All Hands Herald

Massachusetts Department of Fire Services June 2021

New Mobile Extraction Unit®

From AFG Funds

$4.1 Million in Firefighter Safety Equipment Grants

Firefighter Rehabilitation Key to Safety

Cancer-Detection CT Scans for Firefighters

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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.

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Contents

2 New Mobile Extraction Unit® From AFG Funds

DFS, in partnership with RedLine Gear Cleaning has deployed the first ever state-owned Mobile Extraction Unit® (MEU) to manage and clean all personal protective equipment for the MFA.

4 State Awards $4.1 Million in Firefighter Safety Equipment Grants

DFS announced $4.1 million in equipment grants for 298 MA fire departments from a $25 million bond bill filed by the Baker-Polito Administration to support firefighter health and safety over the next five years.

5 Firefighter Rehabilitation Key to Safety

Firefighter rehabilitation is key to ensuring that firefighters can safely return to duty and then go home at the end of a shift. Just as important is that they return to duty for their next shift.

1 From the Fire Marshal
6 Get Ready for Fireworks Season
6 Confiscated Fireworks
7 Cancer-Detection CT Scans for Firefighters
7 Massachusetts Fireworks Fires, 2019 – 2020
8 Courageous Learning Online
9 HazMat Dispatch Centers Moving
10 MSP Bomb Squad Assists Maine State Police with Hostage Situation
11 Special Ops, HazMat and Bomb Squad Demonstrate New Equipment
12 Verifying Professional Licenses
13 Fire & Building Code Reviews
14 Fire Investigation News
19 2021 License Examination Schedule
20 Massachusetts Firefighting Academy Graduations
22 The DFS Virtual Classroom
23 Ignitable Liquid Detection K9 Team
23 Editor's Note
24 New Bailout Prop for Springfield Campus
25 Maritime Exercise in Gloucester Harbor
25 Coronavirus Mitigation at DFS
Back Cover Fire & Life Safety Education Conference in September

From the Fire Marshal

Spring and summer bring hope that the light at the end of the pandemic tunnel is coming. We will soon be able to return to our pre-pandemic lives, if people continue to follow the CDC guidelines and get vaccinated.

This experience forced us to innovate, to first imagine and then create new ways of doing things. Some of those changes have been beneficial and will have a lasting impact on our business models. Before COVID-19, DFS was already making training available online as part of the e-blended learning used in the Call/Volunteer Recruit Firefighter Program.

The Career Recruit program staff keeps adjusting the 10-week matrix. They respond to experience, feedback from students and fire chiefs, and changing occupancy limits. With the May Career Recruit classes we implemented a new "4x1" matrix that puts students on campus four days a week – mostly practicing and mastering new hands-on skills in the drill yard. Students study in the virtual classroom on Fridays where new topics are covered in depth.

The pandemic forced us to harness online learning technology. It has challenged our instructors to retool their skills and our students to learn differently. Online learning will be a major part of how we deliver training in the future. It can help us reach more students in a more flexible way.

I want to thank our staff for their perseverance, flexibility, and innovative thinking. You have all risen to the occasion. I also want to thank our students for working to adapt to the virtual classroom, and all the fire chiefs who supported this effort.

Updating the Fire Code

The Board of Fire Prevention Regulations (BFPR) has been reviewing and updating the State Fire Code. One of the benefits of adopting a model code is the 3-year revision cycle. The Board and its subcommittees are reviewing the National Fire Prevention Association (NFPA) Standard 1 2018 edition, and the current Massachusetts Fire Code. Besides the chapter-by-chapter review, they are focusing on a new chapter that covers energy storage systems. Next, they will review the 2021 edition. Fire service involvement in the subcommittee process is essential. They bring real world code enforcement experience to the process. I encourage fire prevention officers to share their expertise and get involved in this work.

AFG Grant

This spring, DFS took delivery of a Mobile Extraction Unit® (MEU), specially-built for us by Redline Gear Cleaning. This gear laundromat on wheels will rotate between our three campuses and help us clean and dry MFA staff gear more rapidly. We also plan to use the MEU to send recruits home at the end of their 10-weeks of training with a clean set of gear. The MEU can assist local fire departments when unique gear cleaning needs arise due to HazMat exposures or other unusual events as well. The acquisition of the MEU is part of our effort to reduce firefighter exposure to possible carcinogens. The unit was funded by a Federal Emergency Management Agency Assistance to Firefighters Grant (AFG). State fire training academies have only been eligible for AFG funds for several years, and we have been awarded grants every year.

Fire Department Grants

This fiscal year, the Administration and the Legislature supported the fire service with several grant programs. They increased the funding for public education grants for both the Student Awareness of Fire Education (S.A.F.E.) and Senior SAFE Programs to $1.9 million. Two hundred and thirty-nine fire department were awarded public education grants.

The FY21 Firefighter Safety Equipment Grant Program awarded $4 million in grants to 298 fire departments. This program will enable fire departments to buy a variety of equipment to make firefighters' jobs safer. Examples include: protective firefighting gear, thermal imaging cameras, radios, rescue equipment, and gear washers and dryers. The funding is part of a $25 million bond bill filed by the Baker-Polito Administration to support firefighter health and safety over the next five years.

Building Our Campuses

We continue to work on building out the new Bridgewater campus. The design and bid process is underway for a new aerial ladder. You can expect to see other renovations through the summer and fall. On the Springfield campus, we are building a new bailout prop (photo on page 24).

Continued on page 5

New Mobile Extraction Unit® From AFG Funds

The Massachusetts Department of Fire Services in partnership with RedLine Gear Cleaning has deployed the first ever state-owned Mobile Extraction Unit® (MEU) to manage and clean all personal protective equipment for the Massachusetts Firefighting Academy (MFA).

The recently delivered MEU provides improved capability for turnout gear and equipment cleaning for the Massachusetts Firefighting Academy. This unit will reduce exposure resulting from use and handling and improve the department's ability to maintain equipment used daily by our personnel.

The Massachusetts Firefighting Academy (MFA) is the primary training provider for new and veteran firefighters in Massachusetts. It operates three training campuses in the state. As the understanding of occupational cancer in the fire service has advanced in recent years, the MFA has embraced its responsibility to help firefighters reduce their personal cancer risk by:

- integrating the principles of exposure reduction into every program, and
- establishing dedicated cancer-prevention initiatives.

MFA instructors repeat the importance of proper gear cleaning to recruits after each exposure to smoke or flame throughout training, hoping to instill good habits that will last a lifetime. All programs limit the amount of time spent in turnout gear, and gear can be doffed only in the apparatus bay. Gear can never cross the threshold into any academy building. The MFA offers *Taking Action Against Cancer in the Fire Service*, a course which over 7,000 Massachusetts firefighters have taken. The course is often paired with the MFA's Skin Cancer Screening Program (generously offered by Dr. Christine Kannler). Dr. Kannler is a dermatologist whose family experienced the impact of occupational cancer in the fire service. She has screened over 1,700 Massachusetts firefighters for skin cancer and identified over 200 firefighters who required follow-up screening. The MFA also secured funding for full-body CT scans of firefighters at medical facilities and has supported nearly 500 of these scans at no cost. In 2020, the MFA also administered a state-funded grant program that outfitted 140 Massachusetts fire stations with NFPA 1851-compliant extractors for gear cleaning.

Cleaning Turnout Gear

Until now, cleaning turnout gear on a regular basis was a huge challenge on the three MFA campuses. At any given time, the MFA is conducting 8 or 9 firefighter recruit classes and countless other educational programs for veteran firefighters. This means managing over 600 sets of turnout gear for instructional and support staff, in addition to the gear recruits bring to campus. Each campus has one or two extractors, but space limitations have prevented the installation of more machines or drying racks. The extractor capacity at each campus is grossly insufficient for the activity level, and drying the gear outside is terribly inefficient, especially during cold weather. Each time the MFA explored solutions for the issue, the only solution was to construct new buildings on each campus. But that was not financially feasible.

The ultrasonic cleaning unit is designed specifically for PPE. It processes helmets and boots and meets NFPA requirements.

In early 2020, State Fire Marshal Peter Ostroskey first saw a Mobile Extraction Unit® developed by a company called Redline Gear Cleaning. The unit was a turnout gear laundromat on wheels, with two 70-pound extractors, two gear drying cabinets, a tumble dryer, and an ultrasonic cleaning station, inside a 25-foot box truck. The system can wash and dry up to 40 sets of helmets, boots, gloves, jackets, and liners in 12 hours. This was a solution that could solve the gear-cleaning challenge for all three campuses.

When the FY2019 Assistance to Firefighters Grant (AFG) Program application period opened to State Fire Training Academies, MFA staff quickly made the acquisition of an MEU the top priority. DFS was awarded a grant for an MEU and in June of 2021, the agency received the specially designed and built unit, trained staff on it, and began moving it between the campuses to clean gear. Today,

when recruits graduate from the MFA, they return to their departments with a clean set of gear to begin their careers.

Hydrostatic Pressure Testing

The new MEU contains a hydrostatic pressure testing tool. In a typical year, the MFA was spending $10,000 to have a private vendor conduct water barrier testing once on each set of gear. This expensive approach also disrupted operations because it took time for gear to be sent out, tested and sent back. Gear is now tested on-site and returned to service the same day (if it passes the test). Gear that is older or used more frequently can be tested multiple times per year with this valuable tool. This is a significant improvement over annual testing.

Measuring Toxins

The new MEU will also enable MFA to better understand the toxic byproducts created during live-fire training where straw, pallets, and gases are the primary fuel materials. Typical gear cleaning systems empty wastewater from the extractors into a sewer or septic system. The new MEU has 599-gallon clean water and wastewater tanks, which make it possible to sample the water before and after it is used. Now, the MFA will be able to measure the type and amount of toxins that are removed from gear. This data-gathering project has just begun, but the MFA anticipates being able to share useful information with fire academies across the country soon.

Gear Cleaning Support for Unusual Events

The MEU will be used primarily for the MFA. But it can also assist Massachusetts fire departments when unique gear cleaning needs arise due to HazMat exposures or other unusual events. Nearly every Massachusetts fire department has some NFPA 1851-compliant gear cleaning capabilities. But many departments have limited capacities and insufficient resources to dry equipment quickly. That extends the time gear is out of service while it is being cleaned. Departments are working towards the goal of having two sets of gear for every firefighter. But in the meantime, the MEU can arrive on-site and clean 40 sets of gear in a single day to significantly reduce downtime for any department that had a large or long-term event. The MEU can also prevent firefighters from taking their next calls in gear that is either soiled, wet, or damp.

