford. The victim, 56-year old Agnes Leite, was rescued by the fire department. Paramedics administered a cyanide antidote to Ms. Leite and were able to resuscitate her, but she died later at the hospital. Cyanide is one of the toxic, deadly gases produced when household furnishings burn.

The fire started on a mattress in a second floor bedroom where the victim was found. She was known to roll her own cigarettes, which are not required to be fire resistant, unlike commercially produced cigarettes.

The New Bedford Fire and Police Departments and State Police assigned to the Office of the State Fire Marshal jointly investigated this fire.

Smoking on Home Oxygen Cause of Fatal Fire

The cause of the March 8, 2018 fatal fire at 30 Railroad Street in Andover was smoking while on home oxygen. The fire took the life of 85-year old Nicholas Rizzo II. The fire originated inside the victim's fourth floor apartment at 10:50 a.m. There was evidence of smoking in the presence of home medical oxygen. The fire was jointly investigated by the Andover Fire and Police Departments and State Police assigned to both the Office of the State Fire Marshal and the Office of the Essex District Attorney.

Continued on page 11

DFS Assets Used in Response to Chicopee Fire

On Friday, February 2, 2018 Captain Robert Anderson and his team on Engine 1 were returning to their quarters when they noticed smoke coming from the roof of T&L Antiques and Used Furniture at 105 East Street, Chicopee. Anderson and his crew stopped and went into the open business to investigate.

The 4,000 square foot building was constructed in the late 1800's as a single family home. The 3 ½ story, wood frame building had been modified to accommodate changes in occupancy many times over the years.

Anderson alerted the business owner and customers about the smoke. Firefighters found fire on the second floor in the area surrounding metal duct work for a non-working electric furnace. Further investigation located a second floor hall closet with heavy fire. Firefighters were able to stretch lines up to the second and third floors for a time but were forced to leave when fire spread rapidly through void spaces in the building.

The team began to suppress the fire from the exterior using master steams but were hampered by freezing temperatures and snow. The building was framed by giant beech trees with large limbs. Water from hose lines rapidly built up ice on the trees, causing branches to break and fall. In the first hour of suppression efforts, the fire scene became an ice palace. Fire suppression efforts continued through the night and into the next day. A large section of the building along the "C" wall collapsed.

The Chicopee Fire Investigation Unit, along with troopers assigned to the Fire & Explosion Investigation Section began an investigation into the origin, cause and circumstances of the fire.

Deputy Chief Cross requested the DFS Rehab unit. The Rehab was used for three days for firefighters and to conduct interviews with witnesses.

Because investigators could not reach the top floor and roof of the building, they requested use of the DFS drone. Dave Clemons responded with the drone which was able to safely view and document inaccessible areas of the building.

The City of Chicopee DPW and Water Departments were also required. The DPW cleared an enormous amount of ice from the building perimeter and hatchway which allowed investigators inside the basement. Investigators and firefighters were trying to empty six feet of water from the basement with fire department pumps. This was very

slow work. The Chicopee Water Department stepped in with industrial pumping equipment that allowed investigators to empty the basement of tens of thousands of gallons of water and to route the water into the proper city manholes, avoiding the flooding of nearby basements.

Trooper Jeremy Cotton, MSP Bomb Squad, also responded to conduct non-destructive X-ray testing of a metal pipe from a modified wood furnace to one of the several chimneys in the building. Cotton also examined a piece of military ordinance encased in ice that was discovered by investigators during the scene examination.

The business owner said that the sole source of heat for the building was a wood-fired boiler in the basement. It was an old coal-fired furnace that had been converted to burn wood. He also reported that the chimney had been cleaned recently.

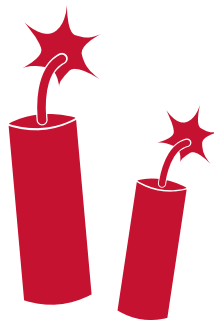
During inspection of the wood boiler and accompanying exhaust systems, investigators found that the sheet rock over the single-walled metal pipe leading from the wood boiler to the chimney had been significantly burned. The owner reported that he had recently removed the pipe in order for the chimney sweep to clean it. At that time, there was no fire damage to the sheet rock. A chimney inspection revealed it to be unlined, with missing bricks and mortar failure. Investigators found a hole in the bricks above the roof line that may have happened during suppression efforts.

Investigators interviewed the chimney sweep who reported that he cleaned the chimney of a large build-up of creosote in November, 2017 with 35 feet of brush. Shortly after the cleaning, the business owner called to report a chimney blockage and the sweep returned with an additional 10 feet of brush to reach the cap of the chimney. The chimney sweep removed more creosote and mortar and bricks fell. The business owner was advised to install a chimney liner after the first visit from the chimney sweep. But the owner felt that he could not afford the liner right away and had decided to wait one year to install it.

The fire was determined to be accidental. Improper chimney maintenance contributed to this fire. The business owner later learned that his insurance covered only the building, and not the contents. The entire building was filled with collectibles and furniture. Very little of the building contents could be salvaged.

