

FIREHOUSE SUPPLEMENT

CANCER AWARENESS & PREVENTION

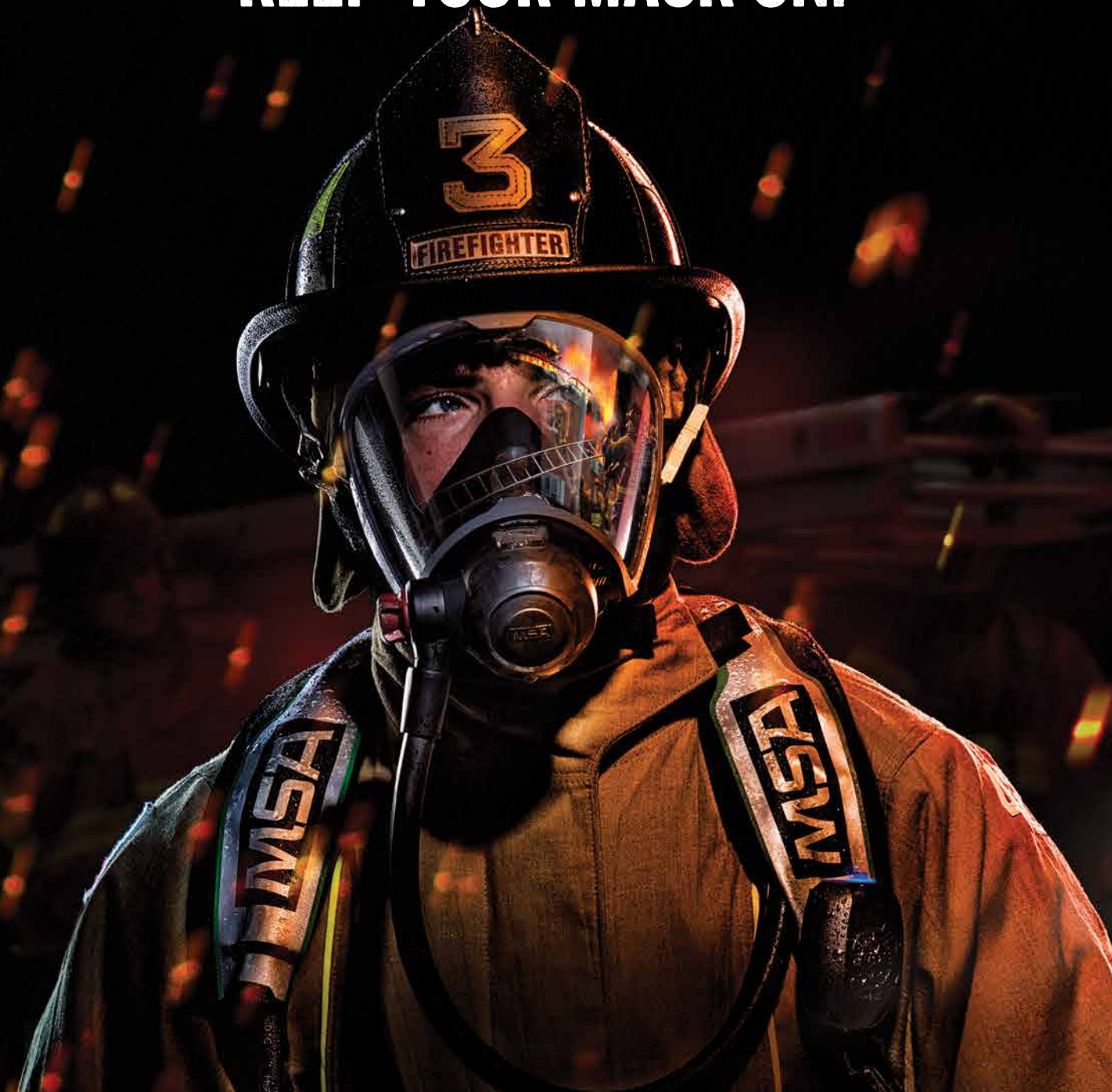


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Introducing the Firehouse Cancer Awareness & Prevention Project



It's my honor to welcome you to this month's supplement on Cancer Awareness & Prevention. There is no question that cancer has become an epidemic in the fire service—an epidemic that requires immediate action among all firefighters.

On Aug. 22, 2014, a close friend of mine, Battalion Chief Tod Heil of Savannah, GA, Fire & Emergency Services, was struck by cancer and taken from us far too early. Tod's actions and the way he performed exemplified what I consider to be a modern-day Superman in the American fire service. Unfortunately, the modern-day Superman met modern-day Kryptonite—cancer. Too many of us have shared this experience of losing someone close to us.

This supplement is designed to inform you about some of the ongoing research and projects that are out there to heighten the awareness of cancer in the fire service, and also the preventative measures that are being put forth. Los Angeles County Firefighter Mike Dubron, founder of the Firefighter Cancer Support Network, shares advice for navigating a cancer diagnosis. Captain Tony Stefani, founder and president of the San Francisco Firefighters Cancer Prevention Foundation, talks about the need for cultural change in the fire service as it relates to our chemical exposure risks. And Matt Vinci, director of education for the IAFF, addresses the role of advocacy in protecting firefighters from flame-retardant chemicals.

We are also introducing you to members of the fire service who have gone down that tough and difficult road in the battle with cancer. Captain Roderick Thompson of the Scottsdale, AZ, Fire Department underscores that cancer is nothing to be whispered about. Chief Dennis Compton, chairman of the board of directors for the National Fallen Firefighters Foundation, shares his journey with cancer and how his diagnosis changed his life. And Chief Jim Seavey, Sr., of the Cabin John Park, MD, Volunteer Fire Department looks at how the modern fire environment has changed and offers a powerful message to the newest generation of firefighters.

Through it all, we see that there is hope.

Take the time to read through this, share it with your crew, and then take immediate action to protect yourself and all the firefighters you work with each and every day.

On behalf of Firehouse, I would like to thank our Keystone Sponsor, MSA, and all of our Cornerstone Sponsors for supporting us with this project and helping firefighters stay safe each and every day.

