All Hands Herald

Massachusetts Department of Fire Services January 2016

DFS Springfield Open

Dedication Ceremony and More

Impact and Railroad Response Programs from MFA

Firefighter of the Year Awards

Fireground Air Monitoring

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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

On the Cover

Firefighter training at the new Springfield DFS facility on dedication day.

From the Fire Marshal

Dedication of DFS Springfield Campus

2015 ended with a huge milestone for the Massachusetts Fire Service. The DFS Springfield Campus was officially dedicated by Lt. Governor Karyn Polito, Undersecretary for Public Safety & Homeland Security Patrick McMurray, legislative champion Senator Stanley Rosenberg, Springfield Mayor Domenic Sarno, Springfield Fire Commissioner Joseph Conant, and many members of the Massachusetts fire service. Firefighters are already training at the new facility with Massachusetts Firefighting Academy and Springfield Fire Training staffs. The job of firefighter is demanding and requires an ever increasing amount of training. That is why being able to provide a training platform closer to where the firefighters in western Massachusetts work and live is so important.

I was very pleased that so many members of the Legislature, the fire service and of the Department of Fire Services' staff were able to join us for the dedication ceremony. It took many years of effort to create this brick and mortar facility to serve the fire service. I want to thank area legislators who worked with Senator Rosenberg and the western Massachusetts fire chiefs and the Fire Chiefs' Association of Massachusetts, for their efforts. One of those fire chiefs was John Flaherty of West Springfield who spent more than a decade on the Massachusetts Fire Training Council. During his career, he was a tireless advocate for the need to build a western Massachusetts firefighting academy. Mrs. Mary Flaherty and her family were able to join us and see the auditorium that is dedicated in his honor.

I want thank the Division of Capital Asset Management and Maintenance for their overall management of this project; Dore & Whittier Architects for an excellent design; and the general contractor W. J. Mountford for delivering such a wonderful campus. I especially want to thank the Department of Fire Services team of Deputy Fire Marshal Peter Ostroskey, Director of Administrative Services Sheila Remondi, and our Director of Capital Asset Management James DiRico and their employees for pulling the project together successfully.

I will be retiring soon and the completion of the Springfield campus brings my career full circle. Nearly four decades ago, one of my first jobs at the Fire Academy was to write a master plan for fire training in the Commonwealth. The plan highlighted the need for a centrally located facility – which we now have in Stow – and the first outreach was construction of a facility in western Massachusetts. Although it did not happen as fast as we might have liked, we have finally delivered on that promise.

Firefighter of the Year Heroic Awards

One of the highlights of each year for me has been to assist the governor at the annual Firefighter of the Year Heroic Awards ceremony. This year was no exception, although bittersweet as it will be my last. It was a pleasure to stand with Governor Charlie Baker and Public Safety Secretary Daniel Bennett as they presented 43 awards for outstanding acts of courage and bravery. I know full well that every recipient felt they were just doing their job, and nothing more.

The ceremony allows the Governor to thank, on behalf of all the citizens of Massachusetts, these men and women for their service, and to thank their families for the sacrifices they make so that their loved ones can protect the community. This event began as a humble one 26 years ago at the base of the grand staircase in the State House in Boston. It has grown to the large event we held on November 23 at MIT's Kresge Auditorium, attended by hundreds of firefighters and family members.

At the ceremony, I also had the opportunity to bring attention to the important issue of critical incident stress management by honoring three groups that work on firefighter health and safety by presenting them with the Fire Marshal's Award. Everyone knows that firefighting is a dangerous job, but sometimes the dangers are hidden. Firefighters try to shrug off what they have seen, but witnessing the suffering of others can take a toll no matter how strong or tough they think they are. Sometimes we need to be there for our firefighters, helping them to stay physically, mentally and emotionally healthy. Massachusetts has built a network that supports them through the Massachusetts Corps of Fire Chaplains, the Peer Support Network and the On-Site Academy. These resources are a model for other states.

Continued on page 3

Springfield Campus Dedicated

December 1, 2015 was a terrific day for the Massachusetts fire service as the Department of Fire Services' Springfield campus was officially dedicated.

This facility is a critical expansion of the Department of Fire Services' (DFS) infrastructure to better serve the western MA fire service with a myriad of resources positioned to have a positive effect on public safety.

The new training facility is a 6-acre complex with a three-story live-fire training prop burn building, a five-story training tower, a new administration and classroom building, and associated utility buildings. The new building is 18,000 square feet with classrooms, locker and shower facilities, and three fire apparatus bays. The existing burn building was overhauled and significant repairs were made to the training tower. A water reclamation system similar to the one at the Stow facility was installed to recycle and reuse water used in training.

This $13.4 million project was built on the site of the former Springfield Fire Training Center that the state bought from the city. Transforming this facility into a state-of-the-art training facility that can be accessed by all firefighters has long been a goal of the western Massachusetts fire service. The auditorium is named after former West Springfield Fire Chief Charles Flaherty, who as a member of the Massachusetts Fire Training Council, advocated tirelessly, over decades, for this facility.

In addition to being a firefighter training facility, it also provides office space for the Mass. State Police Fire Investigation Unit's West Team and the DFS' Division of Fire Safety's Code Compliance and Enforcement Unit's western MA staff. DFS Special Operations vehicles will also be stationed here.

The Springfield Fire Department training staff is housed at the facility as part of a unique state-local partnership. The city benefits from access to this training facility and the Mass. Firefighting Academy will be able to take advantage of their skills and expertise.

The first 9-week Career Recruit Firefighting training class in the facility began mid-November, 2015 and will graduate early February 2016 and other courses including a Senior Fire Officer Forum are already scheduled to take place in the new facility.

Uncoupling the hoses.

Recruit training at the new facility.

Lt. Governor Karyn Polito.

Springfield Fire Department Color Guard.

DFS and Springfield ladder trucks flying the flag.

From the Fire Marshal, *continued from page 1*

Leaving DFS

In closing, I want to say thank you for the honor of working with the Massachusetts fire service, first with the men and women of the Massachusetts Firefighting Academy and later with the Department of Fire Services. I have had the most interesting career anyone could have asked for and I hope that along the way we did some good for firefighters and to keep the public safer from fire.