State Police Bomb Squad Assists in Clean Up

At Public Site Contaminated with Explosives



The Massachusetts State Police Bomb Squad is destroying munitions, explosives of concern, and materials potentially presenting an explosive hazard that are being excavated as part of the clean-up of the former National Fireworks facility in Hanover, Massachusetts. The project is being conducted under the Massachusetts Contingency Plan (MCP) regulatory

framework with oversight from the Massachusetts Department of Environmental Protection (MassDEP).

National Fireworks produced pyrotechnics in Hanover beginning in the early 20th century. Military agencies used the property to manufacture munitions and explosives from World War I through the 1970s. During World War II, the work included munitions research and development and manufacturing of munitions and pyrotechnics. Some areas of the site were used for munitions storage, waste

disposal, munitions testing, and the destruction of off-spec munitions and other materials.

The facility closed in 1970 and the Town of Hanover purchased part of the property for conservation land and a public works facility. This part of the property is where much of the munitions and explosives testing and disposal of materials took place and where potentially hazardous items are being found.

Clean-up of the property began in late May, 2017. Initially, Bomb Squad support was to be limited to a small number of planned detonations. But many more potentially explosive items were discovered on the property than anyone planned. Sometimes, daily detonations have been needed to destroy recovered items. So far, more than 5,500 items have been destroyed by the Bomb Squad in support of the overall effort to make this area safe for public use.



Shutterstock

Fire Investigation News, *continued from page 9*

Just four days later on March 12, a Worcester woman using home oxygen and smoking was pulled from a fire by a disabled neighbor.

Between 2008 and 2017 there were 19 deaths, 55 civilian and 5 firefighter injuries in fires where home oxygen was a factor in the cause or the spread of the fire.

Smoking Caused Three Rivers Fatal Fire

The March 23, 2018 fatal fire at 9-15 Springfield Street in the Three Rivers section of Palmer was caused by the improper disposal of smoking materials. The fire claimed the life of a 66-year old man who lived in a third floor apartment. Twelve people were displaced from the 6-unit building. The fire originated on the third floor rear porch of the victim's apartment where he had set up an upholstered recliner for smoking outside. He was able to call 9-1-1 to report the fire but unable to escape before being overcome. Members of the Three Rivers Fire Department and Palmer Police Department along with State Police assigned to both the Office of the State Fire Marshal and the Office of the Hampden District Attorney jointly investigated this fire. Assistance was received from the Code

Compliance and Enforcement Unit in the Department of Fire Services and State Police Crime Scene Services.

Smoking Caused Fatal Fire in Littleton

Improper disposal of smoking materials was the cause of the January 1, 2018 fire at 315 King Street, Littleton. The fire took the life of 76-year old Jan Karner. The fire began in the first floor living room and the victim was found in her recliner. She was known to be a heavy smoker. There were hard-wired smoke alarms in the home, and a battery-operated alarm in the basement with no battery. Witnesses did not report hearing any smoke alarms sound. Whether the alarms on the first and second floors worked or not, or had been disconnected cannot be determined as they were consumed by the fire. The hard-wired alarm in the basement operated after the fire despite being expired, but expired alarms cannot be relied upon to operate in an emergency. It was made in 2003 and was well over the ten year expiration date for smoke alarms. Members of the Littleton Fire and Police Departments and State Police assigned to both the Office of the State Fire Marshal and to the Office of the Middlesex District Attorney jointly investigated this fire.

Proper MFIRS Incident Coding

Supports Tech Rescue Mission



Technical rescue incidents often make dramatic headlines, have grateful survivors, and earn accolades from peers at the annual Firefighter of the Year Heroic Awards. Every fire department needs access to technical rescue resources, but like hazardous materials resources, it makes more sense for fire departments to share access to properly trained staff and equipped technical rescue teams.

For almost ten years, technical rescue teams in Massachusetts have received their initial training and equipment from grants from the U.S. Department of Homeland Security. This funding is used to set up teams but is not designed to sustain them. State legislation is pending that would standardize technical rescue training and equipment in Massachusetts and create Technical Rescue Regions, a Coordinating Council, and a funding stream to support the teams.

Accurate Massachusetts Fire Incident Reporting System (MFIRS) data on the volume of technical rescue incidents can help both fire service and legislative decision makers. Accurate data will help local technical rescue teams and the training program at the Massachusetts Firefighting Academy to allocate resources where they are most needed.

Using the correct incident type codes is always important in MFIRS reports. Technical rescue incidents include rescues from heights, confined spaces, trenches, ice, and water. The incident types fall under 300, *Rescue and Emergency Medical Services (EMS)* in MFIRS software and forms. Insuring correct incident code types on MFIRS reports helps in proper tracking of complex technical rescue calls throughout the state. Some technical rescue incident codes are listed below:

Search for lost person

- 341 - Search for person on land. Includes lost hikers and children, even where there is an incidental search of local bodies of water, such as a creek or river.
- 342 - Search for person in water. Includes shoreline searches incidental to a reported drowning call.
- 343 - Search for person underground. Includes caves, mines, tunnels, and the like.
- 340 - Search for lost person, other.

