Clay Springs Fire
Lessons Learned Video
by Steve Lutz

UFRA staff have worked for several months with the Utah State Forestry, Fire & State Lands and the Oak City Fire Department to produce a lessons-learned training video based on Oak City’s experience with the June 2012 Clay Springs Fire. Three firefighters were injured, two seriously, when their military surplus engine was burned over while fighting a rapidly moving fire in cheat grass, sage, pinyon, and juniper. The fuel conditions were extreme and the crew became trapped when fire cut off their escape routes and the men were forced to drive through a flame front. Flames engulfed the engine while two firefighters clung to the tank of the military 5-ton truck.

The video includes interviews with the injured firefighters, telling their story and analyzes issues with standing fire orders and watch-out situations that led to the accident. The Oak City firefighters want to share their story so others can learn and not be caught in a similar situation.

Fire Wardens and UFRA Program Managers will distribute the video and a facilitators guide to fire departments. It will also be available on the UFRA website. The video can be a powerful and effective tool to focus on safety in Wildland basic or refresher training.

photography by Daniel DeMillo
FROM THE DIRECTOR

UFRA SWOT Analysis - Threats

The fourth and final segment of my article on the Utah Fire and Rescue Academy’s (UFRA) SWOT analysis deals with threats. Remember that SWOT stands for Strengths, Weaknesses, Opportunities, and Threats. Private sector companies often use the SWOT analysis to assess internal and external factors that will affect future performance. I think this is a valuable tool to help keep UFRA on track with our Strategic and Operational Plans and to provide us with an ongoing “critical assessment.” Think of it as organizational situational awareness.

Unlike our private sector partners, UFRA doesn’t exist in a traditional competitive market. We have the luxury, through legislative action (state law and administrative rules), to be designated as the state’s primary fire training organization and have a restricted funding source with very clear parameters on how and for whom the funding can be spent. However, this does not mean we are without multiple threats—some external, most internal. I will discuss three threats, and you know all of these threats: UFRA, yourselves, and tradition.

The primary threat to UFRA is… UFRA! Yep, it’s us. As you do no aware, we evaluate every aspect of each course we deliver. We are obsessed with finding our problems before someone else does. We are concerned with relevant and accurate curricula, credible instructors, and an exacting certification program that ensures competency in those we test. We analyze the data in several different ways in an attempt to find our “holes.” At the end of the day, regardless of whether we are looking at volunteer vs. career, large department vs. small, rural vs. Wasatch Front, or county vs. county, the results are nearly the same: UFRA’s approval rating is consistently above 95%. Recently, we ran the numbers from the surveys that had been completed for all Salt Lake County departments, specifically from July 1, 2013, to present (approximately 17 deliveries). The result was a 96.88% approval rating with 1.7% disapproval. Now some companies/organizations may be satisfied with a 95% approval rating. We are not. We refuse to be complacent with the numbers. UFRA is far from perfect, and we know it. We have room for improvement in all divisions. You can ask any Assistant Director or Program Manager, and he or she will be the first to tell you so. Perfection is our goal; we’ll settle for excellence. We owe that to you.

Second on my list of threats is you: the Utah firefighter, company officer, or chief officer. I think this for a few reasons. First is complacency. Remember when you first got on the job and you loved to train? How’s that attitude after 5, 10, 15 years? Sometimes that the training stops when you promote. Just the opposite is true. That’s when the training and education should kick into high gear. BEWARE of the company or chief officer that isn’t encouraging—no, demanding—his crew, shift, or department to train and does not have his or her nose in the books! That is your red flag. Someone may not be prepared…and that’s really bad in our business. It’s not the complicated stuff that I worry about; it’s the basics. When was the last time you saw an “advanced” mistake on the fireground? On a daily basis, you, your crew, and your department need to be training on the basics. Don’t believe the hype; not one of you is so good that you shouldn’t be training every day. My assertion is made true by simply reading the Line of Duty Death (LODD) investigations over the past 10 years — no, the past 100 years. We continue to injure and kill ourselves because we are not adequately trained and prepared. We fail to effectively communicate during emergencies. We consistently fail to use THE Incident Management System that forces incident commanders to account for their companies by knowing where they are, and what they’re doing? Firefighters, if you don’t see your company and chief officers engaged in some type of ongoing, basic Command Training, worry — worry a lot. My guess is they don’t send the Navy SEALs home on vaca-
tion until the next war breaks out just because they’ve shot their weapons 100 times and must be experts? Lean into the threat of complacency. Train more.