Impact and Railroad Response Programs from MFA

Season's greetings and all the best in the new year from the staff and instructors of the Massachusetts Firefighting Academy (MFA). The MFA is introducing innovative and updated programing in 2016.

Impact programs provide short online or in-person training for firefighters on a wide range of important topics. In 2016, Impact programs will address urgent and/or contemporary topics. Many impact programs are available both online and in the classroom.

Chemical (Detergent) Suicide Awareness

We developed this program after a recent chemical suicide (also known as a detergent suicide) where secondary contamination sickened responding law enforcement and EMS personnel. This program educates first responders about chemical suicide and its extreme dangers. Key elements in the training are the recognition and identification of a potential detergent suicide and the procedures and personal protective equipment necessary to ensure firefighter safety at these incidents. (Online only.)

Introduction to Transitional Fire Attack and Flow Paths

This course introduces new scientific findings about modern fire behavior and tactical considerations from studies conducted by Underwriter's Laboratory (UL) and the National Institute of Standards and Technology (NIST). The findings relate to modern fuels and address the physics of combustion and the flow paths of air, fire, gas, and heat. In addition, the studies validated the effectiveness and practicality of a transitional fire attack. (Online or field delivery.)

Photovoltaics for the Fire Service

Alternative electrical generation systems that convert solar energy to electricity are becoming prevalent in residences, industry and along highways. They are known as photovoltaic systems, or PV, and consist of solar panels and other electrical components that convert solar energy to electricity. Firefighters may encounter a PV system during emergency operations. Many residential systems are roof mounted and may present hazards during firefighting. This course will teach you to safely conduct firefighting and other emergency operations in and around PV systems. (Online or field delivery.)

Fire Service Air Management

Did you know that the 2013 edition of NFPA 1404: *Standard for Fire Service Respiratory Protection Training* requires firefighters to exit an immediately dangerous to life or health (IDLH) atmosphere before the low air alarm sounds? Did you know that the 2013 edition of NFPA 1981: *Standard on Open-Circuit Self-Contained Breathing Apparatus for Emergency Services* requires the low air alarm on newly manufactured SCBAs to sound when 33%, instead of 25%, of the cylinder's available air remains? This program details real world scenarios and hardware limitations and outlines simple air management rules and an implementation strategy. (Online or field delivery.)

Compressed Natural Gas (CNG) Awareness

While there has been a significant increase in the natural gas supply, the infrastructure to move it does not exist in many areas. The development of large, road transportable

compressed natural gas (CNG) supply modules enables natural gas to be used in areas where no underground delivery system exists. These *virtual pipelines* present significant challenges to firefighters. In addition, CNG is just one of many alternative fuels powering a large variety of vehicles. *Compressed Natural Gas (CNG) Awareness* is a new Impact program that provides curren information about the use and transport of CNG. (Online or field delivery.)

Confined Space and Trench Awareness

Would-be rescuers often become victims during confined space and trench incidents because of a lack of training. The *Confined Space and Trench Awareness* Impact program provides current information to help firefighters recognize and avoid the most common hazards associated with these technical rescues. (Online or field delivery.)

Traffic Incident Management for the First Arriving Fire Company

First responders continue to be injured and killed at the scene of roadway incidents. *Traffic Incident Management for the First Arriving Fire Company* is a new Impact course that uses real world case studies, scenarios, and the national traffic incident management system to provide focused safety procedures for the fire company operating at a roadway emergency scene. (Online or field delivery.)

For questions or to schedule field delivery of an Impact program, contact John Spillane at: John.Spillane@state.ma.us. To take an online Impact course, visit www.mass.gov/dfs and click on *MFA Course Registration*.

High Hazard Railroad Response Course

With the help of a federal Hazardous Materials Emergency Preparedness (HMEP) grant, the MFA is developing a multi-module, comprehensive, *High Hazard Railroad Response* (H2R2) course. Modules will include: basic rail safety for emergency responders; high hazard railroad response strategy and tactics; assessment, air monitoring, and advanced techniques for hazmat teams/technicians; and an incident commander seminar as part of the spring *Senior Fire Officer Forum* series. The program will bring incident commanders to MFA to share insight about major rail emergencies. Many of the new H2R2 courses will have classroom and practical components. In combination with ethanol and foam courses, these programs can significantly increase training and response capabilities for municipalities and hazmat teams who are on or near rail corridors. For more information, contact Hazmat Program Coordinator Michael Barry at: Michael.J.Barry3@state.ma.us.

2016 brings many opportunities for continuing education and professional development at the MFA. We look forward to your participation and welcome your feedback.

Fire Chief Credentialing Program Update

Change in Eligibility for Anyone Holding the Rank of Captain or Above

Chief David Butler, Chairman, Massachusetts Fire Service Commission

The Massachusetts Fire Service Commission has established a process of credentialing fire chiefs in the Commonwealth. The commission does not set standards for an individual to hold the designation of Massachusetts fire chief, but has established credentials based on education, training, and experience relevant to serving as fire chief. The commission has also established requirements for maintaining the designation of Credentialed Massachusetts Fire Chief.

The credentialing program is solely administered by the Massachusetts Fire Service Commission. Any current chief of department or chief officer is eligible to apply for credentialing. Also, any person holding the rank of captain or above in a department is eligible to apply for credentialing. Participation in the program is voluntary and all eligible personnel are encouraged to participate.

Additional information and forms can be found on the Fire Service Commission web page at www.mass.gov/dfs.

26th Annual

Firefighter of the Year Awards

Kresge Auditorium

Palmer and Three Rivers

Governor Charlie Baker, Public Safety and Security Secretary Daniel Bennett and State Fire Marshal Stephen D. Coan recognized heroic acts of bravery during the 26th annual *Firefighter of the Year* Awards on November 23 at the Massachusetts Institute of Technology's Kresge Auditorium in Cambridge.