Extrication, rescue

- 351 - Extrication of victim(s) from building or structure, such as a building collapse. Excludes high-angle rescue (356).
- 352 - Extrication of victim(s) from vehicle. Includes rescues from vehicles hanging off a bridge or cliff.
- 353 - Removal of victim(s) from stalled elevator.
- 354 - Trench/below-grade rescue.
- 355 - Confined space rescue. Includes rescues from the interiors of tanks, including areas with potential for hazardous atmospheres such as silos, wells, and tunnels.
- 356 - High-angle rescue. Includes rope rescue and rescues off of structures.
- 357 - Extrication of victim(s) from machinery. Includes extrication from farm or industrial equipment.
- 350 - Extrication, rescue, other.

Water and ice-related rescue

- 361 - Swimming/recreational water areas rescue. Includes pools and ponds. Excludes ice rescue (362).
- 362 - Ice rescue. Includes only cases where victim is stranded on ice or has fallen through ice.

Continued on next page

Technical Rescue Incidents 2012 - 2016

Incident Type	Description	Total # of Incidents	2012	2013	2014	2015	2016	2017*
350	Extrication, rescue, other	1,733	244	330	278	280	316	285
351	Extrication of victim(s) from building/structure	476	98	65	65	79	85	84
352	Extrication of victim(s) from vehicle	2,798	520	503	473	459	472	371
353	Removal of victim(s) from stalled elevator	14,037	2,172	2,170	2,221	2,353	2,514	2,607
354	Trench/below grade rescue	130	10	19	20	25	40	16
355	Confined space rescue	74	13	11	7	16	16	11
356	High angle rescue	406	56	53	66	72	86	73
357	Extrication of victim(s) from machinery	276	32	49	49	54	50	42
360	Water & ice related rescue, other	1,051	142	184	180	180	174	191
361	Swimming/recreational water areas rescue	544	83	113	78	74	114	82
362	Ice rescue	182	13	44	31	37	28	29
363	Swift water rescue	161	20	39	24	27	25	26
364	Surf rescue	80	11	15	15	17	13	9
365	Watercraft rescue	953	152	138	150	161	181	171
Totals		22,901	3,566	3,733	3,657	3,834	4,114	3,997

*2017 data is preliminary

363 - Swift-water rescue. Includes flash flood conditions.

364 - Surf rescue.

365 - Watercraft rescue. Excludes rescues near the shore and in swimming/ recreational areas (361). Includes

people falling overboard at a significant distance from land.

360 - Water and ice-related rescue, other.

Home Made Explosives Training for 1st Responders

The Massachusetts Firefighting Academy is now hosting *Home Made Explosives (HME) and Post Blast Training for the First Responder*. The class helps participants recognize component materials for making HMEs and explosive devices. When public safety officials are trained to identify and recognize pre-cursor chemicals used to make HMEs and activities, they can interrupt the manufacturing process and prevent possible acts of terrorism.

The course provides a safe environment for fire-fighters, EMTs, and law enforcement to share information and learn how to search for secondary devices. It includes information for EMTs on response to injuries from making or using HMEs and has two hours of EMS continuing education credit. The class includes a live demonstration of the power of HMEs.

The class is taught by Auburn Police Officer James Ljunggren, a 30-year police veteran who has been involved with commercial blasting since the 1980s. He has worked throughout the United States, Europe and the Middle East and is an explosive odor detection canine handler. He was deployed at the Boston Marathon bombing in 2013.

The audience for this class is law enforcement, military, fire service, corrections, and EMS personnel. Classes have been underway since February. These sessions still have openings: May 9, May 22, June 12, June 19. Sign up through the DFS Learning Management System at <https://hraccess-us.technomedia.com/mfa/>. The class is made possible by a grant from U.S. Homeland Security funds.

Mobile Maze Trailer & Portable Simulated Burn Prop



Mobile Maze Trailer

Purchased through Assistance to Firefighters Grant

In April, DFS received a new self-contained breathing apparatus (SCBA) mobile maze trailer and a portable simulated burn prop (commonly known as a flashover prop). The purchase of these training props was supported by the U.S. Department of Homeland Security's (DHS) FY 2016 Assistance to Firefighters Grant (AFG) program award.

The new maze trailer will be used in initial and advanced firefighter training, and as a maintenance and practice tool in the use of SCBA while working in and navigating through limited or restricted areas. The trailer is a maze that allows students to move through tubes, to ascend and descend through ceiling or floor hatches, to navigate low profile openings, and more. One of the most important firefighting skills is the ability to enter a dark, smoke filled environment. Nearly all search and rescue and interior fire suppression occurs in these conditions. All firefighters gain confidence in the use of SCBA in their initial training, but this confidence can degrade over time. And self-confidence in the use of SCBA is a leading factor in reducing firefighter air consumption. Continued training with SCBA in dark,



Portable Simulated Burn Prop

smoke-filled buildings is critical. The DFS maze trailer will allow for this continued training.