Gratitude for the AFG Program and Redline

The new MEU will have a major impact on the health of Massachusetts firefighters. The cost of the MEU and the financial challenges of COVID-19 mean that without the AFG, it would have been several years before the MFA could invest in an MEU. The MFA is grateful to the AFG program for the funds to purchase the MEU so quickly. The thousands of firefighters who will wear clean and dry gear as they train in the coming years will also be grateful. We are also grateful to Redline for working with us to develop this unique product.

MEU interior photos courtesy of Daniel Kaplan, Cupola Creative.

Helmets ready for the ultrasonic cleaning unit.

Foreground: Inner and outer shell gear extractors decontaminate the shells of PPE without breaking down sensitive materials. Background: Outer shell drying units allow controlled ventilation for careful drying of sensitive items including uniforms, helmets, and boots.

MEU exterior.

State Awards $4.1 Million

in Firefighter Safety Equipment Grants

On April 2, 2021, the Department of Fire Services (DFS) announced approximately $4.1 million of equipment grant awards for 298 Massachusetts fire departments. The funding came from a $25 million bond bill filed by the Baker-Polito Administration to support firefighter health and safety over the next five years. The program aims to ensure that firefighters go home safe after every call, and that they remain healthy throughout their careers and into retirement. All 366 Massachusetts fire departments were eligible to apply for the funding to purchase 114 different types of equipment.

The High Cost of Safety

Recent advances in the understanding of the occupational risks faced by firefighters and the application of modern technology to mitigate them have made today's firefighters safer than their predecessors. However, the advances have come at a significant financial cost. We now know that every firefighter should have two sets of compliant turnout gear. Turnout gear should be laundered regularly, and that cleaning must be in special washing machines. New and better portable radios come out every year, and failure to keep up with the technology can be dangerous.

The Baker-Polito Administration understood that every department struggles to achieve accepted safety best practices in some areas due to the amount and variety of equipment required. So the Administration developed the grant program to support safety needs. The State Legislature supported the program.

The program provided some unique insights into specific challenges for call and volunteer fire departments. Call and volunteer fire departments requested a disproportionate amount of communications equipment, SCBA components, and gear-washing equipment compared to departments with full-time personnel. The needs of career fire departments focused more heavily on thermal imaging cameras, hazardous gas detectors, and water rescue equipment. All types and sizes of departments had a need for additional sets of turnout gear.

This is a 5-year grant program. If a department did not apply this year, they can apply in each of the next four years. The goal of this program is to get critical safety resources to departments. The application process was designed so that call and volunteer departments are not disadvantaged due to a lack of time or resources to apply. Any department should be able to document their safety challenges and complete the application for equipment in one or two hours.

Through this year's program, Massachusetts fire departments will purchase:

- 216 pairs of boots
- 249 bunker coats
- 243 sets of bunker pants
- 86 complete sets of turnout gear
- 210 EMS/extrication coats
- 31 gear drying cabinets
- 445 pairs of gloves
- 141 helmets
- 569 hoods
- 192 SCBA face pieces
- 203 hand lights
- 78 SCBA bottles
- 462 hose and nozzle components
- 37 PPV fans
- 170 portable radios
- 27 mobile radios
- 557 radio accessories (mics, holsters, ear pieces, etc.)
- 185 thermal imaging cameras
- 101 cold water immersion suits
- 13 ice rescue boards
- 68 extrication tools
- 103 hazardous gas detectors

DFS has a grants webpage at www.mass.gov/info-details/grants-for-fire-departments with current information on grant opportunities. State and federal programs are posted when application periods are open. The programs include:

- Federal Assistance to Firefighters Grant (AFG) – funding for equipment, recruitment and retention of personnel).
- Student Awareness of Fire Education (S.A.F.E.)
- Senior SAFE

Bookmark the page and set a reminder for someone in your department to check it every two to three weeks for new opportunities.

Firefighter Rehabilitation Key to Safety

Firefighter rehabilitation is key to ensuring that firefighters can safely return to duty and then go home at the end of a shift. Just as important is that they return to duty for their next shift. Cardiac arrest is one of the top killers of firefighters and heart attacks can happen hours after fighting a fire when they are back at home or in quarters.

June 20–26, 2021 was national Firefighter Stand Down Week and the theme was *Rebuild, Rehab*. While Massachusetts has long been a leader in this area, the week was a great opportunity to review the importance of firefighter rehabilitation and how to access Department of Fire Service (DFS) resources with personnel. Any week is a good time to make sure that firefighters understand the importance of rehab and know about the available resources.

DFS Resources

Local incident commanders can request firefighter rehabilitation resources from the DFS Special Operations Unit. DFS has three Rehab Units that can respond rapidly to all Massachusetts locations. DFS staff operates the Rehab Units but EMS services are provided locally. Fire departments might consider adding the DFS Rehab Unit to run cards in advance of a major incident. DFS has an online guide of the Special Ops resources we can provide local fire departments.

Rehab units are equipped to facilitate proper firefighter/rescuer rehab. They provide heat, air conditioning, fluids, rehab supplies, and medical monitoring equipment to assist the local EMS. The units also have coffee makers and plenty of fluids to rehydrate firefighters. Dry socks, t-shirts and towels are also available. Since the pandemic began, we have used Halosil® foggers to clean the units between uses.

For emergency activation of DFS Special Ops resources call the MEMA dispatch center at 508-820-2000, 24/7.

Roundtable Discussion on Firefighter Rehab

DFS hosted a live roundtable with representatives from the Fire Chiefs' Association of Massachusetts (FCAM), the Professional Fire Fighters of Massachusetts (PFFM) and the Massachusetts Call/Volunteer Firefighter Association (MCVFA) and posted it on the DFS YouTube Channel. These organizations created the consensus protocol for firefighter rehabilitation that is now included in the Office of Emergency Medical Services (OEMS) protocol.

Training

DFS offers an online training entitled: *Rehabilitation for the Fire Service* (2 hours). The program explains the value of effective rehab and the statewide OEMS treatment protocol. As part of 2021 Stand Down Week, all recruit classes received training and discussed firefighter rehabilitation with instructors.

Prevention

Every firefighter should have an annual physical. The first step in addressing occupational cancer or firefighter rehabilitation is always an annual wellness check with a medical professional.

From the Fire Marshal, *continued from page 1*

Fire and Explosion Investigation Unit

I always hate to see trained fire investigators leave the unit when they are promoted. It's a great loss of training, experience, and partnerships. But I am always happy to see them return when they are promoted again. The new commanding officer of the Fire & Explosion Investigation Unit (F&EIU) is Det. Lt. Michael Riley. He was a fire investigator assigned to the Central Team for many years. He has chosen Lt. Eric Desrochers as his executive officer who is also returning to the F&EIU. Before his last promotion out of the unit, he was a key member of the South Team that arrested the serial south shore arsonist Mark Sargent, twice. We continue the trend of putting seasoned fire investigators at the helm of the unit. Welcome back!

Get Ready for Fireworks Season

With the summer fireworks season fast approaching, fire departments are busy making final plans for supervised displays that are safe and conducted in accordance with the State Fire Code. The Fire Safety Division is ready to provide the highest possible level of technical, compliance, and enforcement support during the fireworks season.

Many communities are interested in selecting new fireworks display locations to allow for safer distances between spectators due to the pandemic. If your community wants help determining if a new location meets State Fire Code requirements, code compliance and enforcement officers from the Fire Safety Division are ready to help.

DFS Code Compliance Assistance

Code compliance and enforcement officers are available 24 hours a day. During business hours, call the Fire Safety Division at (978) 567-3375. If you need a code compliance and enforcement officer during a pre-display setup inspection or you have to report an accident, call the Massachusetts Emergency Management Agency at (508) 820-2000. Ask the dispatcher to page a DFS code compliance and enforcement officer.

Natural Barrier Approvals

When necessary, the Fire Safety Division grants natural barrier approvals. Natural barriers are restrictive terrains, bodies of water, or heavily wooded areas that restrict access to a fireworks display area. If you have previously received an approval and nothing has changed in the plans the fireworks shooter submitted (including shell size), you do not need another approval. If you do need a site inspection for approval, call (978) 567-3375, at least 30 days before the proposed display date.

Fireworks Inspection Checklist

A department representative should inspect a display during the setup process during daylight hours in the late afternoon. Use the *Fireworks Inspection Checklist*. This procedure provides the best opportunity to find and correct any compliance issues. Inspection and corrections ensure a safe and successful fireworks display. The *Fireworks Inspection Checklist* is on page 2 of the *Application/ Permit for Supervised Fireworks Display (FP-027)*, and is available on the DFS website at: www.mass.gov/doc/fp-027-applicationpermit-for-supervised-display-of-fireworks/download.

Post Fireworks

The State Fire Code states, "A thorough search of the fireworks display site shall be made by the competent operator immediately after the display and again at first light the following morning to ensure recovery of all unexploded shells. If the competent operator is unavailable due to unforeseen circumstances such as illness or injury, a substitute competent operator, upon approval of the AHJ, shall be permitted conduct the searches." A thorough search shall include, but not be limited to:

1. A search as described above;
2. Completed form prescribed by the State Fire Marshal that indicates the start and stop time of the search; and
3. Acknowledgement by the operator and head of the fire department or his or her designee that they have completed the requirements of this section.

This form is available on the DFS website at: www.mass.gov/doc/fp-027b-post-fireworks-display-checklist/download.

Licensing

For questions about users certificates, certificates of competency, or related licensing issues, contact the Licensing Desk at (978) 567-3700, or by email at dfs.licensing@state.ma.us.

Confiscated Fireworks

M.G.L. c.148, s. 39 requires any law enforcement officer to confiscate illegal fireworks. Local fire and police departments should notify the State Police Bomb Squad about confiscated fireworks. During business hours call 978-567-3310. For 24-hour emergencies or large quantities call your State Police Troop Duty Officer directly or State Police Dispatch at 508-820-2121 and ask to be connected the on-call State Police Bomb Technician.

