This year we are proud to announce the 2nd Annual Guardians of the Ribbon Charity Golf Tournament to be held July 19, 2013 at the beautiful Mt. Ogden Golf Course in Ogden, Utah. All proceeds will benefit the Midtown Clinic. Midtown Clinic is a local clinic that assists with ALL women’s cancer screenings and education. They have locations in both Weber and Davis counties.
Each year, I conduct Critical Assessment Meetings at the Utah Fire and Rescue Academy (UFRA), and in doing so, I have the opportunity to meet with every full-time and part-time staff member. The goal of these meetings is not to identify what we are doing right but what we are doing wrong in terms of product, process, and/or procedures. The most important feedback comes from UFRA’s operational folks, who are the “backbone” of our organization. They have the opportunity to tell me what the problem is and what the solution is from their perspective, which is the most important and the perspective I don’t get to see very often. The Critical Assessment Meeting is a key piece of the puzzle when I conduct a SWOT (strengths, weaknesses, opportunities, and threats) analysis.

Since we are the state fire training academy in Utah, have a dedicated funding source, and have no rival state academies, many feel a SWOT analysis may not be necessary. I disagree. I believe public organizations, like our private sector partners, have products, ours being training and certification. Public organizations, like our private sector partners, plying basic business models to our organizations.

Staff: Without a doubt the strength of our organization is the people that work here. Their dedicated service to the firefighters of Utah cannot be overstated. The Training Division is staffed with retired and working fire service professionals. The average career service time as a firefighter is over 25 years for those retired; they’ve played almost every position within the fire service with most retiring as Chief Officers. The Certification Division is equally dedicated to ensuring the competence of Utah firefighters; validation of knowledge, skills, and abilities is their number one priority. Their hard work on a daily basis provides our ability to remain accredited by both IPSAC and Pro-Board. The Support Services Division is the unsung hero of our success and without a doubt our “hinge-point”. They are responsible for ensuring that assets are delivered upon return, and all equipment is in running order. Publications and Grants are “mission critical” by assuring that our website is operating for our customers, that the support services division provides UFRA with a unique opportunity for success compared to other state training organizations. Next issue, UFRA’s weaknesses will be addressed.

Stay safe,
Hugh

Hugh Connor was hired by the Orem Fire Department in 1979 where he worked for 27 years. He served as a Firefighter/Paramedic, Engineer, Lieutenant, Captain, and Battalion Chief. Connor has worked at the Utah Fire and Rescue Academy since 2005.

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Firefighters and Cancer Issues – Part I

A few years ago, the Utah Fire Service undertook an effort to expand the line-of-duty coverage to include 17 varieties of cancers that seemed to be a much higher rate of incidence in the fire service profession as compared to the general population. Initially, the data being used was based upon a cancer study conducted primarily back East. Efforts were undertaken with our legislature to fund a study by the University of Utah to see what the Utah experience might be in comparison with national studies. Information went out and both active as well as retired firefighters were asked to respond to a question on whether they were often exposed to carcinogens. Yet, recently, a Tri-Data Cancer and Fighting report that came out through the National League of Cities contradicted some of the assertions that there is a link between cancer and firefighting. In our line of work, we are often exposed to carcinogens. Yet, recently, a Tri-Data report that came out through the National League of Cities contradicted some of the assertions that there is a link between cancer and firefighting.

Most studies have shown that there is a link between cancer and firefighting. In our line of work, we are often exposed to carcinogens. Yet, recently, a Tri-Data report that came out through the National League of Cities contradicted some of the assertions that there is a link between cancer and firefighting. There are several key preventative measures that we need to take in order to protect ourselves and our crews. One of the first things I would like to discuss is the importance of self-contained breathing apparatus (SCBA) and turnout gear. It also is important to maintain that gear. Often in the fire service dirty gear is a badge of honor - the dirtier the gear, the more experience you show as a firefighter. But we now understand that maintaining our gear and keeping it clean is very important.

Also, we now have many fire departments participating in having diesel exhaust removal systems and removal system hoses attached to the apparatus itself. It is also very important to participate in wellness exams, such as the Wellness Fitness Initiative, which is endorsed by the IAFF and the IAFC. Firefighters should get an annual wellness exam; that exam, if they are diagnosed with cancer, is one’s chance of survival.

I realize that cancer isn’t a topic that we often discuss or talk about, not even around the kitchen table, but it is important to keep informed. In part two of this topic, I will provide some ways that we can work toward improving our risk factors, such as eating better, or if you are diagnosed, some support mechanisms to help you through the battle.
ABC’s and Shock

ABC’s and Shock-Shock-Shock are gone now or modified so much as to not be recognizable by many of us in the EMS community. Twelve leads are back (yes, done in SLC in the early 90s), and some agencies are now carrying antibiotics with septic protocols.

Are you ready for change or just letting the new blood be held to the standard? In EMS it seems, for sake of improvement or as a profit-generating tactic every two years by publishers, change will continue to come. What is really important is what you are willing to do with such a dynamic field. Even if it appears cyclic, like in the case of magnesium and calcium, we must remain vigilant in the direction of patient care.

I was asked to exit the room to discuss something of concern to the physicians. Once outside, the two doctors asked me, “What were you thinking, pacing an asystolic heart?” I explained it was part of the new protocol options, to which they both stated, “I guess I’ve got to read that stuff again.” As I thought about their title and position in the ER, their statement identified a need to stay on top of the game. Regardless of position, none are immune from this responsibility. One significant area of change coming, and certainly deserving of some attention, is the Health Care Reform.

Recently the Supreme Court upheld the constitutionality of the Affordable Health Care Act by a 5-4 vote and essentially changed the future of EMS in some very significant ways. Although, in the 17,000+ pages of the report, EMS is mentioned only a handful of times, the impact for EMS is significant and is just now starting to be seen as we prepare for the future.

The future of managed care, related to the Affordable Health Care Act, will likely involve EMS in various ways. Some of the most striking changes will relate to a cooperative venture between healthcare organizations and local providers. As hospitals will find reimbursement issues related to chronic care patients difficult (especially when returning within three days for the same complaint), development of a cooperative venture between hospital services and EMS seems to be a likely direction. This new care plan could possibly include, among many other things, basic physical exams, follow-up visits on recent admits, and other general field care conducted outside the hospital. This will require EMS professionals to be skilled in assessing common and chronic illness patterns, not just urgent calls. This new responsibility will be well beyond what I learned as a medic. As fiscal responsibility is ever more a concern to citizens and administrations, cost recovery and funding will place even greater emphasis on this collaborative effort of the future.

A great example of this is a call I experienced involving a young female with difficulty breathing. Upon arrival, we found her in an asystolic rhythm, with only a history of shortness of breath. As the call developed, it was obvious to us that the patient had more than likely developed a pulmonary embolism (PE), and as per current (at the time) protocols, we attempted to pace the asystolic heart. Arriving in the ER, the doctors, who were personal friends of mine, displayed great trust in the crew regarding the care and actions in the field when discussing the outcome with the family. Yet, at some point in the process, I was asked to exit the room to discuss something of concern to the physicians. Once outside, the two doctors asked me, “What were you thinking, pacing an asystolic heart?” I explained it was part of the new protocol options, to which they both stated, “I guess I’ve got to read that stuff again.”

Combining the unexpected urgent calls with the follow-up needs of the community will establish a new breed of paramedic. Regardless of your current role in an organization, if you are involved in EMS it will necessitate your increased involvement in new protocols, treatment modalities, and broadened scope of practice.

This new direction in paramedicine, often labeled as Advanced Practice Paramedic (APP), or Community Paramedic (CP), is designed to match specially trained paramedics with the most sensitive patient care populations. The training will prepare paramedics to meet the needs of some high-risk populations and provide alternative care plans (in conjunction with medical oversight) for patients who may be better served at locations other than local hospital emergency rooms. The APP or CP will also engage in preventive home visits designed to decrease medical crises and improve the overall well-being of patients. APPs may also work with mental health agencies to identify and place patients and substance abusers in facilities more appropriate for their care than the emergency department.

According to the CLOSUP Public Sector Excellence Database, “The combination of these specialized skills have resulted in an efficient team of practitioners that improve emergency response care, lessen the need for some EMS responses, and facilitate the right care for some citizens that may otherwise be ‘lost in the system.’”

As you can see, changes in the future far exceed the movement of ABC to CAB, or stacked shocks to continuous CPR. Remaining aware of changes is great; yet planning for the future is even better. Start now with a goal to ramp up in order to meet the challenges that drive EMS. Prepare scholastically to be in a position to attend courses forthcoming in Critical Care and Advanced Practice whether in this state or another. On a smaller scale, remember the doctor’s statement of “I guess I’ve got to read that stuff again.” Revisit the standards that you have and make sure they are current and up to date. Review the protocols in your community to ensure that you are acting within guidelines; and never hesitate to step up, when given the opportunity, to put all those years of experience to good use.

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Overhaul, Not Rekindle - Part 2 of 2

Several years ago, I ran a public service call to check on a fire that had been extinguished. Plumbers working in the basement laundry room of an apartment building accidentally set a floor joist on fire while soldering a copper pipe. The plumbers extinguished the fire but wanted to have the fire service inspect the area. To access the pipe, the plumbers had opened the drywall ceiling about one square foot, the fire within had been small and did not seem to have extended. It appeared that the fire had only burnt about a six inch square piece of the floor joist. When using the thermal imager it detected that there was only a small amount of heat.

The concealed area above the ceiling still had some smoke that needed to be cleared, so I requested a truck company to vent the space with an electric fan. We opened the hole to inspect the damage and used a pressurized water extinguisher to cool the charred area. The truck vented the plenum space and the smoke was removed. The fan was used to cool the charred area. By now the area opened up was about five square feet and we still had not found the source of the smoke. I was starting to get concerned and told the crew to go and pull a hand line to the basement. The truck crew above found nothing and the fan was started again. After two minutes, the fan was shut down and the smoke returned.

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Across the room, Firefighter Davin Bridges noticed a small brown stain on the ceiling about fifteen feet away from our hole. Our thermal imager showed the area was hot. We opened the ceiling to discover a lint-filled dryer vent pipe and two burning floor joists sandwiching the vent. We quickly removed the ceiling and put this fire out. This fire was completely separate from our original call from the plumbers. Had the plumbers not set the original fire, this other fire may have burned undetected for hours. We could have easily checked the original small fire, found nothing, and left.