"This year's award recipients are fine examples of the instinct that all firefighters possess to help others," said Governor Baker. "We honor these heroic men and women of the Massachusetts fire service who deployed their training and experience to protect those in need, often at great risk to themselves." "The firefighters we honor today showed tremendous skill and bravery in the face of fires, technical rescues, emergency medical services, on land and on water, on duty and off," said Public Safety Secretary Bennett. "This ceremony allows us to express our appreciation for these hometown heroes and their families," he added.

Governor Baker and Secretary Bennett presented 43 awards: Two Norman Knight Awards for Excellence in Community Service to a Lawrence Firefighter for his youth firesetting intervention program and to two Worcester firefighters for their public education and community risk reduction efforts; An Excellence in Leadership Award to a Saugus firefighter for his work to help public safety officers who are also veterans to heal the emotional scars of war; Ten Individual Awards for Meritorious Conduct to firefighters from Boston, Bourne, Chelsea, Falmouth, Framingham, Massport, and Melrose; Eight Group Awards for Meritorious Conduct to teams of firefighters from Boston, Bourne, Framingham, Greenfield, Nantucket, Norwood, Palmer, Three Rivers, Turners Falls, Westwood; and Twenty-two Medals of Valor to individual firefighters from Bourne, Brookline, Chelsea, Lowell, Marblehead, Revere, Taunton, Turners Falls, and Westwood.

The State Fire Marshal's Award was presented to three groups who help firefighters manage the stress and emotional toll resulting from the performance of their duties. The Massachusetts Corps of Fire Chaplains, the On-Site Academy, and the Massachusetts Peer Support Network created and manage a system that promotes the health, fitness and well-being of Massachusetts firefighters. "Everyone knows that firefighting is a dangerous job, but sometimes the dangers are hidden," said State Fire Marshal Coan. "Witnessing the suffering of others takes its toll and sometimes we need someone to be there for our firefighters to ensure they keep their physical, mental and emotional health, and can continue to serve."

Boston

Marblehead

Worcester

Lowell

Photographs by Nicolaus Czarnecki

In Memory of

Former State Fire Marshal O'Keefe

On September 14, 2015, former State Fire Marshal Joseph A. O'Keefe Sr. PE passed away at age 82. At the time of his death he was a sitting Salem City Councilor running for re-election. O'Keefe served as state fire marshal for 15 years (1977-1992) under Governors Dukakis and King. For many years he was the longest serving state fire marshal. Just before he took office, the first smoke alarm laws were enacted in Massachusetts. As State Fire Marshal he expanded and strengthened those laws. In 1979, legislation that required fire departments to inspect homes built before the State Building Code (1975) for smoke alarm compliance upon sale or transfer led to the rapid proliferation of smoke alarms in Massachusetts, and a reduction in fire deaths throughout the 1980s.

After a fire in the Prudential Tower, O'Keefe led the charge to require sprinklers in high-rise buildings. After a deadly 1984 fire at the Elliott Chambers Rooming House in Beverly, the fire service persuaded the Legislature to pass a local option law allowing communities to choose to require sprinklers in rooming houses. This law continues to serve as a model for future sprinkler legislation, for which the fire service advocates.

O'Keefe automated the Massachusetts Fire Incident Reporting System, providing decision makers with good data; implemented the Massachusetts Burn Injury Reporting System to track arsonists who injure themselves committing crimes and then evade detection by seeking medical treatment in another community; reduced auto arson by implementing the Massachusetts Burned/Recovered Motor Vehicle Reporting System, which required vehicle owners to report burned cars, making it harder for people to "sell" their cars back to insurance companies; and bought the first fax machine and desktop computers for the office.

O'Keefe worked with the State Police to increase the professionalism of the fire investigation unit (his predecessor was a State Police officer who was indicted in an arson ring) and many of the changes that took place on his watch were later incorporated into the National Fire Protection Association's 921 Standard on Fire Investigation. The first accelerant detection canines came during his tenure. Today we have seven arson dogs and eight bomb dogs. He worked with the insurance industry to implement the Arson Watch Reward Program, still in use today, to help leverage information from the community to solve cases.

When O'Keefe was state fire marshal, the office was part of the Department of Public Safety that included the State Police and was headed by the State Police Colonel. Today, the Office of the State Fire Marshal is part of the Department of Fire Services, a standalone agency under the Executive Office of Public Safety and Security that includes the Massachusetts Firefighting Academy, the Hazardous Materials Emergency Response Program, the Division of Fire Safety (fire prevention), State Police Fire and Explosion Investigation Unit, and the Special Operations, Unit all headed by the State Fire Marshal.

O'Keefe served as an Air Force firefighter, graduated from Oklahoma State University, received a master's degree from Harvard University and a certificate from Harvard's JFK School of Government. Before becoming fire marshal he worked in the insurance industry as a risk reduction specialist. He was extremely proud of being the first registered professional engineer to serve as state fire marshal. He brought a unique skill set to the job that helped him promote better building and fire codes. O'Keefe also served as a professor in the fire science programs at Bunker Hill and North Shore Community Colleges, Providence College and Northeastern University during his career. As a professor he mentored hundreds of firefighters, fire officers and fire chiefs who remember him as fondly as do his former staffers. He taught everyone two key lessons: read the law and family first. The father of nine children, he knew what he was talking about.

Joseph O'Keefe (fourth from the right in the first row) with the staff of the State Fire Marshal's Office and the State Police members of the Fire Investigation Unit, late 1980s.

Plans Review Desk

Fire Department Connections

Fire department connections (FDCs) are on the exterior of buildings that are protected by water-based fire protection systems. An FDC allows the fire department to supplement the water supply to the system in the building. FDCs are commonly seen on sprinkler and/or standpipe systems. They also exist on water spray systems. An FDC is required on most sprinkler systems and on all standpipe systems, but are not required on NFPA 13D sprinkler systems installed in residential buildings with one, two, or three-dwelling units.

In buildings with multiple water-based fire protection systems, a single FDC can be arranged to serve all of the systems, or one FDC must be provided independently to each of the systems. In buildings that have multiple FDCs serving the sprinkler and/or standpipe systems, the FDCs must be interconnected such that any FDC serves all sprinkler and/or standpipe systems in the building (2013 NFPA 13: 18.17.2.4.5).