Another threat is the fire service’s obsession with tradition. The United States fire service: one hundred years of tradition unaffected by progress. Tradition may be a threat that places us all in danger. Just because you’ve done something “forever” doesn’t mean it’s right, nor does it mean there isn’t a better way. Whether it’s delivering training courses or fighting fires, we all need to accept that technology and the research (that’s a trick word for education) that created it has and will change how we do business. We best accept it now or face the consequences, which, in our line of work, are not good. For the best chance of success, chiefs owe it to their firefighters, and the people they serve, to “frontload” themselves with the latest technology, whether it be in personal protective equipment, communications, training platforms, or the latest in tracking systems for personnel during emergencies. In order to do that, we must be willing to let go of the past and realize “we’re not in Kansas anymore” (ask the senior member on the crew to explain that).

In the future, the articles written by the UFRA Director, the State Fire Marshal, and the President of the State Fire Chiefs Association will be condensed into a one or two page series of short information items, to allow more space for, wait for it, more articles on basic fire training. Expect other changes to the UFRA Straight Tip as we try to better serve you—the firefighters of Utah.

Stay safe,

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. Hugh has worked at the Utah Fire and Rescue Academy since 2005.
FROM THE STATE FIRE MARSHAL
Firefighters and Cancer Issues – Part II

The legislative session wrapped up on March 13, 2014. We have been tracking over 15 bills with various connections to the fire service and had success with the following:

• Positive effect in schools with AED funding and CO detection coverage.
• Helped ensure purchasing through the GSA for wildland gear and supplies.
• Supported 911 funding.
• Modified the fire code to move some positive developments forward and promote a level playing field with regard to fireworks restrictions.

Thanks to all of you who have helped our endeavors during the legislative session and have those positive relationships with your elected officials. Your support becomes extremely valuable in getting things done!

Thanks also for your continued support of Winter Fire School (WFS). As many of you know, Governor Herbert appointed Commissioner Keith Squires to that position in July and it was his first opportunity to see any firefighter training. He spent a full day on Friday (the first day of WFS) touring the Dixie Center and going to some of the outlying stations and venues where training was occurring. I can share with you that he was impressed by what he saw and experienced. I appreciate you for being willing to meet him and share some of your stories and experiences. In the vendor exhibition area, I had to mention to him that he could buy quite a few Highway Patrol cars for the cost of a single fire engine. I know that he now has a greater appreciation for what you do, the financial difficulties you are working under, and the dedication you have in serving others.

We’ve hired a new LP Gas inspector and have sent Mat Sacco to POST; he will begin his arson/fire investigation training soon. For those of you who know Howard Lincoln, he will be retiring on May 1 and deserves your thanks for the many hazardous materials classes that he has delivered all around the state over the past 10 years. He will be missed, that’s for sure.

Please know that our thoughts and prayers are always with you and we want you to be safe out there.

Take care and be good!

Coy

Coy D. Porter retired from Provo Fire & Rescue after 30 years of service; he then worked for almost four years as the Assistant Director of Training at UFRA. Porter enjoys his association with the firefighters of Utah in his position as State Fire Marshal.
Message from Utah State Fire Chiefs Association

Are We Ready?

A firefighter will be called upon many times during one’s career to perform at his or her physical and mental peak, and this expectation has no advanced notice. The luxury of knowing when an incident will occur, how difficult and demanding it will be, or how it will tax the individual or crew both physically and mentally, does not exist.

There is nothing better than belonging to a modern fire department that is progressive enough to realize the importance of a structured physical fitness program. Some departments do not have the funds to acquire great equipment, and the ability to schedule in fitness time can be difficult. The reality is, you can’t, no matter what the circumstance, discount the importance of being 100% ready, both mind and body, for an incident.