Generally, start overhaul where you think the fire may have extended unnoticed or concealed. It may be safer to work from the outside edges of the burned area towards the center. This way the building itself should be more structurally sound. If any weak areas are found then the IC and the person in charge of the task must be notified. This way the weak portion can be announced to all persons operating in that vicinity and the dangerous area can be cordoned off. To prevent injuries to firefighters or cause more damage to the structure, utilities (water, electric, and gas) in the area need to be controlled and shut down.

If there is any furniture such as a couch, mattress, or overstuffed chairs in the fire room, these items should be moved to the outside. One deep-seated hot ember embeded into furniture can smolder unnoticed for hours and ignite long after leaving the scene. Trust me, it happened to me. Luckily, I had moved the couch to the outside the first time, but we did have to return to extinguish it again several hours later. If there is a need to move any damaged furniture down an elevator, make sure to take a pressurized water extinguisher with you in the elevator.

Using four of your five senses can assist with basic overhaul:

- **Sight** - look for blistering paint, smoke patterns, or dark brown smoke after extinguishment.
- **Smell** - concealed fires give of a distinct strong odor.
- **Touch** - feel for heat behind walls, floors, and ceilings.
- **Hear** - is fire crackling behind a floor, ceiling, or wall?

Do you hear any change in building stability such as creaking or shifting structural components?

After any working fire, it is not uncommon for crews to periodically do a drive by and inspect the premises every few hours; this is especially true where fire investigators are not on scene. I have done the same on odor calls where I could not find anything and later lightning strikes. If you get a gut feeling that something is not right, go with it. Nobody will second-guess you if you’re doing the right thing. You may run hundreds of fires and do a great job, but if you have a rekindle this will be the one remembered. Stay on the scene a few extra minutes to make sure the fire is completely out; it’s good for you and the public we serve.
So, you have made a commitment, to yourself and others, that you’ll take your department’s next promotional process. You know the time and effort needed to prepare will be nauseating. You, your family, and your friends will suffer to some degree. How does one make sure his or her time preparing for such a process is spent toward giving the best chance possible at success? If nothing else, hopefully this article gets you to start preparing now rather than later.

The second you finish reading this article, create a realistic calendar from today until the test date. Detail what you will study and for how long. For example, day one may read: “Practice tactical for one hour and study for written for one hour.” Hang a copy of your preparatory calendar at both your firehouse locker and on your home refrigerator.

Five typical parts to a promotional test are written examination, tactical, in-basket exercise, role-play, and executive interview.

1. Written Examination: A year prior to the test, assemble resources that may be used in the written exam and start studying. Once a resource list is made available, assemble all of your test resources and eliminate the materials that will not be part of the process. Don’t worry; your head start will pay off.

Using index cards allows you to separate the stuff you know from the stuff you don’t know. It’s an evolving process. Some of the things you know now may you forget… index cards allow for ease of adding that stuff back into the pile. The real secret to using index cards is reviewing the test material early and creating your index cards months before you actually start studying. Half of test success depends on removing the intimidation of sheer volumes of information.

Make digital recordings of the material early as well. Recordings are the one type of media you can access when you don’t have free hands. Try running or exercising while listening to the recordings. You may find you absorb more information when your mind is reaching for something to think about other than pain.

2. Tactical: Can you “take” a hydrant? Of course you can. ridiculously easy, right? Now take a hydrant at a working fire with a news camera filming you. Not as easy, is it? Half of your tactical success lies in preparing to do what you already know how to do in front of a critical audience.

Try this: Get some dry erase markers. Have your wife, child, friend, dog, or whoever sit as in your audience. If he or she doesn’t know anything about incident command just give the instruction to rate your overall command presence (he or she may think of this as demeanor). Now, in front of the audience, using dry erase markers on a large mirror, draw out a tactical worksheet, apparatus placement, etc. You can’t help but improve your performance using this method. You’ll be far more critical of yourself than any audience will be.

Practice tacticals while driving in your car: take a mental snapshot of a building you pass. Go from start to finish regardless of how painful it is. The first hundred tacticals you run this way will be a disaster unless you are an absolute natural. Don’t worry, practice makes perfect.

Acronyms help bail you out when your mind goes blank. Learning them and practicing using them months before the test. One helpful acronym is “FLIP-FLOP-LIST”.

FLIP: Tactical priorities of Firefighter safety, Life safety, Incident stabilization, and Property conservation.

FLOP: Expanded organization including Financial, Logistics, Operations, and Planning. You’ll at least want to let the rating board see that you understand this concept.

LIST: Command Staff including Liaison Officer, Public Information Officer, and Safety Officer. The “T” is for “Team” so you can remember your Command Staff as a team.

Learn all fire ground factors, as well as other acronyms like RECEO and REVAS. Create a system that you are comfortable with. All TAC sheets have an assignment portion. Tracking resources is vital. Draw through completed assignments and add an arrow at the end of the strike through, pointing to the new assignment after a resource has been reassigned. This serves as an immediate reminder of where each resource is.

3. In-Basket Exercise: Just another way of saying you’ve been off work for a few days and a pile of paperwork awaits you in the form of notes, letters, post-its, and other communiques. Don’t panic; you will have time to get to it all if you proceed properly. First, review each piece of work and label as either priority 1, 2, or 3. Start with the absolutely must get done stuff or priority 1.

Time management is everything when completing your in-basket workload. After you’ve prioritized your work, complete a quick rough draft or brainstorm of sorts for the lengthier projects. This helps get thoughts together for the formulation of letters, allowing the opportunity to review all the work without getting in too deep initially. Sometimes pieces of the in-basket exercise fit together after a bit of closer review. For example, maybe a partial report is linked to a letter that needs to be written or a damaged equipment incident report.

Develop a table of contents to make in-basket exercise grading a breeze for raters. Number all pages and have them in order behind the table of contents. Not all raters will work hard to uncover your work, so make it easy on them.

4. Role Play: The goal of role play is to see how you will behave as a supervisor when trouble comes your way. You may be confronted with a whiny employee, a know-it-all, two employees not getting along, a drug blank, and a co-worker; what did you do? If you could change anything about this department, what would it be? What is a personal weakness of yours?

You get the picture. Don’t lose points in a promotional process because you didn’t take some time to consider commonly asked questions. Become well versed in answering all these questions in a sincere way. In other words, saying a weakness of yours is that you are a perfectionist may not go over too well. Be real and don’t be afraid to admit a weakness. It’s perfectly okay to explain steps you’ve taken to overcome your particular weakness.

One last bit of advice. Promotional processes start the day you come on the job. You should consider each day at work as another opportunity for your department’s vision, goals, and values. Stray from these and you are worsening your chances. Live by them and your time spent preparing and participating in the promotional process won’t be wasted. If you give it your all and don’t like what you think you should have, be proud of your effort.

Promotional exams are filled with the most competitive of sorts and a bad day is often just that. On the other hand, if you don’t give it everything you’ve got, you’ll never know how well you could have performed.

Promotional Examination 101

Paul Hewitt began his career as an Orem City reserve firefighter in 1987. After 20 years with the Salt Lake City Fire Department he served as a Fire Chief in Arizona before his 2011 appointment to Fire Chief of the Park City Fire District.
**RETIREMENTS:**

Paul Wheeler has retired after 36 years as a volunteer firefighter with Springfield Fire and Rescue.

South Davis Metro Fire Chief Jim Rampton began his career 27 years ago as a part-time firefighter with South Davis Fire District (SDFD). During his career he also served as full-time firefighter with West Valley City Fire Department. Rampton became a full-time firefighter with SDFD in 1993, he was then promoted to deputy chief with the merger of SDFD and Bountiful City Fire Department since Jan. 15, 2010. Rampton retired from North Davis Fire District since March 3, 2013.

DEATHS:

Robert Pendleton, born on June 29, 1951, passed away on March 3, 2013. Pendleton retired from the Salt Lake County Fire Department after 30 years of service.

Mike Valdes, born on October 14, 1975, was a Police Officer with West Valley Police Department. Valdes passed away on March 21, 2013. An account has been set up for donations for Valdes' family, funds can be donated to the Mike Valdes Memorial account at America First Credit Union.

Bronze Star Recipient, Specialist Cody James Towsle, was killed in action in Afghanistan on May 14, 2013. Towsle graduated from Salem Hills High School in 2010 and at 18 became an EMT. He worked as a volunteer firefighter and EMT for Elk Ridge City. Towse had aspirations to become a Life-Flight Medic.

Scott Freitag has been named the Director of the new consolidated 911 center for the Salt Lake City 911 Bureau. Freitag has served with the Salt Lake City Fire Department for 16 years.

Edward (Ted) Black has been promoted to Chief Deputy at the Utah State Fire Marshal’s office.

Brent Hafen was sworn in on April 3rd as Washington City’s new chief. Hafen was previously a Captain with St. George Fire Department and had served with that department for 19 years.

Mark Beavert was appointed to Fire Chief of North Davis Fire District in May and brings with him 27 years of fire service experience. Beavert previously retired as deputy chief of Roy and has been with North Davis Fire District since Jan. 15, 2010.

To submit a Fire Mark please contact Andrea Hosley at andrea.hosley@uvu.edu.

**PROMOTIONS:**

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When Lightning Strikes: How Yellow Flexible Corrugated Stainless Steel Gas Pipe is a Risk

by Steve Lutz

Lightning is Utah’s number one weather-related killer; it has killed 48 individuals since 1950. In the U.S. lightning hits the ground more than 25,000,000 times a year while also causing about 7,216 annual house fires, according to the U.S. Fire Administration.

A new trend has emerged, linking lightning with damage to Corrugated Stainless Steel Tubing (CSST), which is used as natural gas and propane piping. CSST has become popular due to the ease of installation when compared with traditional black iron pipe. Unfortunately, the very feature that makes it popular makes it dangerous: light weight flexibility. The tube can be bent easily because it is thin walled (.004 in.) and corrugated. Since CSST is thin walled, the extreme current load of lighting arcing, to or from the tube, can easily burn a hole and release flammable gas. The yellow plastic covering provides virtually no protection from a lightning-caused arc.