The new portable simulated burn prop will be used to allow both new and veteran firefighters to recognize when a room or other burning structure is about to completely combust. It gives them the opportunity to observe fire behavior, see warning signs of potential danger, and use various techniques that may save someone's life. A very high percentage of firefighters who die in fire, die from these fast changing conditions. The training is designed for the student to be able to see these warning signs and get out before the situation worsens.

Both new mobile training props will be stationed at the Springfield campus. They will be used in the MFA's Career Recruit and Call / Volunteer Firefighter Training programs on site. They will also be used for municipal trainings in the western part of the state. The existing DFS maze trailer and portable burn prop will remain in Stow and serve the eastern part of the state for municipal trainings.

The Massachusetts State Building Code, 780 CMR, does allow for alternative methods for some types of fire alarm initiation. Most commonly, manual pull station locations may be reduced or eliminated based on other features of fire protection within the building. If an existing school does not meet the provisions, there may be an option to retrofit the manual pull stations with locally-alarming plastic covers to discourage students from pulling false alarms. Any change to an existing school must be evaluated by a registered design professional and approved by the AHJs (building and fire officials) before being implemented in a school. Some exceptions for manual pull stations include:

- **780 CMR 907.2.3 Group E. Exception 3:** Manual fire alarm boxes are not required in Group E occupancies where all of the following apply:
 - 3.1. Interior corridors are protected by smoke detectors.
 - 3.2. Auditoriums, cafeterias, gymnasiums, and similar areas are protected by heat detectors or other approved detection devices.
 - 3.3. Shops and laboratories involving dusts or vapors are protected by heat detectors or other approved detection devices.
- **780 CMR 907.2.3 Group E. Exception 4:** Manual fire alarm boxes shall not be required in Group E occupancies where all of the following apply:
 - 4.1. The building is equipped throughout with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1.
 - 4.2. The emergency voice/alarm communication system will activate on sprinkler water flow.
 - 4.3. Manual activation is provided from a normally occupied location (At least one manual pull station is provided at a normally occupied location such as the principal's office).

Classroom and Egress Doors

Classroom and egress doors must comply with the provisions of Chapter 10 of the building code. These doors are critical components in the means of egress system and must be maintained in a safe manner to allow students and staff to exit the building. Specifically, the code requires all egress doors to be readily openable from the egress side with a single operation, and without the use of a key, special knowledge, or effort. The majority of retrofit classroom door security and barricade devices do not comply with this requirement and are not permitted to be installed. However, there are door locking devices available which do comply with the requirements of the building code and can provide a level of safety while still maintaining egress

from within the classrooms and other spaces. For the installation of any door hardware in new or existing buildings, refer to the building code and consult with the AHJ (authority having jurisdiction) for specific requirements and allowances. Door locking devices must comply with the following:

- Door hardware must meet accessibility requirements and not require tight grasping, pinching, or twisting of the wrist to operate.
- Door hardware must be installed between 34" and 48" above the finished floor.
- Manually operated bolt locks or surface locks are not permitted to be used.
- The unlatching of any door or door leaf must not require more than one action.
- Doors may be electromagnetically locked in accordance with 780 CMR 1010.1.9.9.
- Panic or fire exit hardware is required on latching doors along the means of egress, which serve 50 or more people.

The best policy is to ensure classroom doors are provided with single action locks and to keep the doors closed and locked at all times during school operation. Doors may prevent entering anytime; however, they cannot restrict exiting.

Prevention is the best defense. Emergency planning and training are critical for mitigation of an event that cannot be prevented. These tactics have worked for decades to prevent fires in schools from becoming catastrophic. If the application of prevention, planning, and preparedness are provided when responding to intruders, the difference can be monumental.

More Information and Resources

For more information on code compliance and fire and life safety in buildings, please contact your local building official and fire official. Code compliance questions can also be directed to the Department of Fire Service's Code Compliance help desk at 978-567-3375, which is staffed from 8:00 a.m. to 4:00 p.m., Monday through Friday.

An excellent resource for additional information is available on the National Association of State Fire Marshal's website at www.firemarshals.org.

All references within this document are to:

- 780 CMR, Massachusetts State Building Code, 9th edition (based on the 2015 IBC and MA state amendments), and
- 527 CMR 1.00, Massachusetts Comprehensive Fire Safety Code, 2018 edition (based on the 2015 NFPA 1 and Massachusetts state amendments).

Fire Chaplains in Massachusetts

Supporting and Serving the Fire Service and the Public

Fire department chaplains are selected and appointed by local fire departments and can provide spiritual and emotional support to firefighters and their family members whenever necessary. Chaplains also serve residents of Massachusetts if they become victims of fire, medical emergency or natural disaster. Chaplains are professionals who can provide counseling, tend the sick and injured, comfort the grieving and are often trained in the delivery of Critical Incident Stress Management (CISM) skills. Fire department chaplains are available to respond to emergencies at any time. Chaplains are present at major fire and emergency incidents, fire training sessions, memorials, social events, public functions and as part of the team in the fire station.