So, how much is not enough or how much is too much? How do you work hard enough to be physically fit, both cardio-vascular endurance and adequate strength to get the job done? How can you maintain the balance in doing it, such as increased injuries, decreased turnout times, neglected station duties, etc.

Finally, we must be aware of our surroundings, of the public who pay our wages, and our fellow city employees. We must never pass up the opportunity to engage in a positive way to educate and even help them with their needs. The weight room or gym can be an intimidating place if one is not familiar or new to this arena, how great would it be to have a firefighter stop what they are doing and help someone or give them some guidance or direction. We must never forget what our job is and who we serve.

Gil Rodriguez has worked for Murray City Fire Department for 30 years. Rodriguez is originally from Los Angeles, California. He attended college at Southern Utah University, and upon graduation he moved back to Los Angeles, where he taught for three years. He moved to the Salt Lake area in 1981, where he taught for three years at South High School before getting hired by Murray City Fire Department in 1984.

SCIENCE AND TECH
ON-SCENE: INCINOTES IPAD™

by Steve Lutz

One of the most tedious, yet important duties at a wildland fire or other extended incident is documenting what is going on so that we don’t miss important command factors and decisions. We keep track of events to establish a “paper trail” to protect ourselves. PAR Boards, checklists, printed forms, and similar systems provide simple ways to keep track of some things but they don’t provide a permanent, real-time record that is easy to use so you can manage the incident and share information with others. ICS 201 documentation such as the Incident Organizer has become standard for many agencies but it’s a lot of paper to keep track of.

Turns out, there’s an app for that! Incinotes iPad™ is an Innovative Solution for Incident Command System 201 Documentation (Incident Organizer). Incinotes provides continuous, situational awareness for improved command response and safety for all-risk incidents. Incinotes is the first ICS 201 documentation application for the iPad™ and makes incident documentation simple and easy.

The team behind the app includes Will Spyrison, the Incinotes Co-Founder and Wildland Fire Specialist. Will is a retired Division Chief for the US Forest Service, Los Angeles River Ranger District, and Angeles National Forest. He began his firefighting career in 1977 with the Fulton Hotshots of the Sequoia National Forest and served with the Ojai Hotshots from 1979 to 1982 on the Los Padres National Forest. In 1995, Will made Battalion Chief and served in the position for eight years on the Los Padres National Forest. I asked Will why he developed the App. He told me that he was the IC on a catastrophic fire in Southern California that resulted in deaths, lots of WUI destruction, and eventually lawsuits. He said he had “meticulously documented everything on paper and that had saved his butt.”

He knew there had to be a better way. It had to be easy, electronic, shareable, and adaptable to any kind of incident: wildfire, structure fire, HAZMAT, flood, hurricane, etc. He and the team have largely succeeded in inventing and continuing to refine the product that they are passionate about.

I recently used Incinotes to manage and document a fairly complex training program development project that involved doing a controlled burn among other elements that would be found on a real fire. I found it easy to use, like most iPad™ Apps.

A key feature is being able to share information in real time with others on your team who have iPad™, the app, and Wi-Fi or cell data capabilities. Check it out at http://incinotes.com/index.html.
Averting an urban interface disaster

Each year, the Sandy City Fire Department fights numerous grass fires in the 646.39 acres that make up the Dimple Dell recreation area. Dimple Dell is a popular place due to its numerous horse trails and pedestrian walkways. In addition to recreation, there are numerous residential areas that line the recreation area as well as Dimple Dell tracks - an east to west route through the city. Each spring and summer, this area is prone to grass fires and due to the high risk of loss of property, the neighborhood patrols focus heavily on this area.

Sandy Fire received a $300,000 grant to help with the firefighting efforts in this area. Firefighter Craig Erickson was the coordinator of this monumental event, and Sandy Fire responded to this area. During the summer of 2013, the responses to this area had been greatly diminished. The community has greatly benefited from this project by reducing the fire load in this area, and reducing the risk of a major wildland-urban interface incident from occurring.