Cancer-Detection CT Scans for Firefighters

In January 2021, the Department of Fire Services began offering eligible Massachusetts firefighters a free computed tomography scan (CT scan) for cancer detection. The program is paid for by a grant from the state. So far, nearly 500 eligible firefighters have had scans, or been approved to have one.

The Firefighter Cancer Support Network (FCSN) believes that no other state has this kind of early detection program for firefighters. DFS is currently offering three potentially lifesaving programs for early cancer detection:

- the FCSN *Taking Action Against Cancer in the Fire Service* training;
- free skin cancer screenings;
- the CT scan program.

CT Scanner

How to Request a CT Scan

To be eligible for a scan, firefighters must:

- register for the scan in the Learning Management System (LMS);
- be at least 40 years old;
- be a Massachusetts resident working for a Massachusetts municipality as a firefighter for 10+ years;
- have taken one prerequisite (skin cancer screening or *Taking Action Against Cancer in the Fire Service* training);
- have a primary care physician; and
- sign a waiver.

Firefighters may add a calcium score reading at the time of the CT scan. This option is not paid for by the program. Individuals must pay for this themselves.

For questions about the CT scan and all of our cancer programs, email DFS.CancerScreening@mass.gov.

Massachusetts Fireworks Fires, 2019 – 2020

Fireworks fires increased dramatically in Massachusetts in 2020. They were up 186% from 2019. There were 43 fireworks fires in 2019 and 123 in 2020.

Fires Caused by Fireworks

In the past decade (2011-2020), 941 major fire and explosion incidents involving illegal fireworks were reported to the Massachusetts Fire Incident Reporting System (MFIRS). The incidents caused 12 civilian injuries, 42 fire service injuries, and an estimated dollar loss of $2.1 million. This is high considering that most fireworks fires are outdoor brush fires.

Burns and Injuries Caused by Fireworks

In the past decade (2011-2020), 32 people were treated at Massachusetts emergency rooms for severe burn injuries from fireworks (burns covering 5% of more of the body) according to the Massachusetts Burn Injury Reporting System (MBIRS).

Now is a good time to remind the public to be smart and leave fireworks to the professionals.

Resident Complaints Increased in 2020

- Resident complaints about fireworks to the Boston Police Department increased 1,319% from 2019 to 2020. There were 1,504 complaints in 2019 and 21,346 in 2020.
- In 2020, the Springfield Police Department received 3,504 calls for fireworks. The peak was between May 1 and July 31 when they received 3,345 calls.
- Fireworks complaints to the Lawrence Police Department increased 409% from 2019 to 2020. There were 159 complaints in 2019 and 810 in 2020. Between May 1 and August 31, fireworks complaints increased by 420%. There were 148 complaints in 2019 and 769 in 2020.
- Resident complaints about fireworks to the Brockton Police Department increased 611% from 2019 to 2020. There were 209 complaints in 2019 and 1,486 in 2020.

Courageous Learning Online

Training and education empowers firefighters to be safer and more effective at their jobs. Continuous training opportunities are part of what keeps the fire service effective. The Massachusetts Firefighting Academy (MFA) knew that COVID-19 could not stop their critical training work, but had to find ways to do that training safely. Virtual learning helped the MFA overcome the many academic constraints imposed by the pandemic and continue to train firefighters.

The MFA embraced the virtual education challenge, but realized that a fast and drastic update of instructional materials and teaching techniques was needed. Our instructional materials were created for in-person classes. And, our instructors have spent years learning how to teach students in person. The question before the instructional team was: how can we improve the learning experience for students by combining the benefits of traditional classroom learning with the benefits of virtual learning?

The MFA has supported instructors in the transition by:

1. redesigning instructional materials,
2. improving and supporting instructor skills, and
3. reconfiguring how we train instructors.

The new MFA curriculum development specialist, Sara Pragluski Walsh, joined the MFA in the middle of the pandemic and has been a leader for the team adapting courses to the virtual classroom (VC). She had never met her colleagues in person and was learning about our courses for the first time.

Redesign Instructional Materials

To re-launch training as quickly as possible, a team led by Paul Betti, Josh Shanley and Christina Mitchell worked with instructors to format and convert their presentations for Adobe Connect software. The work started with the Career Recruit Program then expanded to other classes. For some programs, the team brain swarmed the best next steps to convert programs to the virtual classroom.

Improve and Support Instructor Skills

One of the difficulties for instructors in a VC is not being able to "read" a class the way they can in a physical classroom. Teaching strategies are also more difficult, or at least very different, in a VC. The team realized that instructors needed support to learn some new techniques.

The curriculum development specialist worked closely with the Career Recruit program to create a professional development course for instructors to teach skills for the virtual classroom. She also worked with instructors, coaching them in the VC as they delivered

Recruit Classes 293, BW11, and S23 in a virtual training with instructor Michael Boucher.

material. From this work, ideas surfaced on how to better train instructors.

Next, the MFA prepared an instructional video that presented many "tricks of the trade" for managing virtual teaching. The video demonstrated skills using the MFA curriculum so that instructors could see their materials in action. The video presents a wide range of teaching tools. Instructors were encouraged to try a new skill in each class they lead and to re-watch the video as needed.

What are these virtual teaching strategies? That depends on who you are and how you engage in learning. Instructors need to reach all types of learners.

Strategies for Instructors

Instructors need to mimic the live classroom experience to the greatest extent possible. Making the VC interactive and removing technology distractors are two of the most important skills to master.

Create interactive experiences such as:

- Group discussions;
- Breakout room activities;
- Reimagining manipulatives;
- Facilitating student role-play;
- Enabling student sharing;
- During lectures, stop every few slides to engage students. Cold-call, ask agree/disagree questions, and expand on discussion points.

Reduce technology barriers by:

- Using pointers and drawing to focus students on the correct part of the screen;
- Using props to showcase the lesson;
- Posting a timer during breaks so there is a visual clue for when class resumes;
- Using a systematic approach to retrieve instructional materials during class. You lose instructional time and students' attention during disruptions.

The question before the instructional team was: how can we improve the learning experience for students by combining the benefits of traditional classroom learning with the benefits of virtual learning?

Use Team Teaching

Instructors can share the VC workload with a peer. Consider having a peer monitor the chat and "parking lot" chats, set up slides, add additional engagement questions and prompts, and monitor engagement indicators in each class.

Create a Safe Learning Environment

Aim to recreate the safe learning environment of a classroom. Make it clear that questions are welcomed and that students can contact you privately with questions and concerns.

Strategies for Students

All students need the right tools for virtual learning. The most important tool is reliable internet access to a compatible device. Do not use a cell phone. Students need to be active and effective participants in virtual learning. Students should:

- Mute/unmute, raise hand and agree/disagree quickly;
- Add to discussions and ask questions;
- Take notes to follow the curriculum closely;
- Use supporting materials;
- Show respect to others adapting to virtual learning.
- Offer positive support to instructors and students.

Reconfiguring Instructor Training

Our Instructor I team is re-configuring their curriculum under the leadership of Alanna Malatos and Brian Beaulieu. The team has embraced the challenge to teach new instructional skills for the VC. Team members model the new skills while they develop and deliver virtual Instructor I trainings.

This work is benefiting other programs because many instructors teach in more than one program. MFA instructors are reaching more learners with each VC presentation. The better the materials and the instruction, the greater the impact.

Instructors, coordinators, curriculum developers, and support staff have all embraced the challenge of improving the learning experience for firefighters using virtual classrooms. The pandemic required the use of virtual learning, but the MFA teams have a vision of the role it can play in the post-pandemic world. Embracing and quickly learning to be effective virtual instructors has taken determination and courage, the kind of courage we have come to expect from people who run into burning buildings for a living.

As an academic facility, we continue to improve our instructional practices. Great instruction has a positive impact on the fire and life safety of Massachusetts residents. Stay safe and keep learning!

Sara J. Pragluski Walsh, Ed.D. is the new instructional design & curriculum development specialist at the Massachusetts Fire Academy (MFA). She has 18 years of educational experience, research, theory and successful practice.

HazMat Dispatch Centers Moving

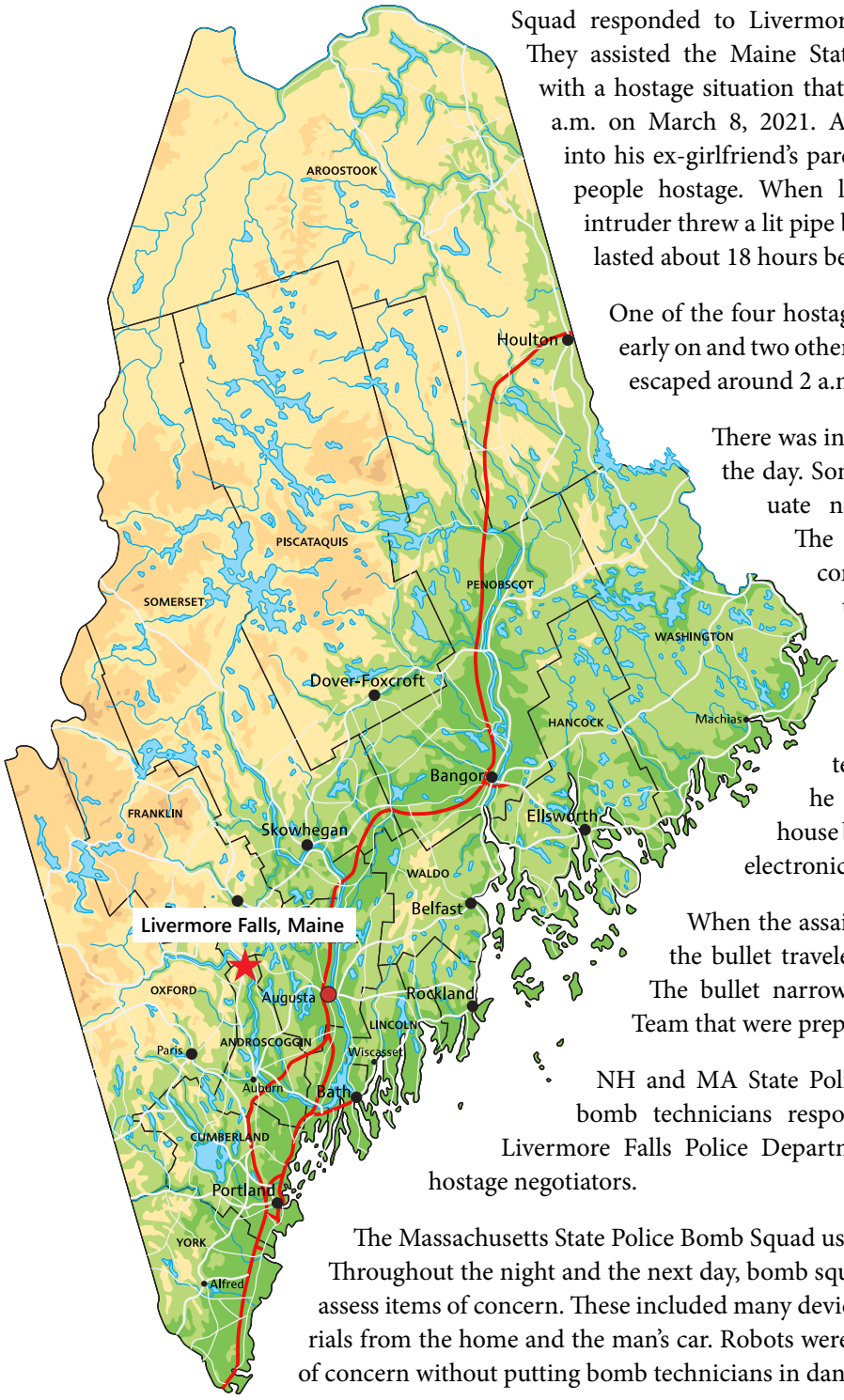
Call Center Number Stays the Same: 877-385-0822