— Firehouse Editor-in-Chief Tim Sendelbach



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NAVIGATING CANCER

Tips from a survivor about how to help patients and their families navigate the road ahead

By Michael Dubron



For the past 20-plus years, Dubron has been assigned to one of the Los Angeles County Fire Department Firehawk multi-mission helicopters.



Dubron (right) with his surgeon, Dr. Robert Beart, at USC Norris Cancer Hospital.

Like many in the fire service, I am fortunate to fulfill my appetite for the adrenaline we all crave—the ability to feed this hunger by responding to one person’s need in their time of urgency. I am a firefighter-paramedic with the Los Angeles County Fire Department. If that wasn’t enough of an adrenaline rush on its own, for the past 20-plus years, I’ve been assigned to one of the department’s \$20 million Firehawk multi-mission helicopters.

Through years of experience and training, we as firefighters master a feeling of control. 9-1-1 is called, and the process begins: Information is gathered, the appropriate resources are dispatched, and we respond. Regardless of whether we’re career or volunteer, we hone our ability to calmly process the information, and we develop the utmost confidence that we will be able to successfully mitigate the situation. Knowing that we can extinguish the fire, extricate the patient from the wreckage, provide medical assistance that often means the difference between life and death—yes, life and death—we have the ultimate feeling of control.

We often carry that feeling of control into many other aspects of our life. And if you’re anything like me, you know how much of the “control freak” aspect of our personalities can take over. But how much do we really control and where does it end? I found out on Feb. 6, 2003, and I remember it like it was 10 minutes ago.

Three words change everything

After having some medical issues and visiting a doctor, I lost that feeling of control in a matter of seconds. Three small words suddenly left me with a feeling of complete disbelief. How could somebody who, as mentioned, has such “control” of his life feel so helpless in a few seconds? Nobody had ever prepared me for something like this. My education never covered it, my training never included it, my parents never spoke of it, and now I was left to understand that I was no longer in control. Every bit of confidence I had ever built in being able to be there for others on their worst days

and abate their emergency—that ability to “control” a situation—was erased by the words, “You have cancer.”

I quickly had to take a crash course, “Cancer 101.” Many of those with whom I worked and shared my diagnosis, like me, had no experience with this or advice about what to do, where to go or where to turn. I was frustrated and found myself feeling alone on “Cancer Island.”

The situation turned worse when I was told during a doctor visit that my prognosis was one to three years to live. The cancer appeared to have spread to my liver. My confidence disappeared even further when the surgeon told me I should seek

Many of those with whom I worked and shared my diagnosis, like me, had no experience with this or advice about what to do, where to go or where to turn. I was frustrated and found myself feeling alone on “Cancer Island.”

other opinions because she had little experience with the surgery I needed.

But then something changed. With cancer now introduced into my life, I learned how many firefighters from just my own department had been through this disease. Two of the most respected members of my department who you’d ever want to meet were cancer survivors. Rick Mallyon, a registered nurse and paramedic educator, had the exact type of cancer I had, and Fred Chavez, a member of my own unit, had fought an incredible battle with cancer and survived. They both immediately became my “Cancer Best Friends.” I learned lessons from them that you usually only gain from experience—experience no one ever wants.

Plan of attack

As my two families—my family at home and my family at work—rallied by my side, I placed my trust in the hands of two incredible people at USC Norris Cancer Hospital. Dr. Robert Beart, my surgeon, and Dr. Heinz Joseph Lenz, my oncologist. After many hours of

debate about the best course of action, we decided on surgery on Feb. 23.

The staff at USC Norris was amazing. I wasn’t an easy patient to say the least. Dr. Beart’s nurse Yollee Casagrande has a heart filled with gold. After many trying days of recovery, I was able to go home.

This battle provided such ranges of emotion, from that feeling of having no control to anger to frustration to sadness. When Rick and Fred helped me deal with my own mortality, I suddenly realized how fragile I was, and at one point, weighing only 119 pounds, I felt like I was not going to win this battle; I felt like I was dying.

During my first visit back to Norris Cancer Hospital to see what my next step was going to be, I found another emotion. I don’t know if I can adequately describe in this limited space the feeling when Dr. Beart shared the results of my surgery and subsequent biopsy results. You can’t put it in any simpler terms than he did. I asked him if he saw the biopsy results. He turned and looked at me with all the confidence in the world—more confidence than I’ll ever know, as his experience includes operating on two sitting U.S. presidents—and he simply stated, “We got this.”

To say this had an impact on me and my life is an understatement. After a nine-month absence from work, I returned to full duty. I am the luckiest guy in the world. Maybe it isn’t just luck. Again, a feeling that’s difficult to describe, perhaps simply my new found title says it best: survivor.

Helping others navigate the course

If you’re a cancer survivor, you will probably agree that the worst time after diagnosis is knowing that you have cancer

and not knowing what you're going to do or your course of treatment. I called this period my "darkest hours."

The impact of being in a position I never thought about or imagined drove me to do something. I wanted to give back, much like Fred and Rick did for me. I was fortunate to know these two, but now, realizing the degree of cancer in the fire service, I wondered what I could do for other firefighters who weren't fortunate like me to surround themselves and get the support needed.

As firefighters, we are good at providing assistance but sometimes not really that good at receiving it, especially from outside our tight-knit fire service family. With that in mind, my idea was to develop a program where firefighter cancer survivors could be available to other firefighters, providing assistance when you're faced with a cancer diagnosis.

The concept formed legs and began to grow immediately. With the backing of my Local 1014 brothers and sisters, the Firefighter Cancer Support Network (FCSN) was born.

There is nothing better than being able to communicate with somebody who has already experienced what you are about to navigate. Being able to stay focused and understand that you're not alone on "Cancer Island."

The FCSN is able to share newly diagnosed firefighters with important tips about how best to navigate their medical experiences. For example:

- Take a friend in addition to your family member(s) to doctor appointments to serve as note-taker, as they will be better able to focus during potentially emotional discussions;
- Stay organized and maintain copies of all test results;
- Seek other opinions from doctors and cancer survivors;
- Track the pros and cons about treatment options in an organized manner;
- Make decisions about treatment options based on the facts you gather during your doctor appointments and talking to cancer survivors;
- Once you make your decision, move

forward, look ahead, keep your focus and don't look back; and

- Allow your family and friends to help, even when you feel like you might be imposing, as they want to help, and allowing them to do so helps fill emotional gaps for everyone involved.