In addition to the Community Wildland Protection Project, Sandy Fire is taking a proactive role in reducing the risk in this area. Administrators have asked fire crews in this area to preplan fire responses to incidents. Fire crews have preplanned the fire gate locations along the recreation area to reduce response times.

Each wildland season, Sandy Fire is very proactive in pre-planning this area. The preplan efforts of fire crews help to minimize confusion during response, creating an efficient response to incidents in this area. These efforts create a safer environment for the community and firefighters alike.

References


Utah Fire Officer Designation Program is Ready

About 10 years ago the International Association of Fire Chiefs released the first version of their Officer Development Handbook. It laid out a model for prospective and current officers to prepare for leadership positions using a combination of training, education, certification, and experience. Utah has recently completed a project to adopt that model. While NFPA Professional Qualifications Standards present a minimum set of knowledge, skills, and abilities, the Utah Fire Officer Designation Program (UFODP) offers a more optimum set of qualifications that can provide a firefighter with a pathway to a successful promotion to company officer, and eventually will provide basis for a system which departments can use as part of a career ladder through chief levels.

The first level that the Utah program offers is the Supervising Fire Officer level. This level is intended to help develop excellent company officers. To achieve designation as a Supervising Fire Officer and receive a certificate of achievement, this level requires that the applicant complete a portfolio documenting how he or she meets the requirements. An application and information on the program can be found on the UFRA website at http://www.uvu.edu/ufra/resource_center/fodp.html.

Zach Robinson has worked for the Sandy City Fire Department since the spring of 2006. Currently, he holds the rank of Engineer/Paramedic. In addition to working full time for Sandy City, Zach works as a flight paramedic for AMR. He also has recently completed his Master of Public Administration degree from the University of Utah. Zach is currently assigned to Station 32 on C Platoon.
Firefighter Physical Ability Testing

While getting my haircut recently the stylist asked me, “If I was in a burning building, could you get me out?” I answered with a quick, “Absolutely, the ride might suck but I’d get you out, quick.” Many citizens subconsciously ask the same question when viewing firefighters. They think, “Hmmm, I wonder if that firefighter could do the job when the chips are down?”

Most career firefighters can indeed perform “the job” when he or she is a new-hire; but as the years go by, is the firefighter we hire today can still do the job 10, 20, or 30 years after his or her hire date?

Most firefighters familiar with the evolution of this type of testing understand that what should be demonstrated on an annual basis is a minimum standard. These tests should not be allowed to become competitive or any form of maximum level testing. Physical ability tests are also referred to as Task Performance Tests (TPT). Should the new-hire firefighter be tested to a more stringent standard than a firefighter of ten years or more? Should an injured firefighter have lesser TPT standard during a “return to duty” test? In essence, if we argue different standards for new-hire, return-to-duty, and incumbents (veterans) then we are saying the person who trudged through a run necessarily be unable to do the job? These issues caused the fire service to move from fitness testing to what is known as “functional fitness testing.” That is, a physical ability test measuring one’s ability to do the actual function or work of a firefighter.

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That’s a bit of the reasoning behind functional fitness testing, but how do we determine critical tasks and time standards? To be legally defensible the word “validated” enters the picture. Firefighters sitting around a coffee table developing a test may not be the best method of creating a legally defensible test. A job task analysis including incumbent surveys, pacing studies, geographical district surveys, and weights and measures of tools partly describe the process of validation. Validating a TPT is rather scientific in nature, time consuming, and can be somewhat expensive. Of course, the cost of not having a validated TPT in potential legal liability must be taken into consideration.

Some believe new-hire testing and incumbent testing should be very different. Part of the reasoning suggests that a new-hire test is simply too easy for seasoned professionals. Keep in mind; these tests are a measure of one’s physical ability to do the work of a firefighter. A TPT is not a skills-based test that measures mental/ cognitive aptitude and ability but rather is meant to measure physical ability related to the critical tasks of the job as a firefighter. In other words, a good TPT should be a measure of functional fitness from the day of the firefighter candidate testing until retirement.