What do Chaplains do?

Chaplains provide spiritual and personal counseling to firefighters and other fire department members. Some chaplains work a set schedule but are usually available at any time, even weekends and holy days. Fire departments sometimes loan their chaplain to emergency medical service providers or to the local police department.

Chaplains do not usually take confession or offer last rites, but they can counsel fire department personnel. Chaplains can also offer marriage counseling to department staff members and their spouses or fiancés, and grief counseling to the families of firefighters killed in the line of duty. A fire department may ask its chaplain to conduct funerals or memorial services, especially if a fallen firefighter does not have their own clergy. A chaplain can officiate at a wedding and some chaplains represent their fire departments at community events. They may serve on community boards, join local ministerial associations and speak at events and civic organizations. Chaplains create a bridge between a fire department and the community it serves.

The chief chaplain can answer questions about department chaplains, help to locate a chaplain to serve a department, and arrange for presentations about the ministry of a fire chaplain. Clergy currently serving as chaplains, and those who want information about serving the Corps can also contact the chief chaplain: The Rev. Jim Tilbe, 18 North Main Street, Raynham, MA 02767. Cell: 774-696-4587. Email: jtilbe@comcast.net. Website: www.massfirechaplains.com.

DFS Orientation for Command Staff

DFS is offering sessions for new fire chiefs, new-to-Massachusetts fire chiefs and their command staffs to learn about the assistance available from the Department of Fire Services. Participants will learn about all the divisions of DFS, receive contact information for all services, and have a chance to ask questions about all the DFS divisions that support the Massachusetts fire service.

DFS will host two sessions in order to reach the widest possible audience:

- Stow Campus, May 18, 8 a.m. – 5 p.m.
- Springfield Campus, May 21 and 22, 6 – 9 p.m. You need to attend both the evening sessions.

Register through the DFS LMS:

<https://hraccess-us.technomedia.com/mfa/>

New Canine Joins Team



New explosive detection dog (E-K9) Lola with handler Trooper Rogowski. Photo by Public Safety Media.

Rapid Intervention Training

Development in Massachusetts

One of the outcomes of the 1999 Worcester Cold Storage Warehouse fire that claimed the lives of six Worcester firefighters, was a Safety and Survival training program that brought existing and newer self-rescue and survival techniques into one training program. It included training on stand-alone rapid intervention teams whose sole responsibility is to be prepared to rescue trapped or injured firefighters on the fire ground. Since then, rapid intervention training has increased dramatically and become a regular part of firefighter and fire officer training.

In 2007, the Massachusetts Firefighting Academy (MFA) embarked on a mission to study and implement a Rapid Intervention Training (RIT) Program that would be available to every firefighter in the Commonwealth. A committee was formed to review programs around the country and to incorporate best practices into our program. The group found that we needed a program:

- For everyone in the fire service;
- That taught a standard curriculum and skill set;
- Focused on the “rapid” actions needed;
- That could be delivered in modules; and
- That could be taught in a structured way.

RIT Today

Today the Massachusetts Firefighting Academy offers several levels of rapid intervention training:

- Two days during the Career Recruit Program;
- A two day program delivered in the field to any department, upon request; and
- A four day train-the-trainer program that teaches training officers how to train their members in RIT.

As the program developed, we enhanced the training. We overhauled the Survival Skills Program to educate firefighters in self-survival and awareness to anticipate a problem. (LMS Activity Codes: RIT Today 2-day class-#256 and RIT Today 4-day class-#257.)

As we conducted RIT around the state we realized that continual re-evaluation of training needs for this type of high risk/low frequency incident is critical. The review process made clear that we are handling the incidents that occur on the scene, but the correct resources were not always arriving on scene in a timely manner.

Training Chief Officers and Incident Commanders

We developed the Operational Team Leader program in response to the need for team leaders to supervise team operations. Incident commanders needed to know what to expect during such a stressful incident, what resources



they would need, and how to anticipate and prepare for the possibility of needing a rapid intervention team. This prompted the development of the Commanding the Mayday program, which is designed for chief officers and incident commanders. (LMS Activity Codes: Operational Team Leader-#562, Commanding the Mayday Day 1-#258, and Commanding the Mayday Day 2-#259).

Mayday Training for Public Safety Dispatchers

We also developed a program to educate public safety dispatchers. It became clear that many dispatchers had no experience handling a Mayday incident. The course guides dispatchers in their role in a “Mayday” situation on the fire ground. We teach the dispatcher what to listen for, what to expect, and what is expected of them.

Because many dispatchers do not have much exposure to fire incidents, we teach fire ground basics including apparatus and structure of operation from command to the company level. The course reviews real world incidents with actual audio from Maydays across the country that had a variety of outcomes. The course ends with analyzing and critiquing small pieces of Mayday calls, not to criticize, but as a learning experience. (LMS Activity Code: Mayday Training for Public Safety Dispatchers-#279).

Firefighting is an inherently dangerous profession. By using real world experiences to develop training, we can lessen those dangers, and help everyone to go home.