It is uncertain whether any fires in Utah have been caused by direct or nearby lightning burning through CSST. Nor is it known whether any fires have been made more severe by released gas from this source. One thing is certain, however: lightning protection, proper bonding and grounding of CSST can help prevent a disastrous leak.

The Utah State Fire Marshal, in cooperation with the National Association of Fire Marshals, urges all property owners with buildings and/or homes constructed with yellow CSST after 1989 to have the tubing checked for proper bonding and grounding; encouraging that these systems be checked by a qualified and licensed electrician.

Licensed electrical contractors should be contacted to make the correct determination on proper bonding of the system. Costs associated with performing this inspection and potential repair vary between service companies. It is suggested to compare prices for this service before selecting a company to perform a safety check of your system.

Sidebar story:

Investigation of a fire caused by CSST and lightning requires a uniform approach. The physical properties of CSST give the product a high melting point. Stainless steel is not prone to melt during a fire. If a hole is found in CSST after a fire, the source/cause of the hole needs to be determined. The American National Standards Institute (ANSI) LC1 specifications for CSST (in terms of material and thickness) are so uniform that there should be no substantive differences among the CSST brands as to the way they are damaged by lightning. One can find statistical differences in a length of CSST after a lightning storm, and the arcing was not caused by energized wire contact, then the only other cause of failure is lightning insult. Thus, all other causes of the fire can be reasonably eliminated other than the lightning strike itself. There are no other conditions that can mimic this same physical evidence.

“It to find holes, we recommend an instrumented leak test at ~ 7 WC air. One end of the CSST should be plugged, and each hole sequentially plugged (with modeling clay) until the CSST no longer leaks. One of the holes we found in a CSST investigation was in an area of tubing where the polymer coating had no fire damage... Three other holes on this same length of CSST occurred in areas where heavy pyrolysis to the coating had occurred... As in any fire investigation, the leaks and subsequent fire development must support the area of origin, or the leaks would appear to be of little consequence” (Goodson, Hergenrether, 2006).
The Madrid Arena tragedy has once again highlighted the absolute need for emergency response plans that are up to date and involve personnel well versed in their use, writes George Potter.

Costumes and ‘trick or treat’ are the order of the day, or better said, evening, of the American traditional feast of Halloween. In recent years, the celebration of this American export has taken hold in numerous countries, including Spain.

The music concert held in the Madrid Arena multiple-use theatre was projected to be the outstanding celebration in Madrid the night of October 31st, 2012. Tickets had been on sale for weeks previously and the spectacle promised to be outstanding entertainment for young pop and rock music fans. What no one ever considered was the possibility of a panic situation that resulted in four deaths and dozens of injured spectators.

The Madrid Arena is a facility designed for a wide range of public attraction events such as exhibitions, concerts and sports events. Several major tennis competitions have been held there in recent years, as well as basketball tournaments and boxing matches, although the most frequent use is for music concerts.

The facility was built in 2002 in a circular format, with massive glass panels making up most of the exterior enclosure. Total floor space is approximately 30,000 square metres. Spectator areas are two levels of retractable grandstands surrounding the ground floor on four sides. A temporary stage is normally installed for music concerts and similar events.

As this particular event was programmed as a DJ music concert (no live bands), the floor area was conditioned for spectator occupancy. According to the proprietors – the Madrid city government through a public management entity – the facility has a total, legal capacity of 10,600. Some estimates indicate that at the time of the stampede that caused the three on-site deaths and the death three days later of another critically injured young girl, there may have been as many as 20,000 persons in the Arena.

Another young woman who had also been trampled in the stampede survived in a deep coma for nearly a month, and died due to irreversible brain injuries on November 29th, bringing the death toll to five.

Spanish legislation is relatively stringent in regards to access to this kind of event – at least on paper. This legislation included design and construction features that would facilitate the evacuation of spectators, emergency response plans that contemplate mass evacuation, access control including spectator age verification and contents of large handbags and knapsacks, personnel adequately prepared to organise and control evacuation and of course, compliance with capacity restrictions. In this particular incident however, compliance with existing legislation was most notably lacking.

Senior Spanish emergency service officers, most notably in the areas of high tourist presence, ‘dread’ these specific months as over-occupation is the real norm in discos and similar locales, where age controls at entrances is literally nil and alcohol and quite often drug consumption are rampant. It is quite well known that a number of these establishments use the over-crowded conditions as a form of ‘come-on’ to attract yet even more public. The emergency services can only hope that nothing ever happens, as their political superiors give them little or no support in their efforts to enforce the corresponding applicable occupation densities.

The event and tragedy

This particular concert was by the American DJ Steve Aoki, who attracts public as if he were a top ranking musician or singer. The organiser of the event was a Madrid-based entertainment promoter with a long history of dubious activities including attempts to re-open the infamous Alcala 20 disco that suffered an 82-death fire in 1983.

This promoter is also in debt with the national Social Security system, a situation that (supposedly) should impede contracts with public sector entities such as – in this case – the Madrid municipal government.

According to municipal spokespersons, the city police were present to control possible problems with the several thousand youths outside the Arena participating in a new pastime called ‘botellón’, in which hundreds or even thousands of teenagers (and older) form large groups drinking beer and other alcoholic beverages in streets and parks, in reaction to the high costs of drinks in pubs and similar localities.

A private security company contracted by the management company had an undetermined number of security guards present to control access to the Arena area, while yet two additional entities, contracted by the organiser, were supposedly responsible for controlling actual access to the interior of the Arena, including age...
verification (minimum age 18) and control of contents of handbags and knapsacks (for alcohol, weapons, etc). Neither of these controls were performed according to numerous witnesses. It also appears that the personnel of these enterprises lacked any preparation or formation in organising and controlling mass evacuation.

At approximately 04:00 Thursday morning, a serious blockade caused apparently by the invasion by several hundred participants in the “botellón” outside the Arena provoked a near-panic situation in a passageway. Unable to move in any direction, the agglomeration of people provoked many people to slip and fall and the subsequent trampling of these by still more people trying to get away from the area.

Some 20 minutes later several flares were launched from somewhere in the mass of spectators. Initially the flares were suspected as having been the cause of the stampede. At the time of the incident, it is estimated that nearly 20,000 people were inside the Arena, nearly half of which had forced their way in without having tickets.

The organisers kept the concert going until around 06:30, with full knowledge of what had occurred several hours previously.

The toll was three young women dead by asphyxia and multiple crush trauma, two extremely critically injured young girls – one of which was under-age and who died three days later. The other girl was in critical condition in a Madrid hospital. It remained unknown several days afterwards exactly how many more people suffered injuries and of what severities.

A number of other serious questions have arisen during the initial investigation regarding not only the conflicting numbers of spectators and the lack of controls. One very prominent question is why no corrective actions or crowd controls were carried out when around two hours prior to the tragedy at least three stampedes took place inside the pavilion involving hundreds of people. Another important incident was the opening of specific exits by a security agent that permitted free entry of people from outside the Arena. Additionally, according to the investigation, the last victim received medical attention nearly one half hour after being crushed.

Shortly after the tragedy, the Mayor of Madrid announced that no city-owned properties would be rented out for similar activities. Nonetheless, the promoter was selling tickets to a similar macro-event scheduled for January 1st, at the same venue – Madrid Arena.

A judiciary investigation is under way, and relatives and friends of the victims are demanding that no city-owned properties would be rented out for similar activities. Nonetheless, the promoter was selling tickets to a similar macro-event scheduled for January 1st, at the same venue – Madrid Arena.

However, knowing the peculiarities of politicians in Spain, there may well be more scapegoats than truly responsible persons.

So far more than half a dozen municipal executives have either resigned or been suspended, including the councilor responsible for the management and contracting of the Arena. Other senior executives have been summoned to testify in the investigation.

The promoter has insinuated that he has ‘close’ relations within city hall, and although he owes thousands of Euros in Social Security payments and has debts pending with Madrid’s government, his company has been considered as ‘preferential’ in contract qualifications.

Historically there have been numerous tragedies in discoteques and concert venues around the world. Several of these have involved fireworks as the probable ignition sources of fires, while in several other instances – where no fires were involved – stampedes or avalanches of spectators have caused numerous victims.

- The highest death toll in a nightclub: Coconut Grove in Boston in 1942 – 487 deaths
- In 2000, in Mexico City, 20 victims died in an establishment that had been closed 11 times previously for diverse infractions
- Brest, France, 2002, 4 victims in an avalanche of attendees at the entrance to a music concert
- Chicago, USA, 2003, 21 victims crushed and/or asphyxiated due to panic, there was no fire in this incident
- West Warwick, USA, 2003, 96 deaths, 200 injured, disco fire caused by fireworks
- Buenos Aires, Argentina, 2004, 192 dead, 1,000 injured, disco fire caused by fireworks
- Manila, Philippines, 2006, 74 deaths in an avalanche to enter a concert
- Perm, Russia, 2009, 113 dead, 134 injured, fire caused by fireworks
- Guadalupe, Mexico, 2010, 5 dead when apparent gas/flare provoked a stampede by disco public
- Duisburg, Germany, 2010, 19 dead, 342 injured, stampede to leave a concert provoked panic, inadequate exits.

Some estimates indicate that at the time of the stampede there may have been as many as 20,000 persons in the Arena – the legal capacity is 10,600.

An essential element that must be incorporated into the emergency preparedness for this kind of activity is an up-to-date emergency response plan that contemplates the possibility of mass evacuation. As in the case of Madrid Arena, an emergency response plan for the establishment indeed existed, but had been designed around the use of the facility for sporting events where no public occupied the ground floor. The fact that several thousand people were crowded into that space nullified the theoretical egress routes and exit doors. What was apparently lacking was a specific evacuation control plan that would have been activated by the supposedly prepared controllers of access and internal order. Security personnel must have adequate training in the organisation and control of mass evacuation situations. This training should be an essential part of their primary training as security guards or auxiliaries, and it should be frequently repeated during their professional careers.