How do you help a firefighter in one of your firehouses who has been diagnosed? Although everyone will require a different approach, there are some simple ways brother and sister firefighters can help. For example:

- Set up drivers to transport the patient to and from doctor appointments;
- Help secure baby-sitting or similar help;
- Provide/cook meals for the family so they don't have to worry about it;
- Send cards and letters in the mail.
- Consider setting up a specific method of communication (e.g., text/phone trees, social media) to share information, but only if this is OK with the patient, as it is vital to respect their wishes related to how much information they want to share;

SURVIVOR STORY

"We Have to Do Everything We Can"

— Captain Roderick Thompson

Roderick Thompson is a 33-year veteran of the fire service, currently serving as a captain with the Scottsdale, AZ, Fire Department. In December 2016, doctors discovered a mass on his kidney, which was likely cancerous. After surgery in February 2017, pathology reports confirmed that Thompson had renal cell carcinoma. The surgeon reported that they were able to remove all the cancer, making Thompson both a cancer patient and survivor in the same day. Thompson returned to full duty in mid-April 2017.

How Has Cancer Affected Your Life?

Cancer has affected me quite tremendously. It was something that was totally unexpected—it really caught me and those around me off guard—but it's given me the opportunity to really reflect to find a better meaning and to help me redirect myself and to realize that there's a bigger cause out there that I can hopefully impact. There's a lot of work being done to help reduce cancer in the fire service.



- Handle yard work and other miscellaneous duties around the house, and make these visits positive and comforting; and
- Ask the patient whether they want to talk about cancer and if the answer is “yes,” listen closely.

For me, when I was facing one to three years to live, I wanted to know that my fire service family would take care of my family. This was invaluable information to me. And you have no idea how much it meant to me reading those cards and letters while I was in my “darkest hours.”

FCSN can help

The FCSN has grown throughout the United States, Canada and around the world. Our mission has evolved from providing assistance to all active and retired firefighters, including their families, to also promoting cultural changes in the fire service.

Change is a difficult process, especially among firefighters. We need to arm ourselves with the best protections to reduce our degree of exposure



to deadly carcinogens. These changes seem simple in theory, however, difficult at times in application. If these changes sound too difficult, perhaps remember what I shared about my darkest hours, when I learned that I had only one to three years to live. That meant not seeing my daughters grow up, not spending time with loved ones and leaving behind so much life yet to live. Change really isn't that difficult when the result is so rewarding.

The FCSN has been on the forefront of promoting a culture change and providing assistance to those diagnosed, and I

couldn't be prouder of what I started, the volunteers who spend countless hours supporting a vision is a reward to myself, every cancer survivor, and those we have lost, like my Cancer Best Friend Rick Mallyon. I am proud of my titles, one a dream and one the result of a battle I never thought possible: Firefighter and Cancer Survivor.

I ask you to enlist in the many supporters of our mission, get involved and make a difference. The result in helping others is a feeling money cannot buy. Be proud of who you are and what you do. If you or someone you know needs assistance or if you're looking for educational materials and would like to be a part of our family, please connect with the FCSN. ■

MICHAEL DUBRON is a 26-year career veteran with the Los Angeles County Fire Department, serving as a firefighter-paramedic crew chief in Air Operations. He was diagnosed with cancer at the age of 39. After a nine-month absence, Dubron returned to work and later established the Firefighter Cancer Support Network (FCSN), a program where firefighters and their families could get assistance and support after receiving a cancer diagnosis.

What Have You Learned So Far Through Your Experience with Cancer?

Nobody's alone. There's a tremendous support network out there for folks in the fire service who have cancer. Just about everyone in the fire service, if they don't have cancer, they know of somebody who has cancer, so it really impacts the entire workforce. Being able to connect with other people is really critical and to realize that there are educational opportunities out there. The most comforting part of my journey has been knowing that I am not alone in this. The support that I've had, both internally and externally, has been absolutely tremendous.

What Has Been the Driving Force in You to Battle and Win Over Cancer?

The driving force in me is that's just how I'm wired. As most folks in the fire service, we're high-speed, low-drag people. We're competitors, and losing is not an option. Whether my future purpose is to do more work on the fire truck or to devote more energy into helping others who have cancer, that's what we're here for is to help people.

How Have You Used What's Happened to You to Help Others?

Through conversation and support. Just being able to reach out,

pretty much from a walking-in-their-shoes kind of perspective. Each individual who goes through their journey—it's an individual deal for them, but it's nice to be able to connect with somebody else who can at least say, “Yes, I've been through at least part of that, so I can help you navigate through some of it.”

What Life Changes Have You Made as a Result of Your Experience with Cancer?

Just being more aware of my surroundings. Priority changes. Stuff that used to not be so important is hugely important now, and the opposite—stuff that I thought was really, really important, you realize it's not. There's nothing more important and precious than life.

What Is Your Call to Action Going Forward?

To educate everybody out there that this deal about cancer in the fire service is nothing to be whispered about; it's something to stand on top of the mountain and really yell. It's just about an epidemic. It's impacting everybody, and we have to do something—everything that we can—to prevent it from impacting the next generation of firefighters.

Thank you to Albert Pedroza of San Antonio Fire Department for his work on this project.

Time for a Cultural Change

Accepting the magnitude of the chemical exposure risks

By Tony Stefani

Pride, honor, tradition—three words that form the backbone of the entire firefighting profession. Traditions live long and can create resistance to cultural change. But over the last 40 years, the firefighting profession has gone through many cultural changes. The biggest effect of this change has occurred in major metropolitan departments.

A very broad and simple way to define culture in the firefighting profession is patterned ways of thinking based on traditional and historical ideas. These learned behaviors, handed down from one generation of firefighters to the next, are deeply embedded, and change does not come easy in a profession that prides itself on these shared assumptions.