The Hazardous Materials Emergency Response Division (HazMat) will consolidate their two dispatch centers in Amherst and Holbrook to one control center at the Massachusetts Emergency Management Agency (MEMA) in Framingham. With Special Operations and HazMat now in one division, it makes good operational sense to have one dispatch location for both. The transition to a single dispatch center will take place on July 1, 2021. The call center phone number will remain the same at 877-385-0822 for HazMat team activation requests. The Department of Fire Services thanks Steve Hooke and Mike Curtin for their years of dedicated service as directors of the Holbrook and Amherst dispatch locations.

MSP Bomb Squad Assists Maine State Police

with Hostage Situation

In March, the Massachusetts State Police Bomb Squad responded to Livermore Falls, Maine. They assisted the Maine State Police (MESP) with a hostage situation that began around 5:30 a.m. on March 8, 2021. An armed man broke into his ex-girlfriend's parents' home, taking four people hostage. When local police arrived, the intruder threw a lit pipe bomb at them. The standoff lasted about 18 hours before the man took his own life.



One of the four hostages was able to escape to a neighbor's house early on and two others escaped later in the day. The fourth hostage escaped around 2 a.m. after the man took his own life.

There was intermittent contact with the man throughout the day. Some of his statements led authorities to evacuate neighbors, local schools and a Walmart. The escaped hostages reported remote-controlled improvised explosive devices (IEDs) throughout the house. The man claimed he had a "dead-man" switch.

While the man was putting an IED on the back door, Maine State Police shot and temporarily incapacitated him. Police believe he tried to detonate some of his IEDs in the house before shooting himself. NH State Police used electronic tactics to prevent detonation of the devices.

When the assailant fired a fatal round into his upper body, the bullet traveled through him and out the front window. The bullet narrowly missed members of the MESP Assault Team that were preparing to enter the house.

NH and MA State Police bomb squads and FBI field agents and bomb technicians responded to this incident. They assisted the Livermore Falls Police Department and MESP SWAT, bomb squad and hostage negotiators.

The Massachusetts State Police Bomb Squad used robots to confirm that the man was dead. Throughout the night and the next day, bomb squad members from all three states worked to assess items of concern. These included many devices, and suitcases full of bomb making materials from the home and the man's car. Robots were essential in identifying and assessing items of concern without putting bomb technicians in danger.

The Massachusetts State Police Bomb Squad returned to Massachusetts on March 10, after two days of intensive work.

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Special Ops, HazMat and Bomb Squad

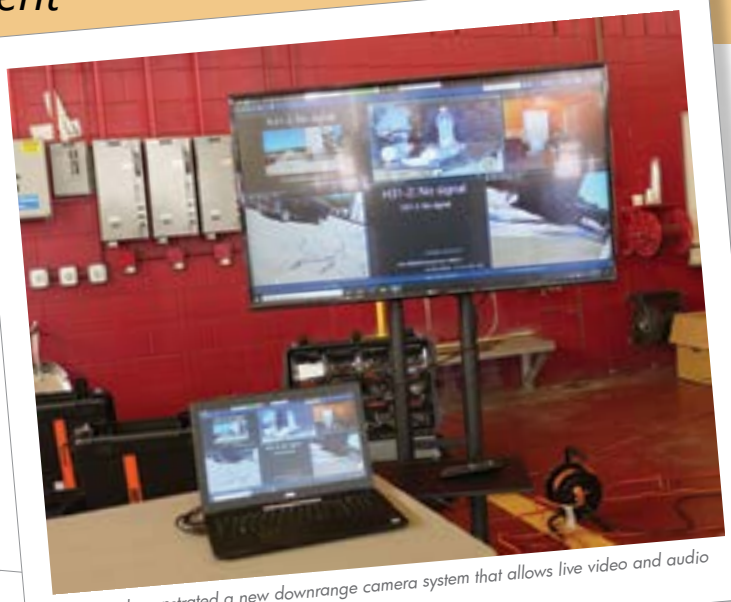
Demonstrate New Equipment

On March 30, 2021, the State Police Bomb Squad and the Hazardous Materials and Special Operations division held a demonstration at the DFS Stow campus of recently acquired technology. Leaders from the Executive Office of Public Safety and Security (EOPSS), the Massachusetts State Police, and the Department of Fire Services attended along with EOPSS Office of Grants and Research (OGR) staff. Nearly all of the equipment demonstrated was purchased through grant funding.

The Bomb Squad presented robots that assist personnel in emergency situations. The robots check packages and enter buildings to secure scenes, prior to people entering a building or approaching a package.

The Hazardous Materials staff demonstrated down-range video cameras that allow HazMat techs to see a scene before putting people in harm's way.

Special Operations demonstrated new Halosil® foggers they use to sanitize Rehab Units after each use. The technology sanitizes with a disinfectant mist that works itself into every little corner of a vehicle. This ensures that the vehicle is ready for the next emergency call.



HazMat demonstrated a new downrange camera system that allows live video and audio transmission from a hot zone to a safe area.

Special Ops demonstrated a new Halosil® fogger that sanitizes Rehab Units and other vehicles between uses.

The Bomb Squad demonstrated robots that check packages and enter buildings to secure scenes, before people enter or approach.

Robot lifting a backpack.

Verifying Professional Licenses

Now more than ever, it is critical for authorities having jurisdiction (AHJs) to be vigilant about the use (or misuse) of professional licenses. Advances in technology have made the use of electronic stamps and signatures common. Although there are many benefits to the use of electronic stamping and electronic plans submissions, there are also many challenges that arise from one-click information sharing. Although misuse of professional licenses is not associated only with electronic stamps, they make fraudulent stamp use easier than ever.

Misuse of Professional Credentials

There are several ways in which professional credentials are being misused. These include using a suspended or expired license, using someone else's license (with or without the license-holder's knowledge), and using a dead person's license. Each of these misuses should be reported to the appropriate licensing authority for investigation and remedial action.

How to Identify a Problem

At the beginning of a project, we recommend that AHJs (fire or building department, or both) check the status of all professional licenses for everyone responsible for any aspect of the project. This may include architects, engineers, and contractors.

Now more than ever, it is critical for AHJs to be vigilant about the use and misuse of professional licenses because electronic stamps and signatures can make misuse easier than ever before.

Architects, engineers, electricians, and fire alarm contractors are all licensed by the Division of Professional Licensure. To check the status of these professional licenses, visit: https://www.mass.gov/how-to/check-a-professional-license.

To check a sprinkler contractor's license, use this link: https://madpl.mylicense.com/Verification/.

Note: when you type in a sprinkler contractor's license number, you must type "SC-" before the number, or you won't get any results.

For other industries regulated by the Department of Fire Services including explosives, fire suppression, hood cleaning, pyrotechnics, and cannons, check licenses and certifications here: http://elicense.chs.state.ma.us/Verification/.

Real-Life Examples

Problems we have discovered in recent years include:

- During the plan review process, AHJs found that two engineers on a project had expired licenses. Using expired credentials is a problem on its own, but this was unusual because two professionals on a single project had expired licenses. An internet search for the license-holder's names found that both were deceased. This was reported to the Board of Professional Engineers and Land Surveyors. Their investigation found that both engineers were deceased and that another individual had been fraudulently using their stamps for years.
- An observant fire department plan reviewer noticed that an architect's signature on the architectural plans looked completely different from the same signature on the sprinkler plans for the project. A call with the architect revealed that he did not know that his stamp was on the sprinkler plans. It seems that the sprinkler contractor took the architect's electronic stamp without their consent, used it on the sprinkler plans, then signed the architect's name.
- An engineer found that many unauthorized contractors were affixing his stamp to plans he did not review. He sent many emails to authorities notifying them not to accept his 'stamped' plans unless his company worked on a project. But the fraud continued. He finally had to change his name on his stamp to stop the persistent fraudulent use.

Continued on next page

Fire & Building Code Reviews

Review of NFPA 1, 2018 Edition is Complete

The Board of Fire Prevention Regulations (BFPR) and its code committees have wrapped up their review of the NFPA 1, 2018 edition. Each of the six BFPR code committees are responsible for reviewing a certain number of chapters and reporting back to the full board with recommendations. The review of the 2018 edition leads directly into a review of the 2021 edition of NFPA 1 in order to promulgate an updated 527 CMR 1.00 Massachusetts Comprehensive Fire Safety Code. We expect the new code to be promulgated and available for use early in 2022. We don't anticipate many major changes to the code. Incorporating new standards such as NFPA 855 – Standard for the Installation of Stationary Energy Storage Systems and updates to other adopted standards, will drive many of the changes. Monthly BFPR meetings, code committees and working group meetings are all open to the public. They are being held remotely, making it easy for interested officials to attend. Visit www.mass.gov/service-details/board-of-fire-prevention-regulations-bfpr for information and links to agendas and meetings.