George H. Potter is a Fire Protection Specialist living in Spain for the last 50 years. He got involved in fire safety as a volunteer in the Riva and Annapolis, MD VFDs and further on as a FF, driver/operator and Crew Chief in the USAF, which took him to Spain. He has worked in fire protection installations specifications, mobile apparatus design and construction and training of Spanish public service FFs and industrial emergency responders in Spain, Portugal and Algeria. He is a Spain certified fire service instructor and a Board member of the Spanish FF Association, ASELF. He has authored numerous articles in emergency publications in Spain, USA and the UK.

This article and the photography have been provided by its publisher, Hemmingerxx.com.
2013 Wildfire Season Outlook

Due to fewer and smaller fires in the Southeast US, where the fire season starts earliest, the 2013 wildfire season has gotten started slower than in recent years. The outlook for western fire season, however, has few bright spots. Extended drought kicking in along with hotter temperatures has wildland fire managers scrambling to be ready with the effects of Federal Budget Sequestration. The western season is projected to be similar to that of last year’s, with lightning being a major wildcard as the likely ignition source for many if not most fires. Bureau of Land Management (BLM) expects to have close to the same number of firefighters and other fire resources as they had for last year’s wildfire season.

- BLM received an exception to a hiring freeze, from Department of Interior (DOI), for seasonal firefighters. They are hiring about 1,000 seasonal firefighters, which is about 75 fewer than in 2012.
- They expect other fire management resources - engines, aircraft, dozers, and hotshot crews - to be close to the 2012 levels. BLM is absorbing most of the budget cuts, at the overhead level, so that they can better preserve suppression capability.
- In 2013, BLM will sponsor at least three 20-person military veterans’ crews in Nevada, California, and Oregon, with several smaller crews in other states.
- Aviation resources are a bright spot in the BLM’s 2013 fire management program. BLM has 11 single-engine air tankers (SEATs) on exclusive-use contract this year. A solicitation is out for an additional 16 SEATs, which would more than double the fleet. Another solicitation is out for two water-scooper aircrafts, potentially doubling the number that is currently available. Results of those solicitations won’t be known until May. Additionally, helicopter availability should be close to last year’s level.

Wildfire Response

- The FS will respond vigorously to wildfire with an array of assets, including approximately 10,000 firefighters and 900 engines. The FS has been planning to have up to the following: 25 large air tankers; 3 very large air tankers; 3 very large air tankers; 3 water scoopers; 125 heavy, medium, and light helicopters on exclusive use contracts; and 300 heavy, medium, and light helicopters contracted as on-call / when-needed available for wildfire suppression.
- Safe aggressive initial attack is often the best suppression strategy to keep unwanted fires small and costs down. The FS suppresses almost 98% of wildfires on initial attack.
- Firefighter safety: FS wildfire management strategies are based on the “5 Rights” to limit unnecessary exposure and expenditures. That is, the right plan in the right place at the right time with the right assets for the right duration.
- Accelerated Restoration for Resilient Landscapes
  - America’s forests are a sustainable, strategic asset in achieving and enhancing U.S. water and air quality, economic vitality, and community safety. Covering a third of the country’s landmass, forests store and filter more than half of the nation’s water supply and absorb 20 percent of the country’s carbon emissions. But they are in dire need of extensive restoration because of cumulative impacts from wildfire, insects, disease, and drought.
  - Drought conditions are adding to the escalating crisis. This year, more than 60 percent of the contiguous U.S. is currently in a moderate or worse stage of drought, with 20 percent of those areas experiencing exceptional drought conditions. Because of these climate conditions, 26 states were recognized as natural disaster areas in 2012.
  - Forests provide clean drinking water to more than 180 million people from coast to coast. Unfortunately, 29 percent of America’s forested watersheds have been identified as having high to very high wildland fire potential.
  - Firefighter and public safety are the highest priorities on all fires. Regard for human safety and management of risk guide all fire management decisions and actions.
  - Millions of people live near wildlands where fires naturally occur. The FS helps communities become fire safe through preparation toward becoming “fire-adapted” communities. Resources are available at www.fireadapted.org.
  - The FS will continue to fully suppress all human-caused wildfires while also actively promoting fire prevention.
Violence against firefighters: A checklist for survival

Planning for acts of violence before they occur is key to mitigating their impact

Although violence towards first responders from the public we serve isn’t new, the frequency and intensity feels like it’s increasing. In fact, the Firefighter Life Safety Initiative Number 12 calls for national protocols for response to violent incidents be developed and championed.

One of the more interesting items is that several studies indicated a consistent rate of attacks on fire service. In some countries, notably the United Kingdom, direct attacks on fire brigades are well documented. The shooting of fire service members is, unfortunately, not a new phenomenon.

The standard model of risk management travels from low frequency to high frequency from left to right, and low risk to high risk moving up the graph. Clearly, even with any national increase in violence, the phenomenon is a low-frequency event for the fire service. It is, however, just as a national increase in violence, the phenomenon is a low-frequency to high frequency event for the fire service. It is, however, just as clearly a high-risk event at the same time.

Hazard training
An argument can and should be made that OSHA/PEOSH General Duty Clause would require that employers and our industry in general are well aware of the need to have appropriate training, equipment and protection to our members. This knowledge leads to our general duty to provide appropriate training, equipment and protection to our members. In my home state of New York, workplace violence training is mandatory for career and volunteer departments alike.

A large portion of the resources connected to Initiative 12 deal with scenarios where violence has already occurred, is continuing to occur or can be assumed to occur when public safety arrives. However, as we’ve discovered when we are the initial focus on the violence there aren’t quite as many resources available. The Final Report for Initiative 12 outlines preliminary checklist when confronted with a violent incident.

1. If your initial size-up assesses a threat of confrontation, wait for police assistance. Do not insert yourself into the situation.

2. If you find yourself in a confrontation where you can remove yourself to wait for police assistance, do it.

3. If confronted with non-lethal force (no weapons are involved), defend yourself and attempt to control the situation using non-lethal force.

4. If confronted with lethal force, use whatever means is necessary to eliminate the threat or get out of the way. At times, this could mean not doing anything at all that might provoke the attacker. This would be an appropriate course of action when a gun is pointed at you.

All planning is local
Our members tend to be can-do people who want to help and want to get right into the situation. Quite frankly these are not the only people who gravitate to our organizations, but we like having them. But, that can-do attitude can clearly put them in the wrong place.

For many agencies the local police are not very local, and are responding from quite a distance. This puts firefighters at even greater risk.

Waiting until the event to talk to your police agencies about how you’ll communicate and address such horrible scenarios is simply unacceptable.

No geographic area is immune to violence and resources are out there, so get out and train, talk and prepare.

This article has been provided by its publisher, FireRescue1.com.

STRAIGHT TIP CROSSWORD PUZZLE

Across
1. Aircraft/_________ fire fighters have special training in aircraft fires, extinguishing agents, and extraction.
5. Air management ensures that the supply will ___________ through required tasks and safe return.
6. _______ particles are not dangerous to people or animals unless the emitting substance has entered the body.
8. Automatic Number Identification
9. A _______ distributor nozzle spins, spreading water over a large area and can be placed in confined spaces.
10. Backpack _______ extinguishers use a hand-powered piston to extinguish fires portably.
12. Class C _______ involve energized electrical equipment.
17. Even if there is no visible break in the skin, there may be a _______ wound.
18. A carbon dioxide extinguishing system _______ the area with carbon dioxide.
20. Aircraft rescue teams wear specialized turnout _______.
21. An _______ line delivers water to a fire from a pump.
22. Heart disease that presents as breathlessness, general swelling and fluid retention in the lungs.
24. Absorption is the process by which hazardous materials _______ through the body ultimately reaching the bloodstream.

Down
1. _______ helps personnel deal with stress in a positive manner.
2. Automatic sprinkler _______ activate the system and apply water to the fire.
3. _______ notification devices make occupants aware of potentially-dangerous conditions.
4. _______ K fires involve cooking media.
5. Immune disorder caused by HIV.
6. Class B fires may involve flammable and combustible liquids, lacquers, oils, or _______.
7. In this sprinkler head, a chemical _______ liquifies at a preset temperature.
8. An automatic adjusting _______ nozzle utilizes an internal spring loaded piston.
9. Absorbs heat and extends from the basement to the _______ without any fire stops.
10. An accountability system ensures that only persons with specific assignments are permitted to work within various _______.
11. A combination ladder _______ from a straight ladder to a step configuration.
12. The _______ gas, carbon monoxide, is produced through incomplete combustion.
13. Balloon-frame construction studs extend from the basement to the _______.
14. Case-hardened _______ can be cut only with specialized tools.
15. The _______ ladder removes _______ dioxide and generates fresh oxygen.
16. Immune disorder caused by HIV.
17. A closed-circuit breathing apparatus removes _______ dioxide and generates fresh oxygen.
18. A carbon dioxide extinguishing system _______ the area with carbon dioxide.
19. Case-hardened _______ can be cut only with specialized tools.
20. Aircraft rescue teams wear specialized turnout _______.
21. An _______ line delivers water to a fire from a pump.
22. Heart disease that presents as breathlessness, general swelling and fluid retention in the lungs.
23. Absorption is the process by which hazardous materials _______ through the body ultimately reaching the bloodstream.

Solutions on page 45
The Roy City Fire & Rescue Department (RCFR) was founded in 1955; beginning, as many departments do, as a volunteer fire department. Since then, the department has evolved into a career fire department consisting of two stations, three chief officers, 27 career firefighters, and 38 part-time firefighters. Twelve of the full-time and twelve of the part-time firefighters are paramedics and all three chief officers are also paramedics. All of the department’s Emergency Medical Technician’s are certified at an intermediate level and have undergone the transition testing for advanced EMT.

Over the past twelve months Roy City has undergone many changes; which includes the hiring of a new Fire Chief, two Deputy Chiefs, Roy’s first female Captain, two full-time firefighters, and twelve part-time firefighters. Currently, RCFR’s the annual call volume is 5,000; all of which are handled by Roy’s paramedic intercept unit and two ambulances.

The paramedic intercept unit is unique in the sense that it is inherently a county paramedic unit, meaning it is essentially available countywide. Roy City Fire & Rescue has mutual aid agreements in place to ensure a full fire response; which typically includes two ladder companies, two engine companies, a paramedic unit, an ambulance, and chief officers as an initial response. The current initial response area is approximately 50 square miles, with a population of approximately 67,000 residents, the mutual aid / paramedic response area stretches to approximately 110 square miles, with 104,000 residents. We currently have two level 2 trauma centers in close proximity to Roy City and a third hospital nearby as well. RCFR services residences, nursing homes, businesses, clinics, and Utah’s second stand-alone emergency room.