The implementation of a TPT must be accompanied with a functional fitness program. “Beach muscle” exercises have little value in improving firefighter performance. Certified Fitness Coordinators (a.k.a. Peer Fitness Trainers) can help guide and improve the performance of a firefighter who might otherwise struggle in passing a TPT. These fitness coordinators help achieve the overarching goal of the TPT and functional fitness program, which is to improve organizational performance.

As professional firefighters, we must make it our personal interest to value the safety and security of our citizens first and foremost. Nothing demonstrates one’s personal commitment to his or her public’s safety more clearly than demonstrating, throughout our careers, that we have maintained our physical performance as a firefighter to an acceptable level.

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.
Interview Skills 101

The ability to enter an interview with a calm, confident demeanor and answer questions with a logical flow of information is something that eludes most of us. In the public safety sector, this is only part of the total score. It will be one of several components, like a written test and a physical agility test for entry-level firefighters, or a written, command scenario, inbox exercise, and possibly several other exercises for promotional testing. The interview is usually a significant portion of the process and many times it will be 50% or more of the total combined score. However, it is usually the portion that gets the least amount of preparation.

Some people might think about the interview, but rarely do much preparing until confident he or she will be moving on to that step in the process. Effective interview skills need to be developed and constantly practiced to be maintained. Anyone looking to start applying for jobs or promoting within his or her department, should begin developing and honing their interview skills 6 to 12 months before the interview will take place.

Preparing for an interview includes learning to correctly format your answers. The number one rule for any question you will be asked is: always end the question on a positive note and tell the panel how you will be a benefit to them as an organization. Anyone, who has had any sales training, will tell you that you must be able to demonstrate, view, insight, style, or whatever your answer was positive note and tell the panel how you will be a benefit to them. You must look at the interview as if you are trying to sell a product. The panel is the customer, you will benefit them. You must look at the interview as if you are married to your beautiful wife Linda, we have two children; Mary, age 5, and Bobby, age 3." There is value to the panel in this statement. It suggests you are stable, and have the possibility of staying with the organization for a fair amount of time. Next, tell them about your education, and then experience. That shouldn’t be much longer than 45 seconds to a minute. Now, this is the most crucial part. Tell them three or maybe four traits, characteristics, insights, and skills, which set you apart from the rest of the field. Explain your logic and finally, why these will be of value to their organization.

Behavioral Questions – Behavioral questions may also be called situational. The premise behind them is that your past responses to a situation are good indicators of your future responses. They will usually start the question with “Tell us about a time when you…” or “Describe a time when you…”

Most experts will tell you to use the acronyms SAR or STAR. Tell your interviewers about the Situation or Task, the Action taken, and the Results of your action. Then end with how it benefited the organization, and finally how it will benefit theirs as well.

General Questions – General questions are just that, general. They will be something like: “Tell us about your style of leadership.” Many of these don’t have a right answer. The panel wants to hear your answer along with the thought process you used to adopt your particular point of view, insight, style, or whatever.

The format for these answers is opening statement, body, and closing statement. Below is an example of how to format a general question and answer.

Opening statement
The opening is when you state three or four well thought out bullet points that set you apart from the other competitors.

Transition phrase
You should use transition phrases, such as “Let me explain…” to easily flow from the opening to the body.

The Body
The body is the place where you completely and concisely explain each point.

Closing statement
The closing statement should recap what you just told the panel and tell them why and/or how it will benefit their organization.

If you use this format of opening statement, the body and closing statement, your answers will roll off your tongue in a logical flow, and you will receive a higher interview score.

At this point, we have discussed why the proper preparation is important, and how to format your answers for different types of questions. In the last part of this article, I have listed some of the basic rules you must honor in every interview.

1. Be early. If you are delayed en route, you will still be on time.
2. Your suit or uniform should be clean, pressed, and fit you. You only get one chance to make a first impression.
3. Don’t wear cologne or perfume. What smells good to you may not agree with someone on the panel.
4. If you have tattoos or piercings, cover them up and/or take them out.
5. When you are brought into the interview, shake hands with a grip equal to that of the person you are shaking hands with, look them in the eye, state their name and title back to them, and thank them for allowing you this opportunity.