State Building Code Updates

The Board of Building Regulations and Standards (BBRS) is reviewing the 2021 International Code Council model codes including: the International Building Code (IBC), the International Existing Building Code (IEBC), and the International Residential Code (IRC). These reviews are for incorporation into the 10th edition of 780 CMR, the Massachusetts State Building Code. BBRS anticipates the completion of their code review and a final draft of the building code in early fall 2021. The anticipated publication date is early 2023.

We continue to advocate to maintain the minimum fire and life safety provisions included in the base model codes and previous editions of the Massachusetts State Building Code. Monthly BBRS meetings are open to the public. They are being held remotely. Information and links to agendas and meetings are available through the Office of Public Safety and Inspection website at: www.mass.gov/orgs/board-of-building-regulation-and-standards.

There are many construction techniques that the model International Residential Code allows ONLY in combination with fire sprinklers. In the past the BBRS has adopted these provisions but deleted the fire sprinkler requirement. In addition, the IRC requires fire sprinklers in newly built one- and two-family homes but the BBRS has expressly deleted this from the Massachusetts State Building Code. A 2021 fatal fire in Natick was built under these conditions. If that provision of the model code had not been deleted, the home would have been built with fire sprinklers. Perhaps the outcome would have been different.

Verifying Professional Licenses, *continued from previous page*

In many cases, plan reviewers checking sprinkler contractors' licenses found that the license was registered with a different company than the one they are submitting plans for. In Massachusetts, a sprinkler contractor's license can only be registered with one company at a time. In one case this fraud caused a sprinkler system submittal to be denied. In another case, the installation was shut down by a state engineering inspector until the contractor produced a license for the company he was working for.

How to Report a Problem

If you find potential licensing issues or misuse of credentials, report your concerns to the appropriate licensing authority immediately so they can investigate. In some cases, you are required by law to report to the licensing authority. We also strongly recommend that you report your findings to our engineers so we can keep track of the issues.

For concerns, questions, and information contact the Division of Fire Safety's fire protection engineers. For communities north of the Massachusetts Turnpike, contact Kristen McDonough at 978-567-3376 or kristen.mcdonough@mass.gov. For communities south of, or on the Massachusetts Turnpike, contact Jake Nunnemacher at 978-273-7366 or jacob.nunnemacher@mass.gov.

Lowell Fires

2021 has been a tough year for the City of Lowell. There have been four fatal fires. Three were intentionally set and the fourth is undetermined.

Lowell Fatal Fire Undetermined

On March 7, 2021 a man was rescued from a fire at his 114 Acropolis Road home. The fire started on the living room couch. Investigators wanted to interview the man in order to make a final cause determination, but he succumbed to his injuries before that could happen.

Homeless Man Charged in Fatal Outdoor Fire

On April 15, 2021, Lowell firefighters responded to a fire in a construction storage yard at 82 Pevey Street. They found a man on fire. He was taken to the local hospital where he died from his injuries.

Two men had lit a fire in a corner of the yard. One poured vodka onto the fire which caused it to grow out of control. He walked away from the fire and made no attempt to seek help for his companion or to report the fire.

Eugene Newton was arrested that evening and charged with assault and battery with a dangerous weapon causing bodily injury. He was arraigned on April 16, 2021 in Lowell District Court and held without bail pending a dangerousness hearing.

The fire was jointly investigated by the Lowell Fire and Police Departments and State Police assigned to both the Office of the State Fire Marshal and the Office of the Middlesex District Attorney's Office.

Domestic Violence by Fire

On March 31, 2021, a Lowell man poured gasoline on his wife while she was in the bathtub and set her on fire. She suffered second degree burns to 90% of her body and died nearly a month later on April 28. The man was charged with assault and battery with a deadly weapon causing serious bodily injury and held without bail. In court, prosecutors said he had a history of abuse that included punching and burning his wife with an iron. Domestic violence by fire is more common than people realize.

3 Charged with Intentionally Setting Fatal Fire in Lowell

Julian Boykins, 20 and Alexander Gaye, 16 of Lowell and Tanya Karadanis, 19 of Dracut, were charged in connection with intentionally setting fire to 98 Westford Street on February 10, 2021. The fire killed third-floor resident Em Chak, and injured three other tenants, two Lowell firefighters and one police officer. The fire also displaced more than 50 people.

Julian Boykins was charged with murder, arson of a dwelling, three counts of armed assault to murder, injury to a firefighter, intimidation of a witness and conspiracy.

Alexander Gaye was charged with murder, arson of a dwelling, three counts of armed assault to murder, injury to a firefighter and intimidation of a witness.

Tanya Karadanis was charged with evidence tampering and conspiracy.

Shortly after 3 a.m. on February 10, 2021, Lowell Police and Fire responded to 98 Westford Street for a 3-alarm fire that extended to two neighboring structures. Investigators determined that the fire was likely intentionally set by the application of an open flame to available combustibles. Surveillance video recorded the two men at the scene just before the fire started and leaving together in a car.

The fire was jointly investigated by the Lowell Fire and Police Departments and State Police assigned to both the Office of the State Fire Marshal and the Office of the Middlesex District Attorney.

Springfield Arsonist Returned to Prison After Setting a Fire on Probation

In 2019, while on probation for an arson charge, Jeremy Morin set fire to a commercial store front at 268 Bridge Street in downtown Springfield. He received an 8-10 year sentence with an additional 2 years of probation on this Violation of Probation charge (on and after). He is not eligible for parole and will serve 10 years.

The Springfield Arson and Bomb Squad and private security were part of the investigation team.

Dalton Arsonist Pleads Guilty

On April 23, 2021, Lonnie Durfee was sentenced to one year in jail for setting personal property on fire in Dalton. This is the maximum sentenced allowed by law. On October 6, 2020, Durfee set fire to 19 wrapped bales of hay at Holiday Brook Farm. The bales had the names Biden and Harris on them and urged people to vote for the Democratic ticket in the Presidential Election. Durfee, a Trump supporter, made comments at a local bar about how angry the display made him and that he intended to burn it down. Then he went to a local gas station, bought gasoline, and set the fire.

The hay bales were intended to feed livestock on the farm over the winter. Fortunately, farm workers were nearby and able to save some of the hay. Durfee will get credit for time served.

Brockton Man Charged in 4 Arsons

Between October 4-8, 2020, three separate motor vehicle fires were reported in Brockton near each other. Evidence showed arson in each case and placed Obieze Bobby Uchendu, 38, at the scene of all three fires. Unchendu was arrested on October 15, 2020. The fourth fire was a house fire at 301 West Chestnut set late at night on October 12, 2020. It burned itself out and the owner did not discover the damage until the next morning.

On January 22, 2021, Uchendu was arraigned in Brockton Superior Court and charged with four counts of arson.

The investigation was jointly conducted by members of the Brockton Fire Department and Massachusetts State Police assigned to both the Office of State Fire Marshal and the Plymouth District Attorney's Office.

Springfield Church Arsonist Faces Federal Charges

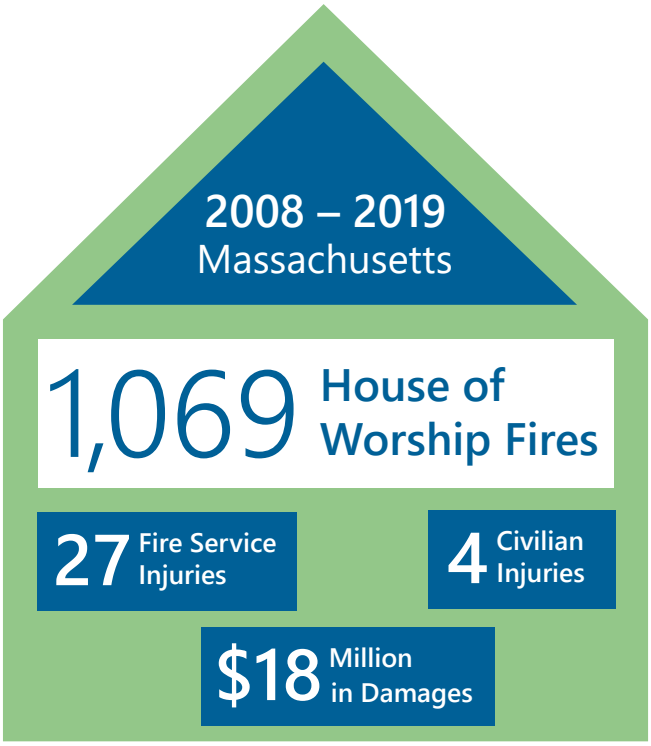
On April 15, 2021, the U.S. Attorney's Office filed a complaint against Dushko Vulchev, of Houlton, Maine, for setting the December 28, 2020 fire at the Martin Luther King Presbyterian Church in Springfield. Local officials waited to announce the official cause in order to protect the federal investigation.

Investigators determined that the December 28, 2020 fire started on the outside of the basement-level kitchen door of the church at 14 Concord Terrace in Springfield. It burned through the door and spread into the building. The investigation team painstakingly eliminated accidental causes, including electrical, and were able to conclude that an open flame to common combustibles was used to intentionally set the fire.

Dushko Vulchev was arrested and charged with several counts of malicious damage and three counts of attempted arson. The first attempt to burn the church was on December 13, followed by two attempts on December 15, 2020. He was arrested on January 1, 2020 by Pittsfield Police and arraigned in Pittsfield District Court.

State Fire Marshal Ostroskey said, "Arson against a house of worship is a horrible crime and our country has a terrible history of arson against Black churches. I want to commend the investigation team for a thorough and methodical investigation into the origin and cause, and for building a solid criminal case. I thank the U.S. Attorney for bringing these charges to hold this man accountable for his crime."

The fire investigation team included members of the Springfield Arson and Bomb Squad, Springfield Police detectives, State Police assigned to the Office of the State Fire Marshal, agents from the Federal Bureau of Investigation (FBI) and the federal Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF). A state electrical investigator provided assistance.



Arrest Made for Fire at Haffner's Service Station

Freedery Ledesma-Sosa, age 20, of Lawrence, was arrested for setting a fire on a gas pump on February 1, 2021. The fire occurred at the Haffner's service station at 262 Lawrence Street in Lawrence.