Roy City Fire & Rescue has many different areas of expertise within the department; some of the firefighters are USAR members, hazardous materials technicians, EMS and fire instructors, nurses, and flight paramedics. The Utah Fire and Rescue Academy (UFRA) recognizes our department at the gold level for Firefighter I/II and HazMat Awareness/Ops, silver for ADO-Pumper, bronze for Officer I, and participant for Wildland Firefighter. CFR’s personnel are encouraged to always strive to improve and educate one’s self, and this is reflected by UFRA’s recognition. We at Roy City Fire & Rescue pride ourselves in excellent customer service, patient care, quick response, training, and a family atmosphere within the department.
ACQUIRED STRUCTURE TRAINING

For the last five and a half years, I have spent much of my time on Truck 2 for the Salt Lake City Fire Department (SLCFD). Truck Operations for the SLCFD has come a long way over the years and continues to progress with every shift. During this time I have been part of some pretty amazing fires and even more amazing training.

Trainings amazing? Yes. Simulating vertical vent operations and roof construction using conex containers and props built of single layer oriented strand board (OSB), will only get a firefighter so far. Whereas acquiring a structure that is soon to be torn down or remodeled is a dream for fire training. Last February, SLCFD’s Training Division Chief, Karl Steadman, and the Unified Fire Authority (UFA) Training Division Chief, Greg Reynolds, arranged for a training using a Bally’s Fitness building, which was in the process of being torn down.

Acquiring a structure that can provide live fire training is labor intensive. There are multiple people, agencies, and departments involved at every stage - phone calls, meet and greets with owners, delivery of the actual training, and then the board up phase afterwards. I have been involved with a few of these real life structure trainings and believe me it is worth every minute. This type of training really pays off, while also promoting team building among the many different agencies that participate. Overall a firestorm of information and skill sharing, that cannot take place without a structure, is acquired.

One roof type that I have trained on only a couple of times is that of lightweight commercial roofing (open web steel trusses with metal N deck and four inches of Styrofoam covered by a membrane). Over three days’ time, our company along with 62 other units from throughout the valley spent two straight days of training on the roof of the previously mentioned Bally’s Fitness building. We were able to practice pullback methods; trenching; creating 12 x 4 holes using chain saws, rescue saws, and anything else we could imagine. After all was said and done, we knew exactly how our saws would perform and just how taxing this type of roof might be to vent. Having free reign on this true to scale roof paid off by offering a priceless training experience.

Fast forward three months. At 0650 hours a structure fire at the new Nordstrom building, located within the City Creek Center, was reported with visible smoke and flame. The Nordstrom building is a 124,000 sq. ft. two story structure. Upon arrival we set up our aerial to access the southwest corner of the roof. There was a small fire around the three vent pipes extending out of the roof. Due to the training we had previously received at the Bally’s Fitness building, we knew exactly what we were going to do. As another firefighter and I approached from the uninvolved portion, we immediately went to work with our chainsaws to determine the extent of the fire and its origins. When our saws plunged into the deck, I had flashbacks of our training at the Bally’s Fitness building; the roof construction was almost identical. Nordstrom’s roof had a couple of extra layers of tar and fiberboard but our approach was the same. After removing about 6’x6’ of deck material from around the pipes, we concluded that the roof was the source of the fire. However, to be sure that there was no involvement from below, which there was not, we did pull up one corner of the metal N deck as well. Ultimately, one of the three pipes (previously mentioned) was an exhaust for a generator in the basement level. The generator never shut off, as it was supposed to, and the pipe got hot enough to catch the roof material on fire.

While on the roof of the Nordstrom building, I felt that we were well prepared to do anything necessary to save this structure or at least salvage large areas by trenching, if needed. Due to the training we received atop the Bally’s Fitness building, we had sufficient training, proper tools for the job, and confidence in our own abilities when managing this fire. All in all, training with the use of an acquired structure is an excellent resource for giving firefighters additional confidence and knowledge.

Shaun Mumedy has been with Salt Lake City Fire since 2006. Previously he worked for Southwest Ambulance and continues to work for Life Flight. He has spent his career thus far for SLCFD dedicated to the progression of truck operations. Shaun is an instructor for UFA’s Winter Fire School truck ops course and is currently working towards a Fire Science degree.
PREPARE, PERFORM, PREVAIL: Sandy City’s Disaster Plan for Success

The adage “failing to prepare is to fail” best summarizes Sandy City’s philosophy on emergency management. Although we’ve never had a major emergency, we have a focused approach on planning and exercising to ensure readiness in the event of an actual emergency.

The Great Utah Shakeout offered an ideal opportunity for the city to look at our disaster plan and identify areas of necessary improvement. On April 17th at 10:15 am, we joined approximately 860,000 participants statewide in the “Drop, Cover, and Hold On!” exercise and concluded our day with the Communication’s Bridge Call designed for mayors and elected officials. Based on feedback from our Emergency Management Team, we also chose to exercise several emergency support functions, including transportation, communications, public works/engineering, firefighting and emergency management.

Following the outlined scenario of a 7.0 earthquake, we stood up our Emergency Operations Center (EOC) from 11 am to 1 pm for a functional exercise with the following objectives:
- Establishing and staffing the EOC
- Developing an Incident Action Plan (IAP) for an operational period
- Responding to incidents
- Documenting and prioritizing incidents on a status board
- Arranging for the feeding of first responders and EOC staff
- Setting up a Joint Information Center (JIC), assigning roles, preparing a media release, and communicating through social media

LESSONS LEARNED

Have a Plan
The Sandy City Operations Plan was officially adopted by our City Council and is widely distributed to EOC staff. This plan is reviewed regularly, with exercises and drills developed based on its contents. The plan itself includes the thirteen sections required by the National Incident Management System (NIMS), as well as specific policies, instructions and guidelines related only to Sandy City. Elements of the plan include EOC levels of activation, hazard analysis, organization and responsibilities, and resources, such as maps, forms, and disaster equipment inventory.

Involvall Stakeholders in Exercises
City Council
In addition to adopting the Sandy City Emergency Operation Plan, our City Council is encouraged to attend appropriate discussions to better understand the roles they will play in an emergency. Elected officials feel an obligation to inform residents and need to receive timely information through the proper emergency support function. It is also important they understand the need for one official voice to avoid confusion.

Residents
There is no greater responsibility for Sandy City than to protect the public and ensure that everyone is ready to respond to and recover from a natural or man-made emergency or disaster. Our primary responsibility in an emergency is to make sure residents are informed of the role the city will play, as well as their responsibility to be self-sufficient and prepared.

Staff
Our departments have been assigned roles and functions to assume when a disaster strikes, and they actively participate in drills to prepare them for a planned and practiced response when the need arises. Our annual training schedule includes a functional exercise and 2-3 tabletops, with full-scale exercises done on a limited basis.

Outside Agencies
Knowing no city is an island when it comes to a disaster, relationship building prior to an emergency becomes all the more important. Wherever possible, we include outside partners to enhance training and better mimic the outreach that will be needed.

Never Stop Communicating
The importance of communication cannot be understated in an emergency. Knowing its importance, we focus heavily on JIC staffing and training to ensure all stakeholders will receive timely, accurate information. The JIC is organized into three functional areas: information gathering/production, field information, and information dissemination, with a total of 7-9 staff members to perform the required duties.

The organization of the JIC is based on best practices from disasters across the state. We have found great value in collaborating with those who have been involved in disasters to incorporate their knowledge into our plan. Lessons learned from this collaboration include having adequate staffing levels in the JIC, creating a field PIO position to better ferret out situation updates, and encouraging cooperation and joint information release from all agency PIOs.

While our hope is to never experience a large-scale disaster, our preparations will make us better able to handle disasters of any magnitude and will give our residents confidence in our ability to continue to provide for their needs.

Sandy City is dedicated to ensuring we are prepared to respond to a wide range of emergencies and disasters. As part of that commitment, we will continue to organize and participate in exercises that will test our readiness and will then make adjustments accordingly. Working together as a community, both in practice and in an emergency, is the best way to ensure success.

Nicole Martin, Communications Director for Sandy City, utilizes her years of experience in business marketing and public relations to improve the communications and transparency between municipal government and its residents. While employed as the Public Information Officer for Herriman City, Martin was known for her crisis communications during the Machine Gun Fire, including a heavy emphasis on media relations and social media outreach. During three separate wildfires in Herriman, Martin stood up and operated a Joint Information Center, developing best practices as a result of those experiences.

A proponent of a diversified communications approach, Martin uses social media strategies coupled with traditional tactics to engage residents and provide opportunities for digital dialogue and interactive conversations. Martin highlights the value of social media during a crisis, but emphasizes it must also be used regularly to build an audience, create trust and establish an authoritative source.
Seventy years ago, three firefighters were killed and 10 more injured when the balcony of the Victory Theater, at 83 East Broadway in Salt Lake City, collapsed during a fire. For many years, the fallen heroes and circumstances surrounding the deaths were forgotten. However, on May 19th, 2013, firefighters past and present, along with family and friends, joined together to honor Harry Christensen, Melvin Hatch, and Theron Johnson during a ceremonial telling of their story. An Honor Guard then placed a wreath in front of the former theater. The story of the fallen heroes was commemorated in a July 2008 UFRA Straight Tip story written by Steve Lutz. This story became the basis for a later award-winning account in the Utah Historical Quarterly (Fall 2011). Read about the fire and its aftermath online at http://www.uvu.edu/ufra/docs/Victory%20Theatre5.pdf.
Science
On Scene
by Steve Lutz

Technological solutions to emergency situations are nothing new but several new developments show early promise toward greatly enhancing safety and response for everyday events, it’s like using technology straight out of science fiction.