The FDC location must be proposed as part of the Tier One construction documents submitted for the building permit (780 CMR 901.2.1). The FDC location shall ultimately be approved by the fire department. The FDC should be placed in a location that does not obstruct additional responding fire department apparatus. If the fire department does not provide a specific location, the FDC must be on the street side of the building. Also, as much as possible, the FDC placement on the building should be consistent with existing FDC locations to prevent searching for the connection during a response.

FDCs should be located between 18 and 48 inches above the ground. For FDCs serving standpipe systems, the height restriction is a requirement (2013 NFPA 14: 6.4.6). Height should be recommended for all FDC installations. If the FDC is installed at 30 inches above the ground or higher, an elbow should be installed to prevent kinking in the hose.

Only FDCs serving buildings with standpipe systems are required to be within a certain distance from a fire hydrant (100 feet). Because sprinkler systems do not need the fire department to supplement the water supply, no such requirement exists for sprinkler systems. In either case, the fire department can request or recommend that a closer hydrant be installed for the FDC during the site plan approval, or the Tier One plan review process.

A 3-foot clear space (minimum) must be kept around installed FDCs so they are clearly visible and unobstructed. The clear space includes landscaping, fencing, other building features, and snow. If the FDC might be damaged by vehicles, physical protection (bollards) must be installed.

The most common FDCs are either a 2½ inch Siamese or a storz connection. A minimum single 1½ inch connection may be the only requirement for an NFPA 13R sprinkler system. The connection (threaded or storz) must be compatible with the department's hose. The only way to ensure a proper fit is to physically attach the fire department's supply hose to it. This should be done during construction inspections.

An FDC should be inspected by the fire department on a quarterly basis (2011 NFPA 25: 13.7.1). Common issues include freezing, physical damage to the connection point or piping, removal of the FDC cap, or inaccessibility due to vegetation growth or snow. Remedy issues immediately to ensure that the fire department has access to the building's water-based protection system.

In buildings where the sprinkler system or FDC does not protect the entire building, a sign must be placed over the FDC indicating which portion of the building is protected and served by the FDC.

For more information, contact the Division of Fire Safety's fire protection specialists. Communities north of the Turnpike, contact Jen Hoyt at 978-567-3376 or Jennifer.Hoyt@state.ma.us. For communities south of, or on the Massachusetts Turnpike, contact Jake Nunnemacher at 978-567-3377 or jacob.nunnemacher@state.ma.us.

Fireground Air Monitoring

On August 1, 2015, a fire at the TCI recycling facility in Ghent, New York caused a day of hazmat team operations in Massachusetts Hazmat District 5, Berkshire County. Massachusetts officials were notified of a shelter-in-place order that extended six miles into Massachusetts ten hours *after* New York officials placed the order. Hazmat teams were tasked with proving the absence of risk and with eliminating mounting concern over carcinogenic PCBDs effecting western Massachusetts communities. After ten hours of wind and fire condition changes, determining the risk of possible carcinogens from burned oil that might contain PCBs was a difficult proposition.

The District 5 Hazmat team, along with elements of District 4 Hazmat team, the Mass. National Guard's First Civil Support Team (CST) mobile laboratories from Massachusetts, Vermont and Connecticut were deployed to conduct surface sample analysis throughout southern Berkshire County. The nearly 12-hour operation provided the impetus for Hazmat to acquire new technologies called "combustion analysis modeling," an add-on to its SAFER Homeland Responder chemical release modeling software. Combined with an array of wireless reporting air monitors, a robust new capability was realized.

We have always heard "fires are the most common hazmat incidents," but the hazmat aspect of toxic products of combustion has rarely been considered or addressed during major fires. There simply was no effective means to quantify the issue. Toxic products of combustion affect two major and distinct groups; fire fighters and the community surrounding a fire. Using our new capabilities, the Massachusetts Hazmat team has an improved ability to both quantify and qualify the risk of hazardous materials from products of combustion. Under a new hazmat directive and through an advisory from the State Fire Marshal, fire departments can request an enhanced tier 1 hazmat team response to conduct a developing strategy called "Fireground Air Monitoring."

Fireground air monitoring combines our new technical capabilities and team skills to assess the hazards in three areas; the exterior of a fire building (or site), the support area, extending into a wider perimeter where command posts, rehab, EMS and supporting apparatus are located, and into the downwind community. The objective is to detect and identify expected chemical hazards and make recommendations to the incident command to reduce exposure and risk. A delicate balance is necessary to not be so rigid as to impede firefighting operations, but simultaneously make meaningful improvements to protect firefighters from toxins and carcinogens while fighting the fire and to protect populations, especially sensitive ones, from the same hazards.

A fireground air monitoring tier 1 is a 7-member response with a Technical Operations Module (TOMs) or Hazmat squad and a Tactical Support Unit (TSU). This response can be expanded if the need exists.

The advisory to fire departments limits the request to fires involving chemicals or large volumes of plastic and foams, or persistent fires with a prolonged downwind smoke condition effecting sensitive populations. While all fires pose some risk of toxic products of combustion, the listed fire types posed a larger and more persistent risk. Hazmat teams cannot be deployed to every fire.

What to Expect

When a hazmat team arrives at a fire, the first arriving technician assumes the role of team leader and meets with the incident commander to receive tasking/objective assignments for the team. When hazmat apparatus arrives, initial reconnaissance is conducted with orthogonal (multi-sensor) technology to detect and characterize the most common gas/vapor hazards from combustion. This information is provided to the incident commander and/or safety officer with recommendations to initially reduce exposure.

Following the initial reconnaissance, the hazmat team analyzes the fire type, based on U.S. Environmental Protection Agency (EPA)

Continued on page 17

Canine News

From the Fire and Explosion Investigation Unit

AK-9 Landis

AK-9 Star

Specially trained dogs have been vital team members in the Fire and Explosion Investigation Unit for more than 25 years. Together with their handlers, the dogs provide the unique services of accelerant detection (arson dogs) and explosive detection (bomb dogs). The dogs work to eat on the food reward system, and they work hard. Eventually, the dogs retire with their families and eat out of bowls for a change. Two new arson dogs are joining the Fire and Explosion Investigation Unit as two others retire.