One of these “shared assumptions” was handed down to me when I entered the San Francisco Fire Department (SFFD) in the early 1970s. Nearing the end of my probation, having been passed up on pump operations, I was given the opportunity to put my skills to work driving and operating the engine company to which I was assigned.

On my first watch as a driver in this downtown company, I was pulled aside by the regular driver and told, “Don’t let any engine company beat us in to a working fire.” I was aware of the drill: If you are first due, be sure you arrive on the scene first; if you are second due, beat out the first-due engine company. That race no longer takes place. That small cultural facet transitioned into a “common sense” cultural change that was enforced by disciplinary action. If you blew a red light or drove recklessly fast to a working fire, you had to face the consequences. I’m sure this change has saved lives.

A new enemy

We are now faced with one of the most important cultural changes in the his-

tory of the firefighting profession. This one cultural change can and will have a profound effect on the health of firefighters. This change encompasses a multifaceted approach to reduce toxic chemical exposures on the fireground, in the firehouse and in our everyday lives in order to reduce the cancer epidemic currently facing members of our profession.

This one cultural change encompasses a multifaceted approach to reduce toxic chemical exposures on the fireground, in the firehouse and in our everyday lives.

When the San Francisco Firefighters Cancer Prevention Foundation was formed in 2006, we knew that we had a major problem on our hands. We seemed to be attending funerals on a monthly basis for firefighters who had succumbed to this insidious disease.

At Station 1, where I was the captain of Rescue 1, five firefighters contracted transitional cell carcinoma (TCC), all within a six-year period. TCC is a common form of bladder cancer. A rarer form of TCC (1 in 100,000 diagnosed) is found in the kidney. Two out of the five of us had that cancer. I was one of them.

I am sorry to say three out of the five have since lost their lives to TCC.

Seeking data

We tried to gather statistical information about elevated rates of cancer in

our profession but found very few science-backed studies. We contacted the Department of Urology at the University of California, San Francisco (UCSF) and told them about our concerns with TCC. They were extremely concerned about our statistical information.

In conjunction with the Department of Urology UCSF, we put together our first major study and screening. We screened over 1,200 active and retired firefighters. During the screening, we identified two retired firefighters and one active firefighter with TCC. The study, written by Dr. Kirsten Greene, one of the principal investigators of the study, was published in *The Journal of Urology* in 2008. This was our first step to show a direct correlation between our profession and elevated rates of cancer.

What changes were being made at that time to reduce toxic chemical exposures in our department? The answer was basically none.

We funded another study in 2012 to look at the blood chemistry of 12 firefighters after two separate working fires. The study showed extremely high levels of polybrominated diphenyl ethers (PBDEs) in the blood of all 12 firefighters. These are organobromine compounds that are used as flame retardants in a wide array of products. The PBDE compound that was found at high levels was decabromodiphenyl ether. The EPA has classified this congener as a possible human carcinogen. This was another eye-opening warning that major cultural changes had to be made in order to reduce toxic chemical exposures.

San Francisco has the largest group of female firefighters (well over 200) of any major metropolitan city department in the United States. Among our 40- to 50-year-old female firefighters, we are seeing breast cancer rates that are six times



FROM THE CHIEF

“Fires may look the same as years past, but building materials and furnishings contain countless new and extremely toxic chemicals. There is no denying it. Firefighters are dying and there is a direct link between the exposures and the disease.”

— San Francisco Fire Chief Joanne Hayes-White

The San Francisco Firefighters Cancer Prevention Foundation has embarked on a mission to change the way firefighters consider their on-the-job exposures to toxins.
Photo by Josh Jacobson

the national average. A first-of-its-kind study is currently underway looking at the blood chemistry of 80 female firefighters compared to 80 female office workers in San Francisco. Preliminary results will be published shortly.

The final study that drove home the necessity for change was the National Institute for Occupational Safety and Health (NIOSH) Fire Fighter Cancer Study, which began in 2010 and concluded in 2014. It looked at the causes of death of a cohort of close to 30,000 firefighters from San Francisco, Chicago and Philadelphia, dating back to 1950. “The results showed higher-than-expected rates of certain types of cancer than the U.S. general population.”¹ The findings showed that firefighters were at higher risk of digestive, oral, respiratory, urinary system cancers and twice the rate of malignant mesothelioma. The direct correlation was also made with the amount of time spent at fires and an increased rate of lung cancer diagnosis or death, as well as an increased chance of leukemia with the number of fire runs.

Shifting perspective—and actions

Cultural changes began to take shape, but old habits die hard. In San Francisco—and I am sure we are not alone—there is still a lack of continuity among chief officers in charge at working fires to enforce wearing SCBAs throughout extinguishment and overhaul operations as well as air monitoring and to ensure that gross decontamination takes place. This information was gathered after talking to many chief officers in the field. Although most incident commanders do their best to see that the firefighters are protecting themselves, there are still some officers who pride themselves on being in the thick of it with no protection. The problem here is that they do not understand or accept the magnitude of the problem we are facing as a profession; for some, there is a degree of denial.

Let’s consider the importance of wearing an SCBA during overhaul operations right after the fire has been extinguished.



Several best practices, including cleansing the face and body, have been identified for reducing and hopefully eliminating toxic exposures. Photo by Dwayne Newton

I am sure we all realize that the contents of a typical structure fire is no longer a simple combination of wood-based products and natural materials. Every fire now must be treated as if it is a hazardous materials situation, as there is off-gassing of a multitude of toxins, including asphyxiants, acid gases, organic irritants, particulates, and of course the proven carcinogens of benzene, isocyanates, PCBs, polycyclic aromatic hydrocarbons (PAHs), dioxins, furans, arsenic, asbestos, formaldehyde, etc. What is even more disconcerting is the synergistic effect of these toxins and the possibility of their toxicity level increasing exponentially.

The toxic exposures that the men and women of our profession are now faced with are causing rare forms of cancers at younger ages. The so-called “badge of honor” that has been associated with a soot-covered face, a black toxic film covering the helmet and turnout gear, have been identified through scientific studies to be another vehicle to cause cancer for an extended period of time long after leaving the scene of a fire.