Joe Landolina, a 20-year-old junior at New York University, invented a gel that instantly stops bleeding while also providing an organic matrix for healing wounds. He started the project as a freshman and over several years as a biomolecular and chemical engineering student used trial and error to develop this product. How the substance, named Yeti-Gel, works is still a bit of a mystery. However, it is known that plant extracts are used to provide the extracellular matrix that organisms use to rebuild tissue. Injecting it directly into a wound has proven to instantly stop carotid artery and other serious bleeds in animal tests.

Landolina’s new company hopes to get FDA approval after testing has been conducted and supervised by a cardiovascular surgeon. A day may come when EMTs will simply apply Yeti-gel to stop the bleeding of traumatic wounds rather than having to apply pressure.

Other antihemorrhagic agents have been used in military medicine for years. Typically these substances work by promoting rapid coagulation of platelets. These are gaining acceptance in civilian trauma settings and in the operating room.

Every firefighter’s worst nightmare is to be lost or trapped and unable to find his or her way around in a smoke-filled atmosphere while back-up crews are also unable to locate the lost or trapped firefighter. A number of inventions aim to solve this problem. The simplest is a smart phone app called Man Down, which uses the GPS function native to the phone to relay location information to other crewmembers. According to an online Fire Chief magazine article by Chief Mary Rose Watson, “When the user presses the activate button on the app, the phone will monitor the user’s movements. If the user’s phone is motionless for longer than 30 seconds, a pre-alert will go off. If the user is motionless for a minute, emergency alerts will be issued, notifying people of their name and GPS map location of their phone.” She recommends a ruggedized smart phone case to protect the device.

The app can also be used as a medical alert system for seniors or others with medical issues that could leave him or her immobilized and unable to summon help.

A number of devices developed and currently being tested use remote sensing and GPS such as Honeywell’s Geospatial Location, Accountability, and Navigation System for Emergency Responders (GLANSER). With this system every firefighter is linked with a transmitter where commanders can track specific coordinates from a laptop or tablet. This video game-like interface shows the exact position of every firefighter in real time and in 3-D.

An experimental helmet, spotlighted in PC Magazine, uses touch feedback similar in a way to an animal using whiskers to sense nearby objects. Ultrasound waves are transmitted and bounce back from objects to sensors in the helmet. A firefighter could sense a hole in the floor, an open door, or even a nearby victim through the thickest smoke. Eventually we may see an integrated system that allows us to see via infrared camera and feel one’s surroundings while exact positions can be tracked via miniature devices embedded in a helmet or face piece.

Perhaps the wildest bit of science suppresses fire with sound. The Defense Advanced Research Projects Agency (DARPA) has successfully conducted experiments that stop flammable liquid fires by raising or lowering the acoustic field. According to a Digital Trends writer Natt Garun, “First, the acoustic field increases the air velocity. As the velocity goes up, the flame boundary layer, where combustion occurs, thins, making it easier to disrupt the flame. Second, by disturbing the pool surface, the acoustic field leads to higher fuel vaporization, which widens the flame, but also drops the overall flame temperature. As the same amount of heat is spread over a larger area, combustion is disrupted.”

While this method is unlikely to become field deployable sometime soon, it could be very useful in delicate but hazardous chemical processes that could not use conventional suppression devices and in confined spaces like those found in aircraft or onboard ships and submarines.

DARPA has also developed a small wand to extinguish flame with an electrical field. The belief is this will one day be a useful everyday firefighter tool. Could it be that one day we’ll use this magic wand instead of putting wet stuff on the red stuff? Stay tuned, as stranger things have happened.

Read more: http://www.digitaltrends.com/cool-tech/darpa-fire-suppression-system-extinguishes-flames-with-wand/#szcz2PbQkJFW1p

Pictures provided by Honeywell Corp.
FEAR NOT!

A colleague and friend of mine shared a story with me the other day. Having recently completed teaching a training session for fire officers, within his department, on tactical considerations and safety concerns related to a particular type of commercial structure, he was approached by one of the officers, who had participated in the class, and asked why he was “spreading fear”. The officer then went on to tell him that he was scaring firefighters from doing his or her job. This is a fascinating observation.

Firefighters definitely hold strong opinions on issues. We all know or have known firefighters and officers who exhibit extreme bravado and machismo. These characteristics are not necessarily bad, unless they cause the mind to be shut off; leaving an attitude of “I know it all, you can’t and won’t teach me anything” to dominate. Once that happens we really do need to be afraid!

The fire environment is changing; that is an indisputable fact. There are identified hazards associated with certain types of structures and occupancies. Due to firefighter fatalities and injuries, these hazards have been recognized quite often. It has typically taken multiple tragedies before a hazard is fully understood to the point that it creates a change in firefighter behavior and attitude.

Can we ignore a firefighter death? Can we ignore multiple firefighter fatalities and injuries? Can we afford to not learn the lessons? I think not.

How do we combat fear? Knowledge and preparation is the antidote for fear. The more we know about fire behavior and the hazards associated with different types of construction and occupancies, the less we have to fear.

Stephen H. Higgs began his fire service career in 1977 with the Salt Lake City Fire Department. Higgs served as a firefighter/paramedic, lieutenant, captain, battalion chief, and deputy chief over fire operations. In 2000, after 23 years with Salt Lake City, he accepted the position of fire chief with Midvale City Fire Department. On July 1st, 2011, Midvale Fire merged with the Unified Fire Authority of Greater Salt Lake (UFA); Higgs now serves as an assistant chief with the UFA. Higgs holds degrees in building construction and fire science. He has completed Executive Fire Officer Course work at the National Fire Academy and is a graduate of the Senior Executives in State and Local Government, Harvard University, John F. Kennedy School of Government. He is a FEMA certified emergency manager as well as an adjunct instructor for UFRA.

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Last issue we discussed the necessity of conducting a thorough inspection and test not only of the fire suppression system in the kitchen hood exhaust system but also of the grease exhaust ductwork itself. This issue, we will look at the importance of respecting the exhaust termination point: that point where the exhaust ductwork penetrates an exterior wall or roof assembly and forcibly exhausts grease-laden vapors into the surrounding atmosphere.

The International Mechanical Code regulates exhaust termination points in great detail. Why? Because if not properly installed and assembled, the prudent fire inspector would have to deal with.

The grease cannot exhaust in the atmosphere. Typically you will see this as a small rectangular metal box with piping running from the top of it to the base of the fan. This rectangular box is a grease reservoir, and is used to collect the runoff from the exhaust fan. It is common for these reservoirs to be missing or simply not be installed by the ductwork contractor. Keep a sharp eye out, as reservoirs provide a valuable service to the system. Secondly, the fan must be hinged (see Fig. 2) so that it, and the ductwork below it, can be easily cleaned by service personnel. Third, in addition to the hinge, the electrical power source serving the fan must have a flexible weatherproof cable to permit the inspection and cleaning (Figs. 1 & 2).

Fourth, the ductwork itself must extend at least 18 inches above the roof surface. This again is a commonly misinterpreted and misunderstood code requirement. To understand it and to simplify, look at Figures 1 and 2 again. You’ll notice that the pink colored ductwork actually extends out of the roof surface a good distance before attaching to the bottom of the exhaust fan. On that particular installation, when I first conducted the initial fan inspection, the ductwork only extended 12 inches above the roof surface. After meeting with the contractor and explaining the code requirement, an additional 6 inches of stainless duct was added to pass inspection. To review, the very top of the exhaust fan must be at least 40” above the roof surface. Included in the 40 inches measurement can be the 18 inches that the ductwork must extend above the surface as well.

4. Look for the Commonly Missed Items: Take a closer look at Figures 1, 3 and 4. Notice anything missing?

That’s right, the two exhaust fans seen in Fig. 1, located on the rooftop of a newly constructed building, never had their grease drain outlet and reservoir installed. This system was allegedly ready for “final inspection.” Had the fire or building inspector never taken the time climb onto the roof and look at the fans, the cardboard boxes full of metal pieces would’ve eventuall become saturated with grease, fell apart, and dropped the contents down into the spinning fan blades, destroying the system and possibly causing a seized motor and subsequent rooftop fire. Not only is it common for the grease reservoir to be missed but also oftentimes the contractor wants to do a “cut-and-run” job, get paid, and get out.

This kind of carelessness can result in the exhaust fan being much too close to building openings, not having the required hinged and flex conduit, or being too close to the surface of the roof wall.

As always, if the Fire Inspector takes his or her time and does a thorough, competent inspection, items like the ones listed in points 1-4 can be easily inspected and checked for not only their presence but also their proper installation. It may take a little time to climb up the roof access ladder, squeeze through that hatch, and take a few measurements, but the rooftop fire you may prevent from happening could save countless lives and hundreds of thousands of dollars in damages.

Be safe and inspect thoroughly!

Todd Hohbein has been employed with the State of Utah Fire Marshal’s Office since 2000 as an inspector and fire investigator. Todd was previously with the Nebraska State Fire Marshal’s Office from 1997-2000. Todd lives in LaVerkin, and his jurisdiction as a fire marshal includes Washington, Iron, Beaver, and Kane counties.
Catastrophic Large Scale Releases of Condensed Liquefied Gasses – A Report on the Outcomes of Jack Rabbit I Testing by Andrew Byrnes

The scene is a major metropolitan area: airports, shopping centers, government centers, fire and police stations, schools, transportation corridors, hospitals, nursing homes, commercial/industrial areas, and residential neighborhoods. The weather and terrain conditions are just right. The time of day is chosen for maximum human impact and disruption. Terror, fear, and panic ensue when a rail car is opened up using an improvised explosive device to release a dense liquefied gas with toxic properties that have the potential to cause 17,500 fatalities, 10,000 severe injuries, and over 100,000 hospitalizations. Sound like an exaggeration? This is actually one of the 51 planning scenarios created by the Department of Homeland Security (DHS); for use in national, state, and local homeland security preparedness activities required by Homeland Security Presidential Directive / HSPD-8.

In anticipation of such a scenario, the Transportation and Security Administration (TSA) reached out to the National Chem Bio Lab at Aberdeen Proving Ground (US Army) who in turn partnered with the DHS Chemical Security Analysis Center (CSAC) to conduct testing on large-scale releases of condensed liquefied gases. The testing was not intended to prove or disprove known chemical and physical properties but rather to observe the phenomenon of large-scale releases of dense toxic gases. The CSAC chose to conduct testing at the Dugway Proving Grounds in Utah. The tests were code named “Jack Rabbit I” (JRI) and conducted during April and May 2010. Ten tests were conducted with 2-ton releases of chlorine and ammonia.