The federal Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) has given DFS a new dog named Star who is assigned to the West Fire Investigation Team. Star will replace Nell, an AK-9 for the West Team, who will retire in the next year. Star and her partner trained for six weeks at the ATF facility in Front Royal, Virginia. The ATF has a national program that places dogs in state and local fire investigation units. The dogs are also part of the National Response Team (NRT) and can be deployed for incidents all over the country.

Many canines in the Fire and Explosion Investigation Unit began their training with *Guiding Eyes for the Blind*, where their personalities and temperaments are assessed. Some dogs that are better suited for investigative work than for assisting the visually impaired come to us for training and work as arson and bomb dogs.

South Fire Investigation Team dog Damian has retired and Landis, another new dog, replaces him. Landis and her handler have been certified. They were trained by State Police Sgt. Paul Horgan who is a certified canine trainer. Shortly, the unit will have two certified canine trainers when Trooper Michael Fagan completes his testing. Landis is supported by the Massachusetts FAIR Plan which has sponsored the training and equipment for many of the Fire and Explosion Investigation Unit's dogs.

Almost all canines in the Fire and Explosion Investigation Unit start out being trained by the Guiding Eyes for the Blind where their personalities and temperaments are assessed. Some dogs are better suited for investigative work rather than assisting the visually impaired.

On August 6, 2015, Trooper Dan Jones had a chance to thank Guiding Eyes for the Blind and show our appreciation for their support for our canine program over the past 25 years. At the Connecticut State Police Canine Training facility, he presented Janet Somerville, Coordinator of the Guiding Eyes for the Blind, with a framed photo, donated by the State Police Association of Massachusetts (SPAM). Janet has helped in the process of selecting the best dogs for our mission.

Trooper Dan Jones presents Janet Somerville, Coordinator of Guiding Eyes for the Blind, with a photo in appreciation of her organization's support for our canine program for over 25 years.

Polygraph

A New Tool for Fire Investigators

The Department of Fire Services recently received a new tool to use in the course of fire investigations throughout the Commonwealth. Trooper Eric Desrochers, assigned to the Fire & Explosion Investigation Unit, has recently completed a 10-week training program in the administration of polygraph examinations. While this sounds interesting some questions come to mind such as: What is the polygraph? Is it accurate? Is it admissible in court? How does it benefit us in the fire service?

The polygraph is a psycho-physiological detection of deception device. What this means is that there is a psychological component of this procedure. When you are about to take the polygraph there is a factor of the unknown that weighs on your mind. Even a seasoned polygraphist will have some anxiety prior to and during a test. There is also a physiological aspect of this test. This is what we see on television where the components are attached to the person being examined. These components measure respiration, skin conductance or sweat gland activity, blood pressure, and in some case the opacity or transparency of the skin.

The entire procedure consists of three parts and usually lasts approximately three hours. First, a lengthy and in-depth interview is conducted. Following this interview the physical examination is conducted. This physical examination usually takes approximately fifteen to twenty minutes. At the conclusion of the physical examination the results are evaluated. The examiner then makes a determination based upon the totality of the procedure. Using a validated scoring system the procedure is assigned a numerical score. A determination of deceptiveness is made. Following the physical test the examinee is advised of the results and a post-test interview is conducted.

Is the polygraph accurate? The polygraph field much like fire investigation has grown leaps and bounds in the past ten to twenty years. Much like concrete spalling and crazing of glass in fire investigation, the polygraph field has had to overcome scientific hurdles. The disciplines are scientifically validated. As no test is perfect in the medical field the same is true in polygraph. The various tests used have accuracy rates from the high eighties to the mid-nineties.

In regards to courtroom admissibility, New Mexico is the only state in the U.S. that allows polygraph charts to be admitted into criminal court. While the physical charts are not admissible in court within the Commonwealth of Massachusetts, the pre- and post-examination interviews are. We have current polygraph examiners with the Massachusetts State Police who have testified numerous times in open court to polygraph examinations they have administered. The federal courts are more receptive of polygraph charts, but are still limited. Civil courts allow admission of polygraph charts.

How does the polygraph affect the fire service in the Commonwealth of Massachusetts?

Having a trained polygraphist in the Fire and Explosion Investigation Unit provides fire investigators with another tool. In addition to years of experience and thousands of hours of training in fire and explosion investigation, accelerant detection K-9s, evidence collection, photographers, videographers, a top-notch laboratory for analysis of fire evidence, we can now provide the opportunity to determine the deceptiveness of witnesses and/or suspects within a timely manner.

Interviewing witnesses and evaluating their statements with the evidence from the forensic fire scene examination is key to determining a fire's cause. Often there are many people to be interviewed, stories are contradictory, and witnesses seem less than reliable. The polygraph is a great tool to gauge whether or not to believe what people are telling you about the fire. When might you want to call for a polygraph examination? When the fire investigation team has an arson fire or one where arson cannot yet be ruled out. Consider an arson fire in a home. During the course of the investigation, the team does not believe the homeowners are involved, but want to officially rule them out as suspects. This is where the polygraph can assist the investigation. The homeowners can be examined and ruled out or, if they are deceptive, the investigator knows that maybe the homeowners need a closer look, or the story they provided needs more scrutiny.

Fire investigators can access this resource through the State Police member of the Fire and Explosion Investigation Section working on the case.

Massachusetts Public Fire & Life Safety

Educator of the Year

The Massachusetts Public Fire and Life Safety Educator of the Year award recognizes individuals or teams for their involvement and commitment to making our world safe from fire or other preventable injuries. It honors people who demonstrate leadership, teamwork, creativity, vision and perseverance. The award is presented annually at the Massachusetts Public Fire and Life Safety Conference. Firefighters, teachers and those who work with seniors have been past recipients. The 2015 recipient of the award is Lieutenant David Evans of the West Newbury Fire Department and Assistant Principal at Pentucket Regional High School.