The 15–20-year latency period for contracting cancer is no longer a factor in the determination of a workers’ com-

pensation case in San Francisco. If a firefighter contracts cancer after five years of being on the job, they are now covered.

We all now know what must be done. There have been numerous papers published with the proper steps to follow during and after any fire situation to reduce and possibly eliminate toxic exposures. Departments must become proactive and establish solid guidelines that are rigorously enforced at every incident.

One department that seems to be leaps and bounds ahead of everyone else is Boston. Per the NFFA Journal article “Facing Cancer” by Jesse Roman: “For years, Boston Fire had a well-deserved national reputation for

being stubborn, old-school and needlessly resistant to change, often to the detriment of its members. In many companies, wearing self-contained breathing apparatus was optional or even seen as a sign of weakness. Leadership didn’t seem to value personal protection, and the machismo prevalent in so many departments, where soot-covered smoke-eaters were regarded as the bravest and baddest of all firefighters, was rampant in Boston Firehouses.”²

Now leading the charge to protect its members is Fire Commissioner Joseph Finn. With financial support from the city and backing from union president Richard Paris, they have established a “full-court press” to limit a firefighter’s exposure to cancer-causing chemicals. Finn has established a Safety, Health and Wellness Division within the fire department to oversee and establish guidelines to protect its members.

Individual responsibility

The hard science is done. The direct correlation to toxic chemical exposures and high rates of cancer in our profession has been established. Several best practices have been identified for all departments to take advantage of to reduce and hopefully eliminate these exposures. But at this point, the bottom line rests with each individual firefighter to take their own

personal responsibility to be sure that they are protected.

In the month I wrote this article, the SFFD has lost retired Division Chief Bill Shaughnessy, Division Chief Dennis Callahan, Battalion Chief Dave Haberlin and Lt. Larry Conrad to cancer. This has to come to an end. ■

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TONY STEFANI started with the San Francisco Fire Department in 1974. The 28-year veteran retired as the captain of Rescue 1 in 2003. He has an associate's degree in fire science, is a blackmask certified diver and holds a number of technical rescue certifications, including surf and cliff rescue and served as an instructor for Rescue Systems I and II. After being diagnosed with Transitional Cell Carcinoma in 2001, he founded the San Francisco Firefighters Cancer Prevention Foundation and now serves as president.

SURVIVOR STORY

"I Love Life, But I Hate Cancer" *By Chief Dennis Compton*

It was in July 2012 when I arrived for my annual physical. My blood work had been completed ahead of time, so I was all set to complete my physical that day and move along for another year. But fate had another plan.

Although I wasn't experiencing any symptoms or problems, my doctor was concerned about one of my lab results, so he suggested that I follow up with a specialist. The test result that drew his attention was actually within the "normal range," but it was elevated compared to my physical a year earlier.

My initial evaluation with the specialist was in August, and he found a small tumor. He too was somewhat (but not significantly) concerned, and scheduled a biopsy in September just to be as thorough as possible. The results of the biopsy came back a few days later and, of course, I received a follow-up phone call from the specialist. I was taken by surprise when he began to explain that I had cancer and would require intervention—sooner rather than later. Seventeen of the 20 needle biopsies he had taken came back from the lab as malignant.

During the next couple of months, it was literally one test after another, as my wife, family and I prepared for what we knew would be an invasive surgery and a long process. That surgery took place on Dec. 12, 2012. I was down for the count for about a month and a half, but thought I would bounce back quicker than most. But I was wrong. My surgeon said it could take as long as a couple of years before I was back to my normal self. I admit that I scoffed at his prediction, but he wasn't that far off. I was active during that recovery time, but didn't have the energy or stamina I had previously enjoyed.

So on I went into the cycle so many other cancer patients I knew had gone through in one form or another. For the first three years after surgery, I was screened every 90 days. The next two years, the screenings were every six months. Now, after recently completing my five-year cancer screen, the cycle will be once a year for the rest of my life.

There aren't any signs that I have cancer at this time, and for that, I am truly blessed. I think everyone gets a little anxious when it's time to go in for their scheduled cancer screen, and that was heightened when my very first screen after surgery (March 2013) was a false positive. It took a while to confirm the "false" part of that result, which was difficult on me and my wife. We chose not to



tell the rest of the family until the test could be re-administered and the results confirmed. Thank God I was clear.

I consider myself one of the fortunate ones (so far) when it comes to my cancer experience. The course of action we selected (although radical) seems to have been the right decision. The support my wife and I had from our family, friends, doctors, hospital staff, the Phoenix and Mesa fire departments, as well as both unions, the National Fallen Firefighters Foundation (NFFF), the International Fire Service Training

Association (IFSTA), the Congressional Fire Services Institute (CFSI), and the fire service as a whole, was incredible. The cards and emails wishing me well meant a lot—and the prayers provided by so many were heartwarming. It was more than anyone could have ever asked for, but that's the fire service! We don't necessarily expect all that support, but we sure appreciate it!

Like so many firefighters I know who have been diagnosed with cancer, mine was found during an annual physical. Again, I was not experiencing any symptoms. In fact, I didn't begin to have symptoms until just a couple of weeks before my surgery.

As the research continues to show, the rate of certain cancers is significantly higher in firefighters than within the general public. We in the fire service need to do all we can to prevent exposures, train our firefighters and provide a means for them to be monitored annually for occupational diseases (such as cancer) throughout their careers, and even into retirement.

Once a person is diagnosed with cancer, life as they knew it changes. It's not only a life-threatening experience at the time, but the road ahead, with all the tests, surgeries and treatments, can be very difficult as well. I'm not sure you ever get over cancer, because even when it's no longer in your body, it remains in your memory, concerned that it might return.

But I found that there is good that came from my cancer experience. Life is more precious; time has more value; love is more treasured; friends and family are more appreciated; priorities seem to have shifted; and the definition of what constitutes a "big deal" definitely changes. I love life, but I hate cancer!

Chief Dennis Compton is chairman of the Board of Directors for the National Fallen Firefighters Foundation.