To register for these courses, use the DFS Learning Management System from our website www.mass.gov/dfs or directly at <https://hraccess-us.technomedia.com/mfa/>.

Massachusetts Firefighting Academy *Graduations*

Class #259



Class #260



Class #261



Class #S06



Fire Investigation Programs

The Massachusetts Firefighting Academy (MFA) offers tuition-free Fire Investigation programs. The basic and advanced programs provide fire, and state and local police officers with the technical skills to accurately determine the origin and cause of fires in their jurisdictions and together, build solid, prosecutable cases.

State Fire Marshal Ostroskey said, "The team concept of fire investigation has been used successfully in Massachusetts for over 25 years and it starts with joint training." He added, "When police and fire are trained in the same techniques and procedures together, the consistency leads to solid origin and cause determinations, and when arson is the cause, solid criminal cases."

Basic Fire Investigation Course

Ninety public safety officers completed the Massachusetts Firefighting Academy's six-day *Basic Fire Investigation* course in December, 2017. This rigorous professional training provides fire, and state and local police officers with the technical skills to accurately determine the origin and cause of fires in their jurisdictions and together, build solid, prosecutable cases.

The 90 graduates included 71 firefighters, 17 local police officers, and two Massachusetts State Police officers, representing the following 76 agencies: Agawam Fire, Amesbury Fire, Amherst Fire and Police, Ayer Fire, Belmont Fire, Berlin Fire, Boston Fire, Boxford Fire, Bridgewater Fire, Brockton Fire, Cambridge Fire and Police, Dudley Fire, East Bridgewater Fire, Everett Fire, Framingham Fire, Gardner Fire and Police, Grafton Police, Haverhill Fire, Hudson Fire and Police, Hull Fire, Lawrence Fire, Leominster Police, Lowell Fire, Ludlow Fire, Lynnfield Fire, Marlborough Fire and Police, Mashpee Fire, Massachusetts State Police, Methuen Fire, Newburyport Fire, Newton Fire, Northampton Fire and Police, Norwell Fire and Police, Peabody Fire, Pittsfield Fire, Raynham Fire, Saugus Fire, Shrewsbury Fire, Somerville Police, Springfield Police, Stoneham Fire, Swansea Fire, Taunton Fire, Uxbridge Fire and Police, Wakefield Fire, Waltham Fire, West Springfield Police, Westborough Fire, Weymouth Fire, and Yarmouth Fire.

Career Recruit Firefighting Training

Students receive classroom training in all basic firefighter skills in the 50 day Career Recruit Firefighting Training program. They practice first under non-fire conditions and then during controlled fire conditions. To graduate, students must demonstrate proficiency in life safety, search and rescue, ladder operations, water supply, pump operation, and fire attack. Fire attack operations range from mailbox fires to multiple-floor or multiple-room structural fires. Upon successful completion of the Recruit Program all students have met the standards of National Fire Protection Association 1001 and are certified to

the level of Firefighter I and II, and Hazardous Materials First Responder Operational Level by the Massachusetts Fire Training Council, which is accredited by the National Board on Fire Service Professional Qualifications. Training is held at both the Stow headquarters of DFS and at the new Springfield campus.

Class #259

Members of the Career Recruit Firefighter Class #259 graduated on Friday, December 8, 2017 at the Department of Fire Services. The 39 graduates, four women and 35 men, represent the 22 fire departments of: Arlington, Athol, Auburn, Billerica, Charlton, Concord, Danvers, Duxbury, Falmouth, Gardner, Gloucester, Harwich, Lexington, Nantucket, New Bedford, Newton, Randolph, Revere, Salem, Saugus, Sharon and Truro. Truro Fire Chief Timothy Collins was the guest speaker.

Class #260

Members of the Career Recruit Firefighter Class #260 graduated on Monday, January 22, 2018 at the Department of Fire Services. The 35 graduates, three women and 32 men, represent the 24 fire departments of: Andover, Attleboro, Barnstable, Canton, Cotuit, Fitchburg, Hopkinton, Methuen, Needham, Newton, North Attleboro, Norwood, Plainville, Springfield, Tewksbury, Truro, Wakefield, Walpole, Wellfleet, Westminster, Westport, Whitman, Winchester, and Yarmouth. The guest speaker was retired Clinton Fire Chief John McLaughlin.

Class #261

Members of the Career Recruit Firefighter Class #261 graduated on Monday, February 26, 2018 at the Department of Fire Services. The 37 graduates, all men, represent the 19 fire departments of: Acton, Attleboro, Beverly, Burlington, Cambridge, Dighton, Dracut, Fairhaven, Falmouth, Framingham, Franklin, Lawrence, Lexington, Medfield, Natick, Norton, Plainville, Seekonk, and Stoughton. The guest speaker was Fitchburg Fire Lt. Patrick Roy.

Class #S06

Members of the Career Recruit Firefighter Class #S06 graduated on Thursday, December 7, 2017 at the Department of Fire Services, Springfield campus. The 16 graduates, three women and 13 men, represent the seven fire departments of: Agawam, Amherst, Chicopee, Easthampton, Holyoke, Northampton, and Springfield. The guest speaker was Easthampton Fire Chief David Mottor.