Ledesma-Sosa was arrested February 3, 2021 and held overnight at the Lawrence Police Department before his arraignment at Lawrence District Court on one charge of burning personal property and one count of malicious destruction.

Acting Fire Chief Wilson said, "Fortunately, the fire self-extinguished quickly and did not set off the fire suppression system. A fire in a gas station has the potential to be dangerous. I want to commend the investigation team for quickly locating the person responsible for this fire."

Lawrence police detectives, fire department investigators and State Police assigned to the Office of the State Fire Marshal jointly investigated this fire. The case will be prosecuted by the Essex District Attorney's Office.

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Smoking Fires

Smoking Materials Dropped from Window Caused Fatal New Bedford Fire – Residents of Sprinklered Building Escaped; Deaths Occurred in Unsprinklered Building

The improper disposal of smoking materials caused a deadly April 19, 2021 fire on Acushnet Avenue, New Bedford. The Office of Bristol District Attorney Thomas Quinn III identified two victims: Tomas Gomez-Delacruz, 49, and Juan Macario-Mejia, 40. One firefighter suffered minor injuries. Forty people were displaced from two buildings. Commercial tenants on the first floors of both buildings were also displaced.

The fire started in the alleyway between 1279 and 1283 Acushnet Avenue. Smoking materials dropped from an upper floor ignited trash and debris next to a dumpster. The fire department was notified of a fire at 1283 Acushnet Avenue by the fire alarm monitoring company at 12:15 a.m. The multi-unit apartment building had fire sprinklers that enabled everyone to escape safely. The two victims were found in 1279 Acushnet Avenue, a 4-story building with commercial space on the first floor and two apartments on each of the second, third and fourth floors. The building had no sprinklers and no central alarm system. Many of the smoke alarms appeared disabled and were clearly more than ten years old. Items stored in the rear stairwell blocked that escape route. This fire clearly demonstrates that fire sprinklers buy time, and time buys life. The deaths occurred in the non-sprinklered building and everyone in the sprinklered building was able to escape safely.

The fire was jointly investigated by members of the New Bedford Fire Department, New Bedford Police detectives, and State Police assigned to both the Office of the Bristol District Attorney and the Office of the State Fire Marshal. The Department of Fire Services Code Compliance Unit and additional State Police resources provided assistance.

Fire sprinklers in one building enabled everyone to escape safely. Two victims were found in a second building that had no sprinklers and no central alarm system. Fire sprinklers buy time, and time buys life.

Smoking Cause of 5-Alarm Lawrence Fire

The cause of the April 7, 2021 fire on Bennington and Saratoga Streets in Lawrence was the improper disposal of smoking materials. The fire originated in a carport attached to the back of 14 Saratoga Street. The exterior fire spread quickly to the building, then to 12 Saratoga Street and 19 Bennington Street before firefighters arrived. Three buildings suffered exterior damage to the vinyl siding but no interior damage: 16 Saratoga Street, which suffered heavy exterior damage, 21 Bennington Street and 23 Bennington Street. A car and a motorcycle were also destroyed. Damages are estimated at more than $1 million. There were no fire sprinklers in these buildings.

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

Improper Disposal of Smoking Materials Cause of Haverhill Fire

The cause of the March 22, 2021 fire at 38 Jackson Street was the improper disposal of smoking materials. The 4-unit home is a total loss.

The fire started on the roof of the house that extended out below the third floor. Investigators believe that a smoker tossed cigarettes out a third floor window igniting the second floor roof, or debris in the gutter, or in a gap between the gutter and the exterior of the building.

Members of the Haverhill Fire Department, Haverhill Police detectives and State Police assigned to the Office of the State Fire Marshal jointly investigated this fire.

Electrical Fires

Andover House Fire Electrical

The cause of the March 24, 2021 fire at 14 Sunset Rock Road in Andover was electrical. It originated in the attic where there were two electrical circuits. One powered electricity inside the house and one powered an extension cord that connected to a roof heating system to prevent ice dams. Investigators determined the fire was accidental and a result of an unspecified electrical event.

Roof heating systems are safe when used properly but should not be left on continuously. Turn them on only when needed, then shut them off.

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

Blackstone Fatal Fire was Electrical

The cause of the January 30, 2021 fire at 16 Auclair Street was electrical. The Worcester County District Attorney's Office identified the victim as Teagan Lafayette, 30.

The house was a converted one-family home with an apartment on the second floor where the victim lived. His parents lived on the first floor. The fire started in the second floor living room at a power strip that failed. The level of

destruction made it impossible to determine if all or some of the electrical appliances in the area were plugged in and running. Investigators found two space heaters, a television, an Xbox and other electrical appliances nearby the power strip.

Members of the Blackstone Fire Department, Blackstone Police detectives, and State Police assigned to both the Office of the State Fire Marshal and to the Office of the Worcester District Attorney jointly investigated the fire. Other State Police units and the Department of Fire Services Code Enforcement Unit provided assistance.

Lawrence Rectory Fire Electrical; Church Saved

The cause of the fire at the Corpus Christi Parish Rectory was electrical. The 4-alarm fire broke out shortly before 6 p.m. on February 22, 2021 at 35 Essex Street in Lawrence. One pastor escaped safely. Damages are estimated at $1.5 million. Investigators determined that the fire started in a void space in the first floor ceiling. The only heat source was an electrical cable. The church was saved.

Members of the Lawrence Fire Department, Lawrence Police detectives, and State Police assigned to the Office of the State Fire Marshal jointly investigated the fire.

Fire officials recommend having a licensed electrician review your home's electrical system every ten years. Small upgrades and safety checks can prevent larger problems.

Woodstove Pipe Failure Cause of Lancaster Fire

The February 18, 2021 fire at 26 Runaway Brook Road in Lancaster was the failure of the woodstove pipe. The house is a total loss. There were two minor firefighter injuries.

The failure of the stovepipe connected to the woodstove allowed heat and gases to escape into the pipe chase and ignite the structural members.

The Lancaster Fire and Police Departments and State Police assigned to the Office of the State Fire Marshal jointly investigated the fire. The Lancaster Building Department provided assistance and is investigating whether there was a permit to install the woodstove and if the house was occupied prior to receiving the occupancy permit.

Space Heater Cause of Holliston Fatal Fire

A space heater was the cause of the January 18, 2021 fire at 623 Winter Street in Holliston. The fire in the one-family home was reported at about 11:40 p.m. Responding firefighters rescued and resuscitated Ronda Levine, age 77, who had initially escaped but re-entered the smoke-filled home in an unsuccessful attempt to rescue 15-20 dogs. She and her husband were taken to a local hospital where she later succumbed to her injuries.

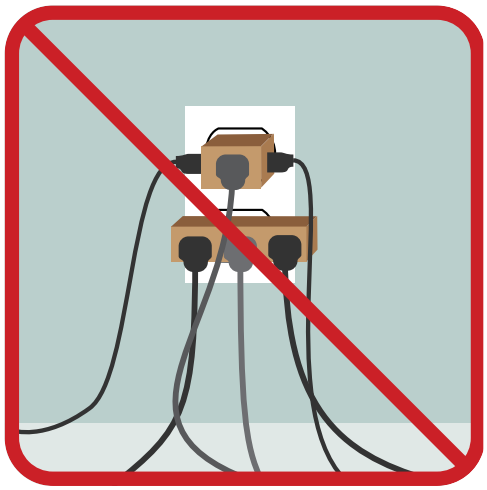
Electrical Safety Tips

Every year, people die in home electrical fires. Protect your home from electrical fires.

- Do not overload outlets.
- Plug heat generating appliances and air conditioners directly into an outlet, not into a power strip or extension cord.
- Don't put electrical cords underneath rugs or pinched behind furniture
- Charge laptops and phones only on hard surfaces, not on beds or sofas.
- Have a licensed electrician review your home's electrical system every ten years. Small upgrades and safety checks can prevent larger problems.
- Consider installing tamper resistant (TR) outlets in homes with small children.

For more information about protecting your home from electrical fires visit www.mass.gov/service-details/electrical-fire-safety.

DFS also has a flyer on electrical safety in English and Spanish. You can download it from our Electrical Safety webpage (link above).



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Investigators determined that a space heater in a first floor storage room started the fire. Whether the space heater was too close to something that caught fire, failed, or overloaded the electrical system cannot be determined. The only heat in the home was from multiple electric space heaters used throughout the house. The furnace was not working. There were no working smoke or carbon monoxide alarms.

Members of the Holliston Fire and Police Departments and State Police assigned to both the Office of the State Fire Marshal and the Office of the Middlesex District Attorney jointly investigated this fire. Other State Police units and the Code Compliance Unit of the Department of Fire Services provided assistance.

Spontaneous Combustion of Oily Rags Caused Lexington Fire

The January 29, 2021 fire at 90 Maple Street in Lexington was caused by the improper disposal of oily rags. Two police officers notified the residents that their home was on fire and helped them escape safely. Damages to the home are estimated to be at least $500,000. Six firefighters had minor injuries.

The fire started in a dumpster against the outside of the garage. The dumpster contained oil-soaked rags, empty linseed oil cans, wood, paper, cardboard, and other trash. The balled up oily rags spontaneously combusted starting the fire. Oil-soaked rags can generate their own heat and start a fire, especially when mixed with other items that can easily ignite.

The fire was jointly investigated by the Lexington Fire and Police Departments and State Police assigned to the Office of the State Fire Marshal.

Failure to Maintain Sprinkler and Alarm Systems at Jacob's Pillow Led to Loss of Theater

After an extensive investigation, the cause of the November 17, 2020 fire at the Jacob's Pillow performance venue is officially undetermined. The 6:50 a.m. fire destroyed the smaller of two performance buildings, the Doris Duke Theatre. Damage to the property at 358 George Carter Road in Becket is estimated at $3 million. There were no injuries.

Investigators determined that the fire started around the patron's entrance to the building. Whether it started on the exterior or interior cannot be determined due to the extensive damage. It is possible that improperly discarded smoking materials or electronic equipment inside the entryway ignited the fire.