The Advocacy Element

The role advocacy plays in protecting firefighters from flame-retardant chemicals

By Matthew Vinci



When flame retardants burn, they produce a toxic black smoke that contains furans and dioxins. Photo courtesy UL Fire Safety Research Institute

Flame retardants are everywhere—in the couch in your fire station, the chair in your living room, the mattress pad in your child’s daycare. Plastics, wiring, foams, fabrics and insulation are all likely to contain flame retardants. We are all exposed to these chemicals in our homes and offices, day and night, every day.

When flame retardants burn—and they do burn—they produce a toxic black smoke that contains furans and dioxins. Furans and dioxins are known carcinogens, immune suppressors and endocrine disruptors

that pose much greater health hazards to firefighters than the general public. Firefighters, who are routinely exposed to the byproducts of burning consumer products, have disproportionately high levels of four cancers associated with dioxin exposure: testicular cancer, melanoma, brain cancer and esophageal cancer.

A Duke University researcher tested 101 couches purchased between 1984 and 2010, and found that 85 percent of the couches contained harmful flame retardants. Chemicals tested in this study include chlorinated tris (TDCPP), listed as a carcinogen by California in 2011,

polybrominated diphenyl ether (PBDE), globally banned due to toxicity and environmental persistence, and Firemaster 550, which studies have associated with obesity.

Despite claims by chemical manufacturers, the way that flame retardants are used in household products does little or nothing to limit the spread of fires. But as long as residential and commercial buildings have furniture containing flame retardants, firefighters will continue to be exposed to the toxic carcinogens they produce during combustion, putting their health and safety unnecessarily in danger.

In California, which represents one of the largest economic markets for furniture manufacturers, the use of flame retardants in upholstered furniture and other products containing polyurethane foam dates back to 1975, when California adopted and mandated Technical Bulletin 117, an open-flame standard. Almost 40 years later, in 2013, California adopted Technical Bulletin 117-2013, a smolder standard that more closely replicates how residential fires most often start, and that now allows upholstered furniture to meet this fire safety standard without the use of flame retardants.

This change has had a very positive impact for consumers. Most U.S.-based furniture manufacturers and retailers have now moved to distributing and selling furniture that does not contain flame retardants. However, imported furniture remains an issue and is known to contain flame retardants that have been phased out of use in the U.S. because of safety concerns. In addition, many hospitals and healthcare facilities across the country have pledged to only purchase flame-retardant-free furniture for their facilities. While these developments are positive, furniture made with flame retardants is likely to remain in people's homes and healthcare facilities for decades, leaving firefighters at risk. Moreover, the U.S. furniture market is still not 100 percent flame-retardant free.

Studying firefighter exposure

Dust in fire stations is also a source of exposure to flame retardants, according to research by the International Association of Fire Fighters (IAFF) and the California

Department of Toxic Substances Control Laboratories. Recently, the IAFF collected dust samples from vacuum cleaners used to clean fire station living quarters in New York, Minnesota, New Hampshire, Texas and California. The IAFF is currently conducting a similar study of dust in firehouses across Canada.

Dust residue inside fire stations contain flame retardants that are transported back from the fireground and adhered to apparatus and turnout gear. Once brought into the fire station, dust can remain and accumulate on walls, fabric and other surfaces, becoming a continuing source of exposure. When dust is disturbed, it can recirculate, re-exposing personnel in the

Despite claims by chemical manufacturers, the way that flame retardants are used in household products does little or nothing to limit the spread of fires.

fire station. Flame retardants contained in dust can be absorbed through the skin, inhaled or ingested, and can accumulate in the systems of the human body.

The IAFF study also tested fire station dust for five organophosphate flame retardants (OPFR) used as substitutes for organohalogen flame retardants that are being phased out due to the overwhelming evidence of toxicity. OPFRs are used in furniture, plastics and electronic equipment. Unfortunately, some of the OPFR chemicals are proving to be at least as toxic as the chemicals they are replacing. Some are considered to be carcinogens, and others are linked with a range of other health concerns.

The results of the IAFF dust analysis found that the median level of flame retardants, including both legacy flame retardants and replacement flame retardants, in fire station dust from the participating fire stations is significantly higher than levels found in the dust of other occupational sites, including dust samples from airplanes, electronic waste sites, offices and residences.

One commonly used flame retardant in particular—TDCPP—was found at levels equal to or above some of the legacy flame

retardants. TDCPP (aka chlorinated tris) is considered a carcinogen by California Prop 65, which was enacted in 1986 to help Californians make informed decisions about protecting themselves from chemicals known to cause cancer, birth defects or other reproductive harm.

Further, research is being conducted by the Illinois Fire Service Institute (IFSI), the National Institute for Occupational Safety and Health (NIOSH), the UL Firefighter Safety Research Institute (FSRI) and Skidmore College on cardiovascular and chemical exposure risk in today's fire service, which focuses on potential fireground exposures to chemicals, including flame retardants.

For the study, samples of furnishings and other materials used in two bedroom fires were collected and analyzed for chemical composition, including flame retardants. Bedroom fires were ignited in an upholstered chair, which led to flash-over and complete involvement of both rooms. During this time, samples were collected from the air to allow researchers to characterize which flame retardants can be carried and deposited on firefighter turnout gear.

Some of these compounds can also deposit on unprotected skin (including potentially through PPE interfaces) or be inhaled by those outside the structure who may not be wearing SCBA. Contamination on the PPE can be transferred to the skin while doffing PPE, to the apparatus while transporting back to the station, or to the station itself, depending on transport and cleaning protocols. Urine and blood samples were also collected from firefighters to determine if the contamination is present in the body and how long it may remain.

Final results are pending and in review, but some initial findings are featured in the *Firehouse* September issue supplement "10 Considerations Related to Car-



diovascular & Chemical Exposure Risks,” produced by IFSI, UL and NIOSH, and sponsored by Globe (firehouse.com/12361314). One key from the initial summary of this important study found detectable levels of flame retardants in the air and on PPE surfaces during and after the fires, which could potentially lead to firefighters having higher biological levels of flame retardants than the general population.