Call/Volunteer Recruit Firefighting Training

The Call/Volunteer Firefighter Recruit Training program is unique in that it delivers a standard recruit training curriculum, meeting national standards, on nights and weekends to accommodate the schedule of firefighters in suburban and rural areas.

Class #68



Class #69



The team concept of fire investigation starts with joint training. When police and fire are trained in the same techniques together, consistency leads to solid origin and cause determinations, and solid criminal cases.

Graduates complete 240 hours of training. Bringing the training closer to the firefighters often means more firefighters can participate. The program uses an online format that has students doing more work outside of class and taking quizzes online. This allows students more time to practice training skills with instructors and to better control their own workloads and time commitments. Upon successful completion of this program, all students have met the standards of National Fire Protection Association 1001.

Class #68

On March 1, 2018 members of the Call/Volunteer Recruit Firefighter Training Class #68 graduated. The 37 graduates, all men, represent the 16 fire departments of: Boxford, Essex, Georgetown, Hamilton, Lynnfield,

Continued on page 20

2018 License Examination Schedule

Fire Safety Division

The Department of Fire Services Fire Safety Division issues licenses, permits and certificates of competency (licenses) to people and companies engaged in fireworks, blasting, explosives, special effects, cannon and mortar firing, commercial cooking exhaust system cleaning and inspection, special hazard systems, portable fire extinguishers, marine fueling facilities and above ground tanks. Register for exams and see detailed information at <https://www.mass.gov/service-details/dfs-licensing>. For questions, contact the Licensing Desk at 978-567-3700 or at dfs.licensing@dfs.state.ma.us.

Boiler and Pressure Vessel Program

The Boiler and Pressure Vessel Program offers monthly license exams for all classes of oiler burner technician, firemen and engineer licenses. Register for exams and see detailed information at <https://www.mass.gov/service-details/boiler-pressure-vessel-program-licensing-exams>. For questions contact the Boiler & Pressure Vessel Program at (978) 567-3780 or at BPV.Exams@MassMail.State.MA.US.

Licensing Status'

To see the licensing status of an individual or company, visit the DFS License Look Up at http://elicense.chs.state.ma.us/DFS_Verification/Search.aspx or go to www.mass.gov and search for DFS licensing.

Examination Schedule	Examination Dates All exams start at 10:00 a.m. on Wednesday	Deadlines for Applications (Fridays)
FSD Exams		
Fire Suppression Commercial Hood Cleaning	May 23, 2018 July 18, 2018	May 4, 2018 June 29, 2018
Cannon/Mortar Fireworks	April 18, 2018 June 20, 2018	March 30, 2018 June 1, 2018
BPV Exams		
Oil burner, fireman & engineer (all classes)	June 27, 2018 July 25, 2018 August 29, 2018 Sept. 26, 2018	May 25, 2018 June 29, 2018 July 27, 2018 August 31, 2018

MFA Graduations, *continued from page 19*

Manchester, Merrimac, Nahant, Newburyport, Pepperell, Rowley, Salisbury, Sherborn, Topsfield, Wenham, and West Newbury. The ceremony took place at the Pentucket Regional High School, West Newbury, Massachusetts.

Class #69

On February 27, 2018 members of the Call/Volunteer Recruit Firefighter Training Class #69 graduated. The 25 graduates, four women and 21 men, represent the 13 fire departments of: Boxford, Essex, Georgetown, Hamilton, Lynnfield, Manchester, Merrimac, Nahant, Newburyport, Pepperell, Rowley, Salisbury, Sherborn, Topsfield, Wenham, and West Newbury.



Does My Building Need a BDA?

Bi-directional amplifier (BDA) has become a buzzword in new construction. With the adoption of the 8th edition of the Massachusetts State Building Code (780 CMR) in 2011, emergency responder radio coverage became a requirement for newly constructed buildings. The inclusion of robust building features and enhanced energy conservation provisions have resulted in non-combustible construction materials, thicker insulation, and low-e glass windows. These building enhancements have insulated buildings from the elements but also made radio transmissions difficult. In many cases, additional measures for emergency responder radio coverage, such as the installation of a bi-directional amplifier, are necessary to meet minimum code provisions. For firefighters responding to an emergency event within a building, communication with the incident command and exterior crews is critical to successful, and safe, fire ground operations.

Many fire departments are being asked, “Does my building need a BDA?” Much to the owner’s chagrin, the response is usually, “It depends”. Many factors and design decisions affect radio coverage in a building. The minimum criteria required in the code is to dispel -9m5 dBm from inside the building to outside, and to receive -95 dBm within the building (780 CMR 916.4.1). Traditionally this was measured by fire department personnel with the standard, “Can you hear me now? Good.” This qualitative testing relies more on the equipment of the fire department and exterior factors, than it does the building construction. The reliable and quantitative testing methods are required by the 9th edition of 780 CMR 916.5.3. A test report is provided to the fire department with signal strength of incoming and outgoing radio transmissions to clearly demonstrate compliance with the code. The testing criteria are outlined in 2013 NFPA 72 and 2015 IFC.