You may ask, “That was three years ago; why are we just finding out about this?” The answer is that the TSA reached out to scientists and technical modelers, as they should have, to determine the required scientific data to assess the risk. It was only after the phenomenon was observed, recorded on video, weather and meteoring data were crunched, and the participants came back together that the determined that some of the information might be critical for the emergency responders who would be required to deal with such an event. At that time they reached out to Wayne Yoder, Hazmat Program Manager at the National Fire Academy (NFA), who assembled a committee of hazmat subject matter experts (SME), NFPA 472 committee members, DOT/ERG, and railroad administrators to assess the training value of this information.

Over a three day period, the new committee was briefed by the scientists on the data, some of which are still classified. Breaching the container is especially protected information. The objective of this meeting was to distill the technical data down into operational points that could be used by emergency responders. We also looked into the creation of training materials and means of promoting this new information to the response community at all levels. The NFA courses that pertain to hazardous materials were assessed to see where this new information would fit best within the curriculums.

So what is this new information? The tests were conducted using both a modified 500 and 1,000 gallon propane tank. The first contained 2 tons of chlorine and ammonia. The tank was located in a basin, 2 meters deep and 55 meters in diameter. As the material was released from the bottom of the tank, a biphasic jet flow of liquid and gas resulted in a 60-90 second release. The ammonia demonstrated much more obedience to wind due to its Vd = .6. Large, stormy clouds of condensed water vapor moved in tall billowing cloud fronts with the wind and evacuated the basin in approximately 180 seconds (Fig. 1). The chlorine releases were heavy Vd 2.49, slow to react to wind, and remained in the basin for 20 minutes or more (Fig. 2). The differences between these two materials were as stark and further confirmed their physical properties; and verified what we already knew about these materials. The fastest wind speeds recorded during the JRI tests were 7.8 mph. Other major factors include the high molecular weight, extremely low temperatures, and high concentration - these all contribute to the behavior of a dense gas.

Ammonia and chlorine were chosen due to the fact that these two materials are the most frequently transported resulting in 75% of all rail traffic involving toxic by inhalation hazardous materials. With ammonia’s flammability potential and chlorine’s toxic characteristics, these two materials should be on the tip of every responder’s tongue when it comes to their hazards and properties. Regarding the incident time clock, and the location of the breach in the tank, there will be little that technicians can do to stop the catastrophic release. What is more likely is the responders will be dealing with the human and environmental impact of such a release, and chlorine was found to be a much more serious and sustained toxic release, where as ammonia would be lifting off and clearing out.

This article cannot begin to describe all of the intended data; however, for emergency responders, the training value assessment committee identified the following takeaways:

1) Initial isolation zones for Cl2 and NH3 in the ERG were validated - Since 1930, every known accidental release of large-scale chlorine was researched. In every case, with the exception of Graniteville, SC, all fatalities were within the 500 meter initial isolation zone that is set for large chlorine releases. In Graniteville, two fatalities raised 2 meters off the floor and 1 meter outside that zone. Interestingly enough, also at Graniteville, a survivor who sheltered inside her car was rescued 85 feet from the point of release.

2) Downwind protective action distances need further study - At JRI, the furthest actual monitor downwind was located 500 feet from the release, and the rest of the data was calculated using standard modeling up to 2,000 meters. Future testing should locate metering up to 7 miles or more to verify models.

3) Wind is the dominant factor in plume or cloud formation and detrainment - Wind had a profound effect on ammonia and a lesser effect on chlorine. This is mainly due to vapor density. I learned from the weather scientists that when wind speed doubles, the plume length (distance traveled) increases by 8 times. So wind speed has an exponential effect on plume length and essentially downwind distance traveled.

4) Low wind allows for the upwind movement of the vapor cloud - While we will certainly continue to operate “Uphill & Upwind”, it is interesting to note that in the large catastrophic releases, there is so much material released almost instantly that the jet release of liquid material with its associated expansion ratio (1:460) causes the vapor cloud to travel upwind and up-terrain initially before wind can overcome the vapor content. Use caution until more detailed data can be assessed.

5) Rapid Phase Transitions need further study - In the case of chlorine only, a phenomenon never before observed was caught on video. The term used to describe it is “Rapid Phase Transition”. The scientists and chemists at CSAC are still trying to ascertain the cause, which will further define the term. Here’s what happens: during the formation of a super cold liquid pool of material, before it can completely vaporize, explosions are being seen inside the liquid pool. Within approximately 30 seconds of release, explosions that involved the earth and chemical within the liquid pool are observed reaching heights of about 30 feet, this is a good reason, among many, to avoid liquid pools. The big question is – this was only a 2-ton release, what happens to 80 tons of liquid? How big will these “reactions” be?

6) Soil saturation and long-term off gassing need further study - When the vapor cloud is long gone, the danger has not passed. Rescue operations will be conducted during the phase after release. Responders need to know that at least 24 hours post release and chlorine levels were well above the IDLH. Metering personnel reported “popcorn popping” sounds and, bubbling and wispy vapors were also still visible. Two weeks after the last test was conducted, Dugway personnel dismantling the testing apparatus were bothered by chlorine vapors from the disturbed soil. More caution is warranted.

There will be inclusion of emergency responders in the design of future testing scheduled for 2015 and called “Jack Rabbit II”. These tests will include 20-ton releases and extensive urban environmental studies to include compatibility reactions with common hydrocarbons, combustion reactions, and community countermeasures such as berms and vegetation that would limit plume dispersion - especially in the case of chlorine. That will be efforts to be more multi-agency inclusive, and information sharing will be emphasized so that responders won’t have to wait three years to discover the findings. Be careful out there - I hope we never see this happen.
In my first responder situational awareness classes we talk about the need to predict the future. Based on the definition I use in my programs (offered by Dr. Mica Endsley), I am referring to Level 3 situational awareness – being able to project future events. This is catastrophically important to first responder safety. Many times the things that hurt and kill first responders are predictable if you know what to look for and if you see it in time to take appropriate action.

Sometimes the bad things on the horizon are obvious. Other times the clues are so subtle they can be overlooked. Taking a pessimistic view of the future can sometimes help. Let me explain…

Imagine that every time you respond to a building on fire that you form a mental expectation that the building is in the process of falling down. Is that a realistic assumption? You bet it is! You don’t have to study Newton’s law of universal gravitation to understand gravity is pushing down on the earth all the time and with constant force. This means, in essence, gravity is trying to make every building fall down (including the one you are sitting in right now).

The only thing holding a building up against the force of gravity is the components of construction. Pretty simple stuff, right? The components of construction will work, as designed, for so long as they are not acted upon by an outside force (there’s a little Newtonian physics language for our scientific readers).

For the sake of this discussion, that outside force… is heat. Heat degrades the ability of the building components to stand up to gravity. At some point, unless action is taken to stop the degradation, the components of construction will lose out to gravity and the building will fall down.

Let’s tie all of this into situational awareness. The first level of situational awareness is perception – being aware of building construction and fire conditions. The second level of situational awareness is comprehension – being aware of how the former is being impacted by the latter. The third level of situational awareness is projection – being able to make accurate predictions about how soon a building (or component) is going to lose its battle with gravity.

Chief Gasaway’s Advice

If you look at every building on fire as if it is in the process of falling down, it can change your entire perspective about your safety. As you conduct your size up, consider what the building is made out of. This takes some training and some knowledge of building construction. There are many different types of construction and each have their benefits and detriments, most of which are a factor of strength and cost of the materials.

Dwellings made with lightweight construction are going to lose their battle with gravity much sooner than dwellings with legacy construction. Buildings with fire suppression systems and fire resistive construction are going to fare better than those without.

The important point I want to make in this article is: Mindset. Be of the mindset that heat is degrading the component of construction and the building you are working in is being pushed to the ground by gravity. There may be little to no warning to indicate when gravity is going to win the battle.

I’m reminded of an experiment one of my kids did for school where we built a toothpick structure and then loaded weight on top of it incrementally until it collapsed. Until that last unit of weight was added there were no warning signs of impending collapse. But when the final unit of weight was added, the entire structure came smashing down. There were no warnings whatsoever. And while we were expecting it… in fact trying to create it… we were still surprised with the speed at which it happened.

Discussion Questions

1. Discuss the training you have received on building construction and how those lessons apply to being prepared for potential structural collapse.
2. Discuss how you can improve your safety by making reasonable predictions of how buildings will behave under fire conditions.
3. Discuss what you can do to ensure you will not be inside a structure fire when gravity wins and the building (or some portion of the building) falls down.

The mission of Situational Awareness Matters is simple: Help first responders see the bad things coming… in time to change the outcome. For more information on Situational Awareness Matters visit http://www.samatters.com/.

Richard B. Gasaway is a scholar-practitioner on first responder safety. In addition to serving 30+ years as a public safety provider, he earned his Doctor of Philosophy degree while studying emergency incident situational awareness and decision making under stress. Dr. Gasaway is widely considered to be one of the nation’s leading authorities on first responder situational awareness and decision-making.

New Fee Structure for Testing/Certification

Earlier this year, the State Fire Prevention Board approved a new fee structure for the certification office. The new fee structure will help relieve financial constraints of some fire departments and encourage candidates to better prepare for examinations. The new fees are as follows:

- Candidates passing their written examinations on the first attempt will pay $0 for testing/certification.
- Candidates passing their written examinations on the second attempt will pay $40 (the original fee).
- Candidates passing their written examinations on the third attempt will pay $60.

The new fee structure will begin on July 1st. Only those testing after July 1st will be eligible for the new fee structure.
Marla Easton is a paramedic and was promoted to captain this year. She has been with the Department for 18 years.

Cody Draheim is a paramedic and was promoted to deputy chief. He has been with the Department for 13 years.

Jeff Comeau is a paramedic and was promoted to deputy chief from captain. He has been with the Department for 17 years.