Making changes

Several state and local IAFF affiliates have been actively engaged for more than a decade in lobbying lawmakers to reduce the use of and lower the exposures to chemical flame retardants. To date, 13 states have banned PBDEs and/or chlorinated tris, two widely used flame-retardant chemicals that are found in children’s products and residential

furniture. Additionally, several states are considering actions that encompass an even broader range of flame retardants. But as PBDEs are phased out, they are being rapidly replaced by other flame retardants, some of which are yet to be tested for their effects on human health.

The legislative fight to remove flame retardants started in Washington State in 2005 and quickly moved across the country to several statehouses. Maine’s recently passed legislation is the strongest to date, with a complete ban on selling furniture that contains any flame retardants. The first such law, it establishes a new national precedent in banning all—rather than a specific class—of flame retardants.

Both Boston and Washington, DC, have led proactive changes at the local level. Boston will now allow upholstered furniture that does not contain flame

Detectable levels of flame retardants in the air and on PPE surfaces were found during test fires, which could potentially lead to firefighters having higher biological levels of flame retardants than the general population.

retardants in commercial buildings with automatic sprinkler systems. Washington, DC was the first city to enact a ban on specific classes of flame retardants. And in San Francisco, the Board of Supervisors just passed a similar legislative initiative to ban flame-retardant chemicals from all furniture and children’s products.

The IAFF is also supporting two petitions pending before the U.S. Consumer Products Safety Commission (CPSC). The first would ban the entire class of organohalogen flame retardants in upholstered furniture, children’s products, mattresses and plastic casings used in electronics. Filed in 2015, this petition is supported by a broad coalition, including the American Academy of Pediatrics, the Learning Disabilities Association of America, Consumers Union, Consumer Federation of America, and Worksafe.

On Sept. 20, 2017, the U.S. Consumer Product Safety Commission (CPSC) voted to grant the IAFF supported petition to begin the rulemaking process to ban the sale of four categories of consumer products if they contain any organohalogen flame retardants.

IN THE FIGHT

“You Have to Protect Yourself”

—Chief Jim Seavey, Sr.



Chief Jim Seavey, Sr. is a 42-year veteran of the fire service, currently serving as the chair of the Cancer Committee for the Volunteer & Combination

Officers Section of the IAFC, co-chair of the Cancer Subcommittee for the National Volunteer Fire Council (NVFC) as well as the fire chief for the Cabin John Park, MD, Volunteer Fire Department.

How Did You Learn that You Had Cancer?

I had been noticing that I had been sleeping a lot more. I went from a 35-year career, including my volunteer time, of sleeping 3–4 hours as my normal amount of sleep to sleeping at least 12 hours a day almost overnight. I had a full physical. Blood work, everything came back normal. I was fine. I went another month, my lymph glands started popping on my neck, both front and rear, so I went for a biopsy.

Five days later, my wife called me and said, “Call the doctor, he wants to talk to you about your biopsy.” I called him and he said, “I hate to tell you this, but you have malignant lymphoma. You have low-grade Stage 3 non-Hodgkins.” That changed my life forever, and you can’t take it back.

The vote is an exceptional victory, and the first time a federal agency has moved to prohibit an entire class of toxic flame retardants in order to protect Americans from chemicals linked to cancer and other health problems.

The move is also major a step forward in protecting firefighters from the hazards posed by this class of flame retardant chemicals. When consumer products containing these chemicals burn, the fire and smoke become more toxic. Firefighters have a much higher risk of suffering the negative, cancer-causing effects of carcinogenic flame retardants, as those chemicals burn in a fire.

A second petition before the CPSC would adopt the smolder standard in California Technical Bulletin 117-2013 as the national standard for testing upholstered furniture. In addition, ASTM—an international standards organization—is currently developing a smolder standard for upholstered furniture equivalent to California TB 117-2013. Both implement a toxic-free approach that achieves fire safety without the application of flame retardants.

However, the National Fire Protection Association (NFPA) is actively moving, much to the delight of the chemical companies that make flame retardants, to develop a new open-flame standard for upholstered furniture—an antiquated

testing method that does little to achieve fire safety. In its current draft, NFPA 277 would create a new large open-flame test that would add more flame retardants back into the marketplace, creating additional exposures for firefighters and the public. This standard—to be adopted at the local and state level—would take us back years in the work that has been completed to remove these harmful chemicals and reduce exposures to firefighters and the public they serve.

Chemical industry lobbyists continue to submit that some flame-retardant chemicals are not harmful and that new emerging chemistry is on the horizon. Yet, years later, firefighters are still exposed in their homes, fire stations and at exceptionally high rates on the fireground. It's the compounding exposures that greatly impact firefighters. Growing evidence is demonstrating that due to the nature of firefighting work, firefighters inhale, ingest and absorb flame retardants. Several studies in animals and humans have found specific flame retardants to cause serious health issues.

What can firefighters do?

Clean and clean again. Wear SCBA during knockdown, overhaul and other activities where exposure to products of combustion is likely. Fire departments should conduct decontamination proce-

dures of PPE during post-fire operations by washing PPE with a wet soapy solution and rinsing with water.

In addition, the cleansing of the skin with wet wipes or soap and water after the removal of PPE is critical. The hands, neck, face and any area of exposed skin not covered by station wear should be cleaned immediately. If contaminants are left on the skin, they may be absorbed in the skin. Upon return to the station, firefighters should shower to remove all debris from the skin.

PPE should be bagged after decon at the fire scene. Place the bagged PPE in a compartment rather than in the cab when returning to the station. All turnout gear, fire hoods and gloves should be laundered to prevent the spread of contaminated particulates throughout the station. These precautions will reduce the exposure to contaminated particulates. ■

MATTHEW VINCI is the director of education for the International Association of Fire Fighters (IAFF). Prior to coming to the IAFF, he served for 15 years on the Executive Board of the Professional Fire Fighters of Vermont, where he successfully passed several pieces of legislation in the Vermont Legislature to increase the protections and benefits for Vermont firefighters, and funding and resources for the Vermont Fire Academy. Vinci serves on the NFPA Fire Tests Committee and has been very active with regulation and legislation surrounding toxic flame retardants at the local, state and federal levels for over a decade. He graduated from New Hampshire Technical College in 1991 with an associate's degree in fire science.