What fire departments want to avoid hearing is, “We didn’t know we needed a BDA and now it’s too expensive to install.” While the requirement to install emergency responder radio coverage is a provision under the jurisdiction of the building code, fire department plan reviews and fire prevention officers should be aware of the provisions and look for indications within the fire protection narrative and on permit plans for the future installation of emergency responder radio equipment. A BDA is required to be tied into the fire alarm control panel to indicate if there is a trouble (loss of power). Since the radio coverage needs to be tested once the building is substantially complete, some owners decide to install conduit and wiring for a system, but will wait until the building is tested



Robust building features and enhanced energy conservation provisions have resulted in non-combustible construction materials, thicker insulation, and low-e glass windows that have made radio transmissions difficult. A bi-directional amplifier may be necessary to meet minimum code provisions in some buildings with these features.

before investing in the head-end unit. While conducting a plan review, the fire department plan reviewer should always include a comment about radio coverage to the building official if a system is not clearly indicated on the original plans.

When a BDA is installed and activated, it utilizes the emergency responder (fire department) frequency. It is the responsibility of the emergency responder (fire department) to attend to those buildings utilizing their signal which is regulated by the FCC. If a BDA is improperly sized, or is activated without testing, the system can interfere with surrounding towns and frequency bands, effectively knocking out transmission. Before a BDA system is activated, even for testing, the building official and fire official must stress the importance of notification to the fire department prior to operation. If there is an issue with radio transmission in a neighboring community, it is much easier to remedy the situation if it is known that a new system was recently brought online. Also, the location of the BDA should be entered into the FCC database.

For additional questions, please contact the Code Compliance help desk at 978-567-3375.



Department of Fire Services
Commonwealth of Massachusetts
978-567-3100

www.mass.gov/dfs



Training News

National Fire Academy Programs at Massachusetts Firefighting Academy

Leadership in Supervision: Frameworks to Success F0648

June 5 & 6 8 a.m. - 5 p.m. Stow, MA

This program provides the supervisor with the knowledge and skills to perform successfully in fire and Emergency Medical Services. The course addresses professionalism, resilience, emotional intelligence, and situational awareness, as well as managing conflict, delegating, mentoring, coaching, empowering, and building collaboration and synergy for professional growth.

Fire Investigation: First Responders F0379

September 4 & 5 8 a.m. - 5 p.m. Stow, MA

This program provides a clear definition of the role of first responders in fire investigation and provides essential knowledge to enable them to recognize the potential of intentionally set fires, preservation and protection of evidence, and proper reporting of information to appropriate officials. By strengthening the partnership between first responders and investigators, the chances for successfully solving arson-related crimes increases. This course includes topics such as fire behavior, critical observations of the first responder, fire causes, scene security, evidence preservation, legal considerations, and documentation of findings.

Senior Fire Officer Forums

A Fire Officer's Guide to Today's Buildings on Fire

May 8 9 a.m. - 1 p.m. Stow, MA

Christopher Naum, Chief of Training, Command Institute

Presenting insights on building construction for today's fire service, the primary objective of this program is to increase awareness and understanding in the fundamentals of building construction, architecture, engineering and design that directly impact firefighting and command operations at

structure fires based on emerging construction systems. Discussion will include emerging trends in mass timber and cross laminate timber (CLT) construction and podium and doughnut construction designs.

From the X-Box to a Box Alarm: Understanding and Leading Today's New Generation of Firefighters

May 29 9 a.m. - 1 p.m. Stow, MA

Tiger Schmittendorf, Deputy Fire Coordinator, Erie County Dept. of Homeland Security & Emergency Services (Ret.)

This presentation uses deep questioning and engaging facilitated conversation supported by text, videos and images that reinforce program objectives: identifying the learning and communications habits of today's firefighters and prospective recruits. The program addresses the challenge of attracting, retaining and connecting with today's firefighters.

To register for the programs above, visit the DFS Learning Management System at: https://hraccess-us.technomedia.com/mfa/?_3x13233S2Z1U6K5b759aa4-c9ba-4c58-b7ca-3ec37accb323

Know Your Smoke: The Dangers of Fire Smoke Exposure Preventing Firefighter Illness, Disease & Death

June 8 8 a.m. - 5 p.m. Stow, MA

June 9 8 a.m. - 5 p.m. Springfield, MA

The program is sponsored by the Fire Smoke Coalition, Inc., and includes the following topics: fire smoke: perceptions, myths and misunderstandings; the process of atmospheric monitoring; ppe exposure: care & maintenance; pre-hospital hcn (hydrogen cyanide) assessment and antidotal treatment; burn practical session focused on atmospheric monitoring follows the lecture. Full PPE & SCBA required. Lunch is provided. OEMS CEU's applied for. To register, email your name, department, email address and location you wish to attend to shawn@firesmoke.org.