Left to right: State Fire Marshal Coan, West Newbury Fire Chief Michael Dwyer, Lt. David Evans, recipient of the 2015 Fire & Life Safety Educator of the Year Award, FF & Mrs. Evans, Pentucket High School Principal Jonathan Seymour.

Lieutenant Evans is a passionate and dedicated educator who loves to share his knowledge and commitment to safety with people of all ages. He is a lifelong educator who has worked as a soccer, basketball and softball coach, social studies teacher, and is now an assistant principal. He has been able to combine his love of education and public safety through the development of Pentucket High School's Safety and Public Service Innovation Academy. The Academy engages students in grades 7 -12 in a unique sequence of courses and industry certifications that equips them to serve communities.

The program has grown significantly since its inception three years ago. Beginning with 48 students the program has expanded to 240. The students take courses in public safety, forensics, literature and society, and justice. Students also teach fire and community safety at elementary schools and participate in job shadowing and internships. These students graduate with a clear path to chosen careers and are enrolling in EMT courses, joining local fire departments, and planning for post high school education having explored many fields. Some graduates of the Safety and Public Service Innovation Academy are hired by local fire departments and have gone on to attend the Massachusetts Firefighting Academy.

> The Safety and Public Service Innovation Academy engages students in courses and industry certifications that equip them to serve their communities.

Lieutenant Evans has developed many partnerships to support the Academy and his passion for education has influenced many fellow firefighters to train others. The Innovation Academy, is a model of creativity, resourcefulness and community partnerships that equips young men and women for service in their local community. The strength and success of the program owes a great deal to the capable Lieutenant Evans.

Other nominees recognized for their efforts in fire and life safety education were Swansea FF Richard Rego; Acton FF Brent Carter; and the Bridgewater Seniors First Team with members from the Bridgewater Fire Department, Bridgewater State University's Office of University Community Initiatives, The Home Depot, and the Bridgewater Office of Elder Affairs.

DFS Employees Recognized

For Years of Service and Pride in Performance

Each year, a committee of DFS staff selects full-time employees from among nominees for recognition with Pride in Performance awards. This year, the committee recognized three individuals for distinguished dedication and commitment to the mission of the Department of Fire Services. Governor Baker recognized the full-time employee award recipients at the State House on September 24, 2015. The Department of Fire Services recognized all recipients on October 6, 2015 at our Stow Campus.

The Stow event also recognized 80 full-time and contract employees who reached milestone years of service with the agency as of June 30, 2015. Each employee was awarded a certificate and pin for their continued commitment to the agency. Most notably, three employees, Fran King, Jim Devoll, and Richard Goddard were honored for 40 years of service.

Pride in Performance Recipients

Jim DiRico was recognized for serving as the DFS liaison during design and construction of the DFS Springfield campus. He has been a strong presence in design and construction meetings. Through his initiative with Value Engineering during the final design phase, Jim identified over $100,000 in savings with modifications. The savings were redeployed into the construction budget to allow important programmatic needs to be met. The enormity of the work related to the DFS Springfield campus cannot be overstated. Jim consistently worked 10-hour days on this project and his ability to bring sound input to the construction project while simultaneously ensuring successful operation of the Stow campus was extremely impressive.

Jim DeSimone was recognized for his instrumental role in the proposal, application process, and receipt of almost a half a million dollars ($496,956) in Assistance to Firefighter Grant (AFG) funding. This was the first year this grant was offered to training academies and Jim worked with internal divisions and the oversight granting agency to ensure a thorough proposal was submitted in order to achieve approval of these grant funds. Jim's attention to detail and understanding of grant requirements were key components that led to the approval of AFG grant application. DFS was able to replace 20 year old, obsolete self-contained breathing apparatus (SCBA) equipment for the Massachusetts Firefighting Academy. The SCBA's had to be replaced and the grant funds allowed the Commonwealth and DFS to preserve funding for day-to-day operations. This life saving equipment will have a major impact on daily operations at the MFA, in terms of safety, productivity and quality of training.

Barbara DiGregorio was recognized for taking a leadership role in the Fire Safety division's transition to the revised Comprehensive Fire Safety Code. Specifically, Barbara led the effort to revise all of the division's forms, licensing examinations, and exam study guides. Barbara meticulously reviewed every form, exam, and guide for accuracy of content and format. As a result of Barbara's careful attention to detail and persistence, the work was completed in a timely, accurate manner.

This year, the committee recognized three individuals for distinguished dedication and commitment to the mission of the Department of Fire Services.

Deputy Marshal Peter Ostroskey, PRP winners James DeSimone, Jim DiRico, Barbara DiGregorio, and State Fire Marshal Coan.

Massachusetts Firefighting Academy Graduations

Class #232

Class #233

Class #234

Class #235

Fire Investigation Programs

The Massachusetts Firefighting Academy 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 Coan 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

On September 24, 2015, 98 members of the MFA's Basic Fire Investigation course graduated. The graduates included 70 firefighters (one is also a local police officer and one is also a State Police officer), 25 local police officers and five Massachusetts State Police officers, and represent the following 87 agencies: Acushnet Fire & EMS, Amesbury Fire, Arlington Fire, Auburn Fire, Ayer Fire, Bedford Fire, Belmont Fire, Beverly Fire, Billerica Fire, Boston Fire and Police, Bourne Fire, Cambridge Fire, Carver Fire and Police, Chatham Fire Rescue, Chelsea Fire, Chicopee Fire, Clinton Fire, Centerville-Osterville-Marston Mills Fire, Devens Fire, Everett Fire and Police, Fairhaven Fire, Fitchburg Police, Framingham Police, Gardner Fire, Georgetown Police, Gill Fire and Police, Greenfield Fire, Harwich Fire and Police, Haverhill Fire and Police, Holyoke Fire, Lawrence Fire, Leverett Fire and Police, Lynn Fire, Lynnfield Fire and Police, Malden Police, Marblehead Fire, Marlborough Fire, Massachusetts State Police, Medford Fire and Police, Millbury Fire and Police, Newton Fire, North Andover Fire, Orange Fire, Oxford Fire, Peabody Fire and Police, Phillipston Fire, Raynham Fire and Police, Revere Fire, Sandwich Fire, Saugus Fire, Shrewsbury Fire and Police, Somerville Police, South Hadley Fire District 1, Southwick Fire, Spencer Fire and Police, Springfield Fire, Stow Fire, Sturbridge Fire, Swampscott Fire, Taunton Fire, Tyngsborough Fire and Police, Wakefield Fire, Waltham Fire, Wellesley Police, Westborough Fire, Westfield Fire and Police, Westford Fire, Wilbraham Fire and Police, Winchester Fire, and Worcester Fire.