The fire alarm system had been in failure mode since Halloween, so there was no immediate notification to the fire department. The sprinkler analysis found that the sprinkler system may have worked for about 30 minutes before the pump failed. This same pump also operated the fire hydrant, which did not function. This led to a short delay in establishing sufficient water supply and flow. Firefighters used a pond on site to supply a tanker shuttle system for water. Delayed notification of the fire coupled with the failure of the fire sprinkler pump caused extensive damage before the fire department arrived, or was even notified.

Members of the Becket Fire and Police Departments and State Police assigned to the Office of the State Fire Marshal jointly investigated this fire. The insurance company is following up on the separate issues pertaining to the sprinkler systems.

Two Bondsville Fires

In the early morning hours of Sunday, March 14, 2021, the Palmer Police and Bondsville Fire Departments responded to a fire at 135 Griffin Street. The home had collapsed, and the owner's car was in the driveway. The car raised concerns that the owner might be trapped inside, but he was not on the site. The second floor fireplace was used for heat for several months. It had been in near continuous use with no chimney maintenance. An exact cause for the fire cannot be determined due to extensive damage. A chimney fire or an ember from the fireplace may have played a role.

On the afternoon of Sunday March 14, 2021, the Palmer Police and Bondsville Fire Departments responded to a fire at 3182-3184 High Street in Bondsville. The building was being remodeled from a side-by-side duplex into a single-family home. The fire started in, and was contained to, a second floor room. The cause of the fire is consistent with burning ritualistic material such as sage and incense. One family member alerted all other

Training an ignitable liquid detection K9. The K9s provide valuable assistance in many fire investigations.

Continued on next page

2021 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, hood cleaning, special hazard systems, portable fire extinguishers, marine fueling facilities and above ground tanks. Register for exams and see detailed information at *www.mass.gov/dfs*. Search for *DFS Licensing*. For questions, contact the Licensing Desk at 978-567-3700 or at dfs.licensing@state.ma.us.

Boiler and Pressure Vessel Program

The Boiler and Pressure Vessel Program offers monthly license exams for oil burner technician and all classes of fireman and engineer licenses. Register for exams and see detailed information at *www.mass.gov/dfs*. Search for *BPV 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/Verification/ or go to *www.mass.gov/dfs* and search for *DFS licensing*.

Examination Schedule	Examination Dates	Deadlines for Applications
FSD Exams	Exams start at 10:00 a.m.	
Fire Suppression Commercial Hood Cleaning	July 14, 2021 September 22, 2021 November 10, 2021	June 18, 2021 August 27, 2021 October 15, 2021
Cannon/Mortar, Fireworks, Special Effects, Blasting, Blasting R&D	August 18, 2021 October 20, 2021 December 8, 2021	July 23, 2021 September 24, 2021 November 12, 2021
BPV Exams	Exams start at 9:00 a.m.	
Oil Burner, Fireman & Engineer (all classes)	July 28, 2021 August 25, 2021 September 29, 2021 October 27, 2021 November 24, 2021 December 29, 2021	June 25, 2021 July 30, 2021 August 27, 2021 September 24, 2021 October 29, 2021 November 26, 2021

Fire Investigation News, *continued from previous page*

residents to the fire. Everyone escaped unharmed. There was some delay in calling 9-1-1.

Detectives from the Palmer Police Department, members of the Bondsville Fire Department and State Police assigned to the Office of the State Fire Marshal jointly investigated both fires. These fires are not connected to each other.

Reflected Sunlight Caused Stoneham Fire

The March 6, 2021 fire at 24-26 Hersam Street in Stoneham was sunlight reflected through glass bottles. The fire started on the exterior of the second floor porch, climbed up and entered the building through the soffits. Remnants of a cardboard box and empty clear glass beer bottles were located where the fire started along with discarded smoking materials. A neighbor's video camera showed no one on the porch for several hours prior to the fire. It did show the area in direct sunlight for several hours and the fire starting when combustibles ignited. Investigators determined that the intensity of the sunlight increased when reflected off the glass bottles and started the fire. That helpful evidence was key in determining the cause of the fire.

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

Massachusetts Firefighting Academy Graduations

Class #289

Class #S21

Class #BW08

Class #290

Career Recruit Firefighting Training

In the 50-day Career Recruit Firefighting Training program, students receive classroom training in all basic firefighter skills. 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 Career 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 the Stow headquarters of DFS, the Springfield campus and the new Bridgewater campus.

Training Safely During the Pandemic

In response to the pandemic, the 10-week curriculum was reorganized to take advantage of online learning technology while ensuring plenty of practical skill experience on-campus with instructors. Students alternated between the virtual classroom for two weeks, on campus for practical training (using special safeguards and social distancing) for four weeks, back to the virtual classroom for a week, returning to campus for two weeks and finishing the final week in the virtual classroom. A new matrix started with Class 291 and Class BW10. Students were on campus Monday through Thursday for short classroom lessons but mostly practicing and mastering new hands-on skills in the drill yard. Students studied in the virtual classroom on Fridays where new topics were covered in depth.

Class #289

On February 5, 2021 members of Career Recruit Firefighter Class #289 graduated. The 19 graduates represent the 10 fire departments of Burlington, Chelmsford, Ipswich, Lynn, Mendon, Nantucket, Saugus, Stoneham, Swampscott, and Westford.

Class #S21

Members of Career Recruit Firefighter Class #S21 graduated on February 5, 2021. The 11 graduates represent the six fire departments of Amherst, Dudley, Longmeadow, Northampton, Pittsfield, and Westfield.

Class #BW08

Members of Career Recruit Firefighter Class #BW08 graduated on February 5, 2021. The 20 graduates represent the 10 fire departments of Dedham, Hingham, Hull, Hyannis, Newton, Norwell, Norwood, Raynham, Stoughton, and Westport.

Class #289 trained at the Stow campus, Class #S21 trained at the Springfield campus, and Class #BW08 trained at the Bridgewater campus.

Class #290

On March 5, 2021 members of Career Recruit Firefighter Class #290 graduated. The 17 graduates represent the 12 fire departments of Burlington, Devens, Haverhill, Hudson, Nantucket, North Andover, Orleans, Plymouth, Sudbury, Wilmington, Winchester, and Woburn.

Class #S22

Members of Career Recruit Firefighter Class #S22 graduated on March 5, 2021. The 16 graduates represent the six fire departments of Holyoke, Longmeadow, Northampton, Palmer, Pittsfield, and Springfield.

Class #BW09

On March 5, 2021, members of Career Recruit Firefighter Class #BW09 graduated. The 15 graduates represent the nine fire departments of Avon, Falmouth, Framingham, Franklin, Hull, Lakeville, Rockland, and Somerset.

Class #290 trained at the Stow campus; Class #S22 trained at the Springfield campus; and Class #BW09 trained at the Bridgewater campus.

Class #291

Members of Career Recruit Firefighter Class #291 graduated on May 7, 2021. The 16 graduates represent the seven fire departments of Acton, Haverhill, Lynnfield, Malden, Plymouth, Watertown, and Westborough.

Class #BW10

On May 7, 2021 members of Career Recruit Firefighter Class #BW10 graduated. The 18 graduates represent the eight fire departments of Bourne, Canton, Dennis, Falmouth, Framingham, Harwich, Norton, and Wellesley.

Class #291 trained at the Stow campus and Class #BW10 trained at the Bridgewater campus.

Continued on page 24

Class #S22

Class #BW09

Class #291

Class #BW10

The DFS Virtual Classroom

It's hard to believe that COVID-19 has been with us for over a year. The pandemic forced everyone, including the MFA, to figure out how to operate safely. In April of 2020, the MFA charged its staff with finding a way to run virtual courses so training could restart. Leading the charge was Paul Betti (who provided similar leadership on the DFS Learning Management Software project). Working with Media Project Lead Joshua Shanley they tested a trial version of Adobe Connect, a software used in many educational organizations. In May 2020, they piloted two Fire Officer I classes using the software. They added Media Specialist Coordinator Christina Mitchell to the team to help create training on how to use Adobe Connect, write many "job aids" (how-to instructions) and convert training presentations for the virtual platform.

What does it take to convert an in-person course to a virtual one?

1. A coordinator removes all media content, formats the material, adds placeholders in the training presentation and adds technical poll questions.
2. A licensed host validates the content and uploads each presentation, video, audio file, attachment and poll questions to Adobe Connect.
3. Individual training sessions are created, and the URL is distributed to students and instructors.
4. Every virtual classroom needs a host to run the software.
5. After every class, a series of reports is downloaded to process student credits in LMS.

The MFA set a goal to re-start Career Recruit training in early June. Program coordinators began submitting their courses for the new platform. Samantha Turco and Julie Bergeron were added to the team. The team of five was able to upload and run almost 15 different courses that run days, nights and weekends.

When it became possible to bring some students back to our campuses for practical training, we released more training including hybrid courses that have virtual lectures and practical training days. In just two months, we added 20 more courses. Facing the need for even more help, we enlisted of our newly hired curriculum development specialist and the MFA registration staff.

After a year of virtual and hybrid training, we are constantly learning and making improvements, as is our vendor. Virtual training can never fully replace in-person training, but the pandemic forced us to train in the safest way possible for staff and students.

Virtual training will not end with the pandemic. Some courses fit perfectly into a virtual format. Students have the benefit of training from home or the fire station without long commutes to our campuses.

The MFA staff, from program coordinators who converted their training materials to the exceptional implementation team, have worked hard. We have added 51 courses to our virtual catalog, and 18 more were in development as of June 2021. We have 11 licensed hosts, 24 instructor hosts and 194 trained presenters. This allows us to run anywhere from 10-24 virtual trainings every week. See our full course list below.