When your body changes dramatically, in any regard—hunger, weight, sleep—something is wrong, and it's telling you something and you've got to go get it checked out. Don't stop with the traditional physical. There were a couple tests that weren't in the blood work tests that would have revealed it, but they weren't part of a standard physical.

How Has the Fire Environment Changed Since You Started Fighting Fires?

I started in 1976 and I was taught that we could easily go into a fire and get it knocked down without having to worry about a mask, and of course at that time, masks/SCBA were limited. Now when I go into a fire, you immediately recognize the irritation to both your nose and throat, and it's beyond the kind of irritation you would get with a real deep inhalation of paper and wood smoke. This is very carcinogenic off-gassing and toxic gases, including the CO of the smoke, so it's certainly now suicide to not don your SCBA.

What Is Your Message to Younger Firefighters?

You have to protect yourself. As a safety officer, I routinely saw people who sent their same set of gear out for cleaning when we provide you the opportunity to clean both. We have primary and secondary sets, as we do in my volunteer department. And we have two cleanings per year for the sheer fact of cleaning one set, then the other. I noticed there was a propensity with many of the firefighters to send one set out all the time, so they could keep the "salty" set. And they also knew that if they had 10 years, it was not coming back; it would be condemned. And at 10 years, you have really broken in a coat—that's a comfortable set of PPE, and you hate giving it up to break in a brand new set. But the bottom line is we're trying to save your life. And the quicker you learn that, the better off you'll be. I think people like myself need to go around this country and tell our story and impress upon the new firefighters, the younger generation, that it's very, very easy to prevent this if you use everything you are provided.

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Firehouse would like to thank the following sponsors for their support of this important project to help educate members of the fire service about cancer awareness and prevention.

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Supporting Our Partner Organizations
 Firehouse would like to acknowledge the exceptional work of its two partner organizations on this Cancer Awareness & Prevention supplement: The Firefighter Cancer Support Network and the National Fallen Firefighters Foundation's Fire Service Occupational Cancer Alliance. Both organizations are leading the charge in the fight against occupational cancer in the fire service, providing unparalleled support and resources to firefighters who have been diagnosed with cancer. In support of their tireless efforts, Firehouse has donated \$1,500 to each organization.

For more information about these organizations, please visit:

firefightercancersupport.org firstrespondercenter.org

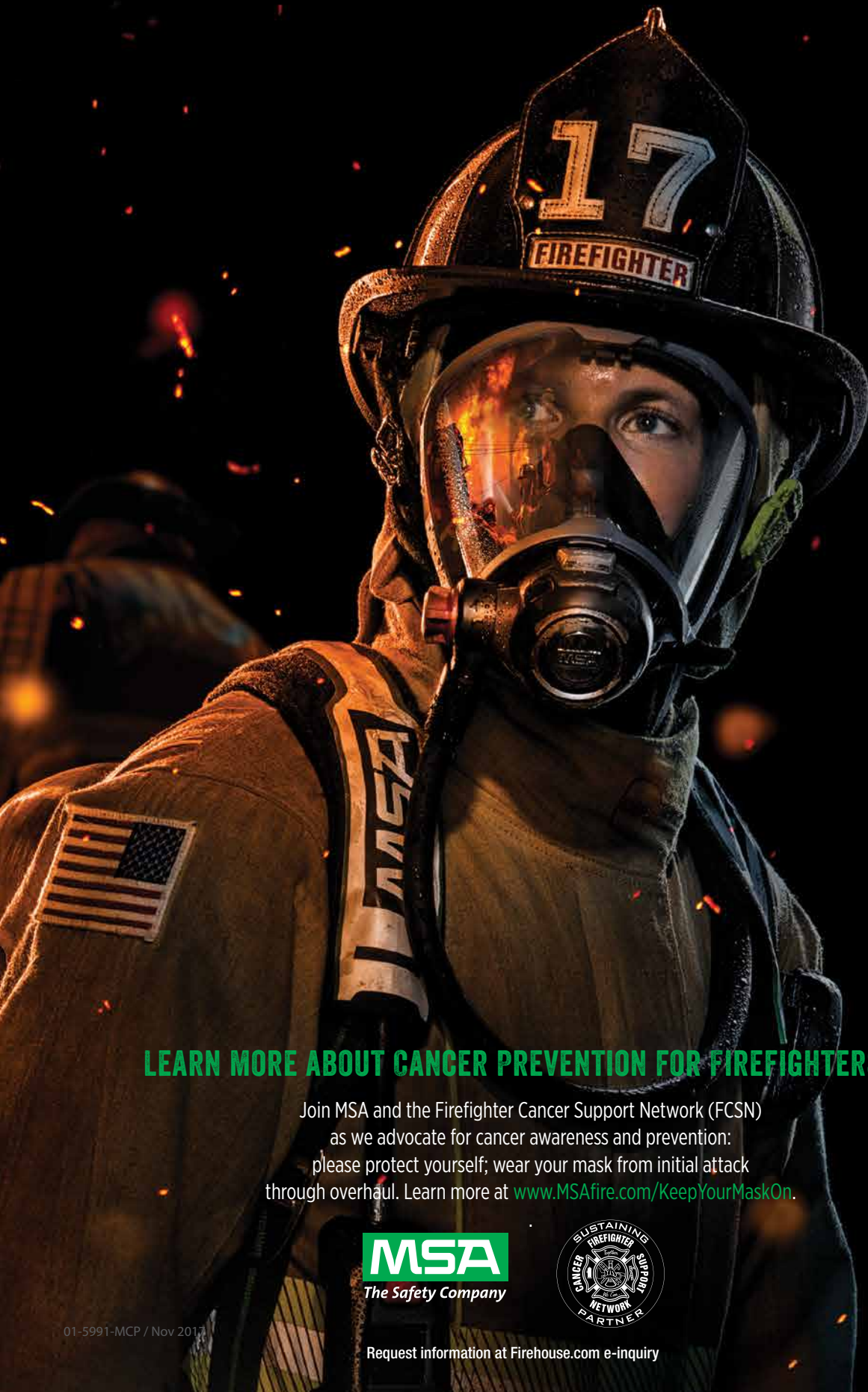
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