On April 24, 2013, Class #66 of the Utah Valley University Emergency Services Recruit Candidate Academy (RCA) held its graduation ceremony. During the program, College of Aviation and Public Services (CAPS) Associate Dean, Tom Sturtevant, EdD; and Emergency Services Department Chair, Rodger Broome, PhD; spoke to the parents, friends, and family of the class. Class Officer Logan Porter was awarded the Outstanding Student Award and Captain Matt Rhoades was awarded the Outstanding Instructor Award. Candidates Scott Copeland, Dylan DeMayo, Ryan Evans, Nick Hartman, Collin Jefferies, Nickolas Lund, and Keven Pesque, earned the Physical Training Excellence award. Two candidates, Logan Porter and Justin South, were awarded the Instructor Recommendation Award. Battalion Chief Karl Steadman was the lead instructor for the semester and Firefighter Will Mackintosh was the assistant lead instructor. Andy Byrnes is the RCA course coordinator.

On May 6, 2013, in a unique graduation, all six recruits opted to have Training Captain Les Goodwin pin their badges on. The decision to alter tradition stemmed from the respect the recruits have for Captain Goodwin. Both the department and the recruits are grateful for this graduation; due to budget cuts required by the city the department was unsure whether or not a graduation would even take place.
On March 19th the Certification Council approved two new disciplines of Rescue Technician for certification: Trench Rescue and Structural Collapse Rescue. These levels meet all requirements of the National Fire Protection Association (NFPA) standards. The updated Rescue Technician standard is available by calling the Certification Office at 1-888-548-7816, or online at http://www.uvu.edu/ufra/certification/standards.html.

The Certification Council would like to recognize and extend a voice of appreciation to the following fire service professionals for their work on Trench and Structural Collapse Certification standards. These individuals devoted many hours to reviewing the National Fire Protection Association (NFPA) standard, Certification Test Bank, and developing the skills for this standard. Thanks to all committee members for a job well done!

**Trench Rescue**
- Terry Addison, Battalion Chief South Salt Lake FD
- Steve Crandall, Captain Salt Lake City FD
- Darren Inlay, Captain St. George FD

**Structural Collapse Rescue**
- Steve Lawrence, Engineer Unified Fire Authority
- Christopher Maxwell, Engineer South Davis FD
- Ken Aldridge, Captain Salt Lake City FD
- Nick Glagola, Captain Salt Lake City FD
- Corey Cluff, Captain Pleasant Grove FD
- Travis Hobbs, Captain Unified Fire Authority

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**Glazed Meatloaf**

Recipe and photography provided by Good Housekeeping

Serves: 8
Total Time: 1 hr 35 min
Prep Time: 35 min
Oven Temp: 400

- 1 cup(s) quick-cooking oats
- 1 egg
- 1/2 cup(s) fat-free (skim) milk
- 1 medium (6- to 8-ounce) onion, finely chopped
- Salt and Pepper
- 1 large (8- to 10-ounce) red pepper, finely chopped
- 3 clove(s) garlic, crushed with press
- 2 teaspoon(s) lower-sodium soy sauce
- 1/4 teaspoon(s) ketchup
- 1 pound(s) 93-percent lean ground beef sirloin
- 1 pound(s) ground turkey breast
- 3 medium carrots, grated
- 2 tablespoon(s) spicy brown mustard

1. Preheat oven to 400 degrees F. Line jelly-roll pan with foil; lightly coat with nonstick cooking spray. In medium bowl, stir together oats and milk until combined.

2. Coat bottom of 12-inch skillet with nonstick cooking spray; heat on medium. Add onion and pinch salt; cook 2 to 4 minutes or until onion softens, stirring occasionally. Add red pepper and garlic; cook 4 to 6 minutes or until pepper softens, stirring often. Transfer to medium bowl; refrigerate to cool.

3. Meanwhile, in small bowl, whisk together soy sauce and 1/4 cup ketchup.

4. In large bowl, with hands, combine beef, turkey, carrots, oat mixture, cooled vegetable mixture, mustard, 2 tablespoons ketchup, pinch salt, and 1/4 teaspoon freshly ground black pepper until mixed.

5. Form mixture into 8-inch by 4-inch loaf on prepared pan. Brush top and sides with soy ketchup. Bake 45 to 50 minutes or until meat thermometer inserted in center registers 165 degrees F.

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**Nutrition Corner**

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• For official UVU tuition/fee amounts go to: http://www.uvu.edu/tuition/tuitionFees12-13a.pdf
• Some courses have “course fees” in addition to tuition.

For more information regarding admissions and registration, call at 801-863-7798 or 888-548-7816 to schedule a phone or office appointment with an Emergency Services Administration Academic Advisor.

FALL 2013 SEMESTER (AUGUST 26 TO DECEMBER 19)

FACE TO FACE CLASSES

ESFF 1000 Introduction to Emergency Services
ESEC 1140 Emergency Medical Technician Basic
ESEC 1160 Emergency Medical Technician Advanced
ESWF 1400 Wildland Firefighting Fundamentals
ESMG 310G Intro to Homeland Security GI
ESMG 3600 Psychology of Emergency Services

ONLINE CLASSES

ESFF 1000 Introduction to Emergency Services
ESFF 1120 FES Safety and Survival
ESFO 1100 Fire Behavior and Combustion
ESFO 1110 Fire Prevention
ESFO 2050 Fire Protection Detection Systems
ESFO 2080 Build Construct Fire Services

ESMG (Online)

ESMG 310G Intro to Homeland Security GI
ESMG 3150 Public Program Administration
ESMG 3200 Health Safety Program Management
ESMG 3250 Managing Emergency Medical Services
ESMG 3300 Master Planning for Public ES
ESMG 3350 Analytical Research Approaches Public ES

ESMG (Online Continued)

ESMG 3600 Psychology of Emergency Services
ESMG 4400 Legal Considerations for ES
ESMG 445G Human Factors Emergency Mgmt GI
ESMG 4500 Customer Service/Marketing for ES
ESMG 4550 Principals Disaster and Emergency Mgmt
ESMG 4600 Public Admin Emergency Management
ESMG 4650 Emergency Services Capstone
ESMG 481R Emergency Services Internship
ESMG 489R Undergrad Research in Emergency Mgmt
ESMG 491R Topics in Cardiology and Medical Trends
ESMG 492R Topics in Trauma and Pharmacology
ESMG 493R Topics in Medical Litigation

RECRUIT CANDIDATE ACADEMY (RCA)

By Application Only. For more information visit http://www.uvu.edu/esa/academics/rca.html or call 801-863-7700 or 888-548-7816

PARAMEDIC

By Application Only. For more information visit http://www.uvu.edu/esa/academics/paramedic_emt.html or call 801-863-7700 or 888-548-7816

Enroll early! Please note that courses are subject to cancellation due to low enrollment.

Please check http://www.uvu.edu/esa/ for current and updated course listings.

CROSSWORD SOLUTIONS:

Save the Date!

September 26th & 27th, 2013
Utah Honor Guard Symposium

Held at the Legacy Events Center in Farmington For more information visit www.utahhonorguardsymposium.com or call Matt Jamieson at 801-390-1205.

UFRA Straight Tip

EARN YOUR EMERGENCY SERVICES DEGREE AT UVU

Now is the time to begin working on your Emergency Services degree or finish the degree you have been working on.

Why should I earn a college degree?

• Personal improvement
• Preparation for promotion
• Expand career opportunities

What degrees are offered?

• One-year certificate – Firefighter Recruit Candidate and/or Paramedic.
• Associate in Applied Science – Firefighter/Emergency Care and Fire Officer.
• Associate in Applied Science – Wildland Fire Management Specializations.
• Associate in Science.
• Online Bachelor of Science in Emergency Services Administration with an emphasis in Emergency Management.
• Bachelor of Science in Emergency Services Administration with an emphasis in Emergency Care.

How do I enroll?

• Apply for admissions by going to: http://www.uvu.edu/admissions/
• If you have attended another college or university, request an official transcript be sent to: UVU Admissions Office 800 West University Parkway MS 106 Orem, Utah 84058-5999

What will it cost?

• Online ESMG courses are $651.00 per class, while most other courses follow the UVU tuition/fee schedule.
• UVU tuition increases every summer.
• For official UVU tuition/fee amounts go to: http://www.uvu.edu/tuition/tuitionFees12-13a.pdf
• Some courses have “course fees” in addition to tuition.

For more information regarding admissions and registration, call at 801-863-7798 or 888-548-7816 to schedule a phone or office appointment with an Emergency Services Administration Academic Advisor.

FALL 2013 SEMESTER (AUGUST 26 TO DECEMBER 19)

FACE TO FACE CLASSES

ESFF 1000 Introduction to Emergency Services
ESEC 1140 Emergency Medical Technician Basic
ESEC 1160 Emergency Medical Technician Advanced
ESWF 1400 Wildland Firefighting Fundamentals
ESMG 310G Intro to Homeland Security GI
ESMG 3600 Psychology of Emergency Services

ONLINE CLASSES

ESFF 1000 Introduction to Emergency Services
ESFF 1120 FES Safety and Survival
ESFO 1100 Fire Behavior and Combustion
ESFO 1110 Fire Prevention
ESFO 2050 Fire Protection Detection Systems
ESFO 2080 Build Construct Fire Services

ESMG (Online)

ESMG 310G Intro to Homeland Security GI
ESMG 3150 Public Program Administration
ESMG 3200 Health Safety Program Management
ESMG 3250 Managing Emergency Medical Services
ESMG 3300 Master Planning for Public ES
ESMG 3350 Analytical Research Approaches Public ES

ESMG (Online Continued)

ESMG 3600 Psychology of Emergency Services
ESMG 4400 Legal Considerations for ES
ESMG 445G Human Factors Emergency Mgmt GI
ESMG 4500 Customer Service/Marketing for ES
ESMG 4550 Principals Disaster and Emergency Mgmt
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When your work is finished, ours begins.

Firefighters are often the first to arrive on scene, and the last to leave. When you leave, you want to make sure the property is secured and the victim well on their way to a full recovery. That is where we come in. Utah Disaster Kleenup offers emergency board up services with the following benefits:

- 1 hour response time
- 24 hours a day, 7 days a week, 365 days a year
- Protect home/business from further damage
- Prevent dangerous conditions from liability issues
- Specializing in Fire and Water damage mitigation

Contact Utah Disaster Kleenup and ask us about our Board Up service and how it can help you.

801-553-1010
www.utdk.com