Course #	Course Name
FO1	Fire Officer I
030/031/050	Career Recruit Firefighter Training 10-week
390	Call/Vol Recruit Firefighter Training
RFE	Recruit Fitness Orientation
611	Blasting Detail Orientation
10A	Virtual Classroom Presenter
10B	Virtual Classroom Host
AUD	New Instructor Orientation
146	Adv FF Skills Instructor Improvement
133_v1	Emergency Vehicle Operations
101_v1	Aerial Ladder
FO2	Fire Officer II
291	Flashover Simulator Training
422	Cancer in the Fire Service- Awareness
509	Fire Investigation and Law Relating to Juveniles
FO3_v1	Fire Officer III
370_v2	Fire Instructor I
369_v1	Live Fire Qualification
535	ICS for Structural Collapse Incidents
078	Flashover Train-the-Trainer
613	MFIRS
207_v2	OLR 5th edition
399	Flammable Gas Training
266_v1	Ethanol Training
429	Common Emergencies
801	Non-criminal Ticketing (148A)
385	Motor Pump Operator
OMT	SCBA Maze Trailer Train-the-Trainer
428	Fire Emergency Operations (FEO) 3502 (Elevators)
436	Vehicle Fires
EPN	High Voltage Emergency Awareness

Continued on next page

Ignitable Liquid Detection K9 Team

Massachusetts State Police Trooper Kurt Bourdon and his K9 McDonald are now an official Ignitable Liquid Detection Canine Team (IGL K9). They graduated on February 11, 2021 after an 11-week course. They passed their final NESPAC Odor Recognition Test with chemist John Drugan on that day. Congratulations to Trouper Bourdon and McDonald.

DFS Virtual Classroom, *continued from previous page*

Course #	Course Name
065	Forcible Entry Train-the-Trainer
426	Automatic Sprinklers Systems
449	Meters
117_v1	Protective Breathing Search & Rescue
307	Rope Technician
301	Confined Space Rescue Awareness
303	Rope Operational
293	Forcible Entry
E64	Maritime Senior Lecture
030/031/050	Career Recruit - 4 x 1 matrix
446	Roadway Safety
433	Fire Attack
256_v1	Rapid Intervention
25A	HazMat Technician NFPA Standard
390	Call/Vol Recruit Firefighter Training, 7th edition

Editor's Note

This is not the official position of the Department of Fire Services, but a personal reflection after many years of service.

This is the last issue of the *All Hands Herald* that I will be editing. After 37 years with the Office of the State Fire Marshal, I am retiring. I have long said, "I've seen marshals come and I've seen marshals go," but this marshal will be the one who finally sees me go. As I say good-bye to my colleagues at DFS, the fire service and all our community partners, it has been a great honor to work to improve people's lives and create communities that are safer from fire.

Quality fire data allows us to fight fire with facts and evaluate if our policies, laws and regulations are working. It tells us who is getting hurt in fires, where, how, when, and with the help of strong fire investigations, why. The creation of the Student Awareness of Fire Education (S.A.F.E.) and Senior SAFE Programs is a model for the nation. Effective public fire education drove a sharp decline in total fire deaths and a major reduction in child fire deaths. Consistent comprehensive fire education over a quarter century has led to a calendar year and a 26-month period, and counting, with no child fire deaths. Historic firsts.

Our fire codes and laws are always written in blood. The response to terrible tragedies has led to requiring smoke and carbon monoxide alarms in homes, marking and securing abandoned buildings, better regulation of welding and hood cleaning, sprinklering high-rises, night-clubs and incrementally built buildings. The next major step is to require sprinklers in all newly built one- and two-family homes. Smoke alarms and public education can only do so much to reduce the toll of fires, fire injuries and fire deaths given current construction techniques and all the synthetics in today's homes. Most fire deaths occur in one-family homes. Nearly half of all fire deaths are now people 65+. People today have less than 3 minutes to escape a fire compared to the approximately 15 minutes they had when I started with DFS. Sprinklers will give everyone more time to escape fire. These homes will not always be new. We have to start now to change the future of fire. Fire should be a ho-hum news story about wet things drying out. We'll always need firefighters, but we could do with needing fewer body bags and losing less housing.

Jennifer Mieth
Public Information Officer

New Bailout Prop for Springfield Campus

The Massachusetts Firefighting Academy (MFA) has made teaching rapid intervention and firefighter self-rescue skills a high priority for many years. Learning to survive high-risk/low-frequency incidents is essential. MFA has a "Bailout Prop" to teach self-rescue skills and emergency egress techniques (how to bail out). When time is of the essence, bailing out may be the only option for survival. The MFA just installed a new bailout prop on the Springfield campus. (See photo). When the new search and rescue building is built on the Bridgewater campus, a bailout prop will be incorporated into the design. Having a bailout prop on each campus will improve curriculum consistency at all three campuses.

MFA Graduations, *continued from page 21*

Class #89

Class #90

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. Graduates complete 240 hours of training. Bringing the training closer to the firefighters often means more firefighters can participate. Pre-pandemic the program already used an online eBlended format that had students doing more work outside of class and taking quizzes online. During the pandemic, students have done more studying in the virtual classroom and done practical hands-on training in smaller groups. 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 #89

Members of Call/Volunteer Recruit Firefighter Class #89 graduated on February 27, 2021 at the Department of Fire Services' Stow campus. The 29 graduates represent the 14 fire departments of Boxford, Dunstable, Essex, Georgetown, Hamilton, Haverhill, Lincoln, Lynnfield, Merrimac, Middleton, Newbury, Newburyport, Topsfield, and Wenham.

Class #90

Members of Call/Volunteer Recruit Firefighter Class #90 graduated on February 28, 2021 at the Department of Fire Services' Stow campus. The 22 graduates represent the 11 fire departments of Berlin, Douglas, Dudley, Grafton, Hopedale, Leicester, Mendon, Sherborn, Uxbridge, Webster, and Weston.

Maritime Exercise in Gloucester Harbor

On May 26, 2021, the Gloucester Harbor Master hosted a regional exercise conducted by the DFS Hazardous Materials Response Division. The exercise focused on regional cooperation among participating first responders, maritime maneuvers, and training on state-of-the-art detection equipment and techniques.

Coronavirus Mitigation at DFS

Over the past year, DFS has taken steps to protect employees and visitors from COVID-19.

- We increased HVAC filter changes from quarterly to bimonthly.
- We continuously adjust air dampers to take in as much outside air as possible given the weather conditions.
- A vendor conducts weekly whole-campus hydrostatic sanitizer spraying in common and classroom areas.
- We conduct daily hydrostatic sanitizer spraying of the crib room, apparatus, and training areas.
- Hand sanitizing stations are installed throughout all campuses.
- Sanitizer spray and towelettes are available on all campuses for self-service sanitizing of tables, office equipment, showers and more.
- Six-foot markers and traffic flow directional signage were installed in many areas.
- We have free-standing air filtration units in meeting spaces and conference rooms.
- We installed additional plexiglass barriers in certain reception and food service areas.
- We recently installed UV light treatment systems in all air handling units on our three campuses.

The system operates through a patented photohydroionization (PHI) process that neutralizes airborne virus particles. An independent testing lab found the process to be 99.9% effective against the coronavirus that causes COVID-19. The treatment provides increased coverage for all spaces in our buildings and provides uniform protection across all campuses.

DFS monitored visitor & employee entries and exits, ensured social distancing and reduced occupancy levels to help protect against the spread of COVID-19.

Air filtration system in conference room.

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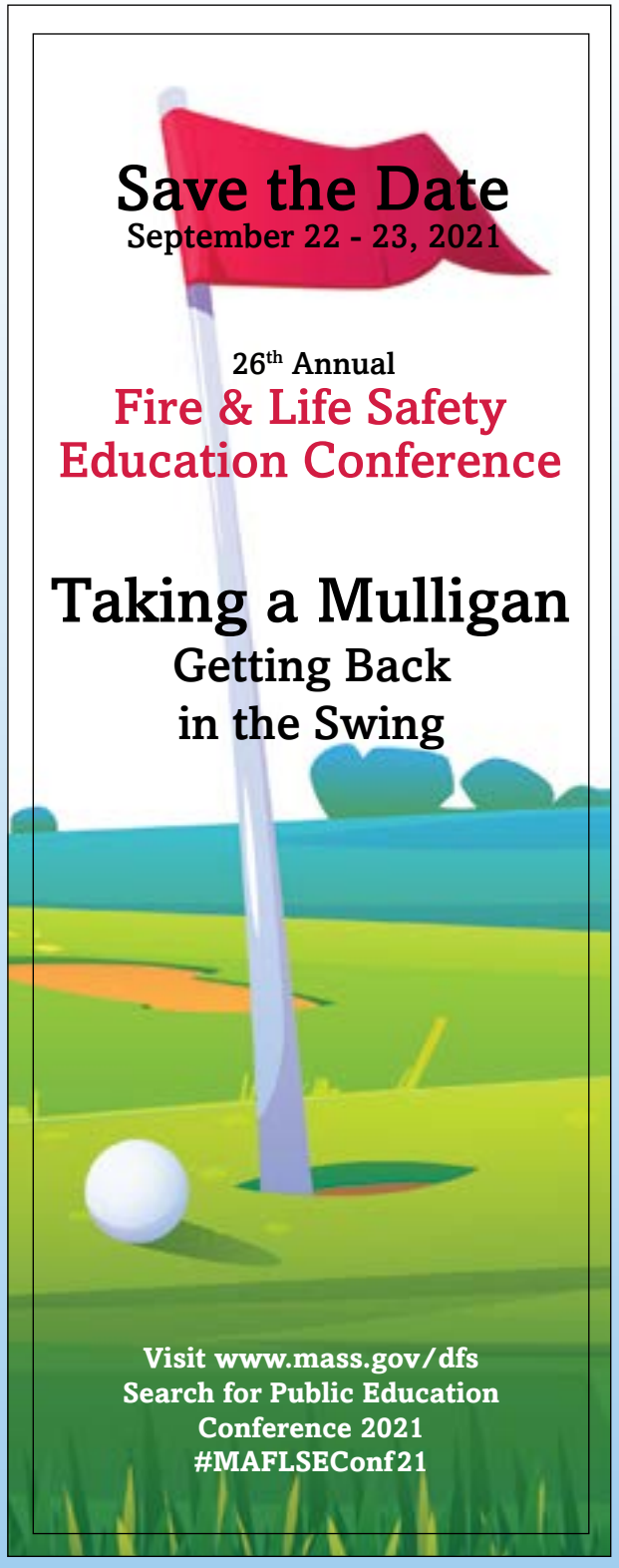

The Conference is On!

The 2021 Public Fire & Life Safety Education Conference will be on September 22-23, 2021 at the Cape Codder Resort and Spa in Hyannis.

Don't miss this chance to re-connect with colleagues, learn new skills and refresh old skills.

For more information, email Cynthia.Ouellette@mass.gov. Registration information will be available soon at www.mass.gov/dfs. Search for Massachusetts Public Education Conference.

Make plans now to join us September 22 – 23 in Hyannis.