The six-day basic fire investigation course covers witness interviewing, fire behavior, scene examination,

fire scene documentation, and evidence collection. The program covers unintentional fires, intentionally set fires, automobile fires, fatal fires and wildland fires.

Advanced Fire Investigation Course

On October 28, 2015, 22 members of the MFA's six-day Advanced Fire Investigation course graduated. The graduates included two local police officers, three Massachusetts State Police officers and 17 firefighters. They represent the following agencies: Cambridge Fire, Dracut Fire, Holyoke Fire Lawrence Fire, Lynn Fire, Lynnfield Fire and Police, Marblehead Fire, Massachusetts State Police, Randolph Fire, Salem Fire, Seekonk Fire, Swampscott Fire, Templeton Fire, Wakefield Fire, Wellesley Police, Westfield Fire, and Worcester Fire.

The advanced fire investigation course covers the concepts of fire behavior, scene examination, fire scene documentation, evidence collection, witness interviewing, and management of major fire investigations in more depth than the basic fire investigation class. It also addresses the legal issues of managing fire scenes, evidence collection, and concludes with practical exercises of participating in the courtroom process. Students give mock depositions and participate in both a mock grand jury and a mock trial.

Career Recruit Firefighter Training

The Career Recruit Firefighter Training program is 45 days long. Upon successful completion of the Recruit Program all students have met national 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.

Class #232

On August 28, 2015, members of Class #232 of the Career Recruit Firefighter Training program graduated. The 24 graduates, all men, represent the 15 fire departments of: Ashland, Bedford, Burlington, Devens, Easthampton, Lakeville, Melrose, Middleborough, North Attleboro, Northampton, Plainville, Westborough, Westfield, Weymouth, and Woburn. The guest speaker was Northampton Fire Chief Duane Nichols, a 28-year veteran of the department.

Class #233

On September 18, 2015, members of Class #233 of the Career Recruit Firefighter Training program graduated. The 23 graduates, all men, represent the 13 fire departments of: Attleboro, Concord, Dracut, Easton, Fitchburg,

Continued on page 17

Class #236

Class #237

Class #54

Class #55

2016 License Examination Schedule

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.

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 **www.mass.gov/dfs** and click on *Licensing* and *DFS License Look-Up.*

Testing dates below are for the first quarter only. The schedule is subject to change because testing procedures are being updated.

For information about licensing issues, contact the Licensing Desk by phone at 978-567-3700 or by email at dfs.licensing@dfs.state.ma.us.

License Exam Schedule

- Applicants must be pre-registered to sit for exams. Completed applications must be received by 5:00 p.m. on the deadline date listed below. Application forms are available at **www.mass.gov/dfs** then click on *Licensing.* If your application is received after the deadline, you will not be allowed to take the exam.
- All exams start promptly at 10:00 a.m. unless otherwise noted.
- License exams are given at DFS in Stow at 1 State Road, Stow, MA and at DFS in Springfield at 100 Grochmal Avenue, Springfield, MA. In Stow, please park in the remote lot at the top of the hill. Directions: **www.mass.gov/dfs**.

Examinations	Examination Dates All exams start at 10:00 a.m. unless noted	Deadlines for Applications
Fire Suppression, 10:00 a.m., Commercial Hood Cleaning, 2:00 p.m.	January 20, 2016 (Wednesday) March 23, 2016 (Wednesday)	January 4, 2016 (Monday) March 4, 2016 (Friday)
Cannon/Mortar, Fireworks, Special Effects, Blasting, Blasting R & D	February 24, 2016 (Wednesday)	February 5, 2016 (Friday)

State Planning Efforts for a

Highly Pathogenic Avian Influenza (HPAI)

In December, the Mass. Emergency Management Agency (MEMA) hosted a conference call with fire departments and other municipal officials to make fire chiefs aware of state planning efforts for a Highly Pathogenic Avian Influenza (HPAI) outbreak among birds, expected for this winter. This disease affects both wild and domesticated birds and requires, in the case of domestic agricultural birds (chickens, turkey, etc.), an immediate depopulation. This responsibility, under the state plan, has been assumed by the Department of Environmental Protection (DEP).

One of the accepted methods of depopulation is the use of medium or high expansion fire fighting foam. The DEP is purchasing foam for this purpose, or as replacement, but does not have foam generating and application equipment. The Department of Fire Services (DFS) has committed to assisting DEP in advance planning and identification of foam equipment through local fire departments. To be clear, such assistance (i.e. equipment loan) would be through agreement between DEP and the fire department and not through DFS.

Fire departments that are willing to support DEP through the deployment of foam equipment are asked to contact: Nicholas Child, Chief Emergency Planner; Massachusetts Department of Environmental Protection; Nick.Child@state.ma.us; (508) 965-6318.

MFA Graduations, *continued from page 15*

Hopedale, Needham, Reading, Shrewsbury, Turners Falls, Watertown, West Bridgewater and Westborough. Westborough Fire Captain Robert Rand was the guest speaker.

Class #234

On October 9, 2015, members of Class #217 of the Career Recruit Firefighter Training program graduated. The 23 graduates, 22 men and one woman, represent the 12 fire departments of: Abington, Clinton, Everett, Falmouth, Gardner, Greenfield, Hanson, Hull, Littleton, Saugus, Somerset, and Wrentham. The guest speaker was Everett Fire Chief David Butler.

Class #235

On October 30, 2015, members of Class #235 of the Career Recruit Firefighter Training program graduated. The 26 graduates, all men, represent the 15 fire departments of: Agawam, Ashland, Bourne, Boxford, Charlton, Clinton, Everett, Hyannis, Malden, Methuen, Northbridge, Peabody, Reading, Sharon, and Taunton. The guest speaker was Bourne Fire Chief Norman Sylvester Jr., a 33-year veteran of the fire service.

Class #236

On November 20, 2015, members of Class #236 of the Career Recruit Firefighter Training program graduated 22. The three women and 19 men represent the 11 fire departments of: Dennis, Holden, Hopedale, Hyannis, Lowell, Orleans, Scituate, Seekonk, West Barnstable, Winchester, and Woburn. The guest speaker was Hyannis Fire Chief Harold S. Brunelle.

Class #237

On December 18, 2015, members of Class #237 of the Career Recruit Firefighter Training program graduated 24 men. They represent the 18 fire departments of: Andover, Boxborough, Braintree, Clinton, Danvers, Easton, Hanson, Harwich, Lawrence, Lakeville, Maynard, Natick, North Andover, Raynham, Saugus, Taunton, Wayland, and Woburn.

Students must demonstrate proficiency in life safety, search and rescue, ladder operations, water supply, pump operations and fire attack.

Call/Volunteer Recruit Firefighter Training

Class #54

On November 4, 2015 in Easthampton, Massachusetts, members of Class #54 of the Call/Volunteer Recruit Firefighter Training program graduated having completed 320 hours of training on nights and weekends. The 32 graduates, 28 men and four women, represent the 18 fire departments of: Amherst, Belchertown, Chesterfield, Dalton, East Longmeadow, Easthampton, Granby, Great Barrington, Hadley, Hampden, Hatfield, Monson, Palmer, Richmond, South Hadley-District 1, Southampton, Ware, and Williamsburg.

Class #55

On November 5, 2015 in Stow, Massachusetts, members of Class #55 of the Call/Volunteer Recruit Firefighter Training program graduated. The 30 men and five women represent 19 fire departments: Ashland, Ayer, Carlisle, Douglas, Dover, Groton, Littleton, Lunenburg, Lynnfield, Millville, Northbridge, Paxton, Rutland, Sherborn, Shrewsbury, Stow, Webster, Westborough, and Westminster.

Fireground Air Monitoring, *continued from page 9*

data and, where possible, using advanced combustion modeling to refine the risk assessment, develop a monitoring plan and assist the incident commander in developing action plans to reduce risk and exposure, and to develop risk communication which may be the assurance that no substantial hazard exists to sensitive populations in the area. Recommendations may also include decontamination of firefighter protective ensembles and even apparatus.

Fireground air monitoring is a new science and a work in progress. While many fire departments are now monitoring smoke conditions for carbon monoxide and hydrogen cyanide, Massachusetts hazmat teams are taking safety to a higher level. This project does not end with current capabilities as the Hazardous Materials Emergency Response division is working with technology developers to improve instrumentation to detect and identify hazardous products of combustion (gaseous, vapor and particulate). Under current policy hazmat response capability is necessarily limited to large and high toxicity risk fires. Through the development of the science of fireground air monitoring, and the technologies to identify the hazards, we hope someday to put this capability in the hands of every fire department and perhaps every fire fighter.

For more information, contact the Hazardous Materials Emergency Response division of the Department of Fire Services at 978-567-3150.

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

www.mass.gov/dfs

DFS Public Awareness Campaigns

Smoke Alarms: A Sound You Can Live With

The Department of Fire Services has launched a new public awareness campaign on smoke alarms. The logo and tag line, ***Smoke Alarms: A Sound You Can Live With*** are designed for use by the Massachusetts fire service over the next decade for important smoke alarm messages.

Replace Aging Smoke Alarms

The campaign begins with new radio and television public service announcements (PSA) that focus on replacing aging smoke alarms (airing began December 1). The general public is not well informed about the fact that smoke alarms should be replaced after ten years. We will also place transit ads on buses across the state and in the MBTA, and electronic bulletin boards to promote the smoke alarm messages.

Toolkit for Fire Departments

The new campaign includes an online toolkit for fire departments to support local community education efforts. Fire departments can use the logo on their own materials, use the PSA, customize the opinion-editorial and local press release, and ask for space on local roadside message boards.

Updated Toolkit for Keep Warm, Keep Safe

Heating is the second leading cause of home fires in the state. The Massachusetts fire service has been promoting winter heating safety messages, including smoke and carbon monoxide alarm messages, since 2007, as part of the ***Keep Warm, Keep Safe*** (KWKS) public awareness campaign. As a result, heating fires have dropped 43%. The KWKS campaign toolkit for fire departments has been updated. The updated PowerPoint™ presentation is shorter, has up-to-date statistics, and is focused on the public as a target audience. The local customizable press release and op-ed piece are also updated. The campaign includes information in English, Spanish, Haitian Creole, Portuguese, Chinese, Russian and Vietnamese. ***Keep Warm, Keep Safe*** covers many important winter heating messages including: maintenance of furnaces, woodstoves and chimneys; safety practices for fixed and portable heating appliances; safe disposal of ashes, and smoke and carbon monoxide alarms. Television and radio PSAs are available for download. DFS will be airing the PSAs starting in January.

Cooking Fire Safety

Cooking remains the leading cause of residential fires, the leading cause of fire-related injuries and the leading cause of fire injuries to seniors. Our ***Cooking Fire Safety*** campaign has resources for fire educators, and a toolkit. The campaign has two main messages: ***Stand By Your Pan*** to address unattended cooking and ***Put A Lit On It*** to teach how to respond to stove-top fires.

Breathe Easy: Home Oxygen Fire Safety

DFS also has the ***Breathe Easy: Home Oxygen Fire Safety*** public awareness campaign. It includes a toolkit with resources for fire departments and health professionals to educate patients, families, and themselves about the fire risks of home oxygen.