6. If you are sitting at a table, sit up straight, with your hands on the table, and lean forward slightly. This tells the panel, non-verbally, that you are interested and ready to proceed. If you gently clasp your hands together in front of you, then you won’t do irritating things like tapping or drumming your fingers on the table.
7. Engage the entire panel when answering a question. Start with the person who asked the question, and then systematically move in either direction, timing it so you end the answer with the same person you started with.
8. If you don’t have an answer, admit it. But, tell them the process you will use to find that answer. Don’t go on a “fishing” expedition. You’ll just waste the panel’s time and irritate them.
9. Have one or two well-thought questions ready for the panel, since you may be given the opportunity to ask a question.
10. At the end of the interview, shake hands with the panel members and thank them for the opportunity.

There is much, much more to learn about the process that I have not touched on here. It includes how to practice, how to refine your answers, how and who to recruit for mock interview panels, how to conduct mock interviews, how to mitigate the stress and tension that almost always comes with the process, and how to visualize and harness the power of your sub-conscious mind and use it to your advantage in the interview. I am convinced that mastering interview skills is one of, if not the most important life skills anyone can learn. It will open the doors of opportunity, lead to greater fulfillment, and allow you to make hundreds of thousands of dollars that you otherwise wouldn’t make in your lifetime. I know you can learn how and I would love to help you.

Dave Owens is an interview coach with a great track record for helping others who want to excel in any career or opportunity. For more information, contact Dave at Life Skills Technologies via website www.lifeskillstech.com or call 801-540-0225.
Certification Updates

- The Fee Structure implemented on July 1, 2013 applies to Utah fire departments only. Other agencies such as EMS, sheriff, ATC’s, National Guard, etc., will be charged the original fee of $40 per certification.
- Please remember to schedule examinations for your departments 30 days in advance.

HazMat Updates

- The HazMat Awareness/Operations standard has been updated to the 2013 edition of the NFPA standard. The new standard is online and ready to go.
  - The written exam is referenced to “IFSTA, Hazardous Materials Managing the Incident, 4th edition, 1st printing.”
  - Departments will be allowed to test to the 3rd edition until July 1, 2014. After that date all departments should be prepared to test to the 4th edition.
- When scheduling exams, please let Hilary know if you need the 3rd or 4th edition exam.
- The HazMat Technician standard has been updated to the 2013 edition of the NFPA standard. The new standard is online and ready to go.
  - The written exam is referenced to “Jones & Bartlett, Hazardous Materials Managing the Incident, 4th edition.”
  - Departments will be allowed to test to the 3rd edition until July 1, 2014. After that date all departments should be prepared to test to the 4th edition.
- When scheduling exams, please let Hilary know if you need the 3rd or 4th edition exam.
- The HazMat Technician standard has been updated to the 2013 edition of the NFPA standard. The new standard is online and ready to go.
  - The written exam is referenced to “Jones & Bartlett, Hazardous Materials Managing the Incident, 4th edition.”
  - Departments will be allowed to test to the 3rd edition until July 1, 2014. After that date all departments should be prepared to test to the 4th edition.
  - Standard: http://www.uvu.edu/ufra/docs/certification/levels/HazMat%20Tech.pdf

Fire Instructor Updates

- The Fire Instructor I/II standard has been updated to the 2012 edition of the NFPA standard. The new standard is available online or by calling the certification office.
  - The written exam is referenced to “IFSTA, Fire and Emergency Services Instructor, 8th Edition.”
  - Departments will be allowed to test to the 7th edition until April 1, 2014.
  - When scheduling exams, please let Hilary know if you need the 7th or 8th edition exam.
  - Standard: http://www.uvu.edu/ufra/docs/certification/levels/Instructor_I_II.pdf

Wildland Updates & Reminders

- The Wildland Firefighter I and II standards have been updated to the 2012 edition of the NFPA standard. Be sure to check out the new standard online or contact the Certification Office to have a standard mailed to your department.
  - The texts for the written exams did not change; therefore there is no extension on written exams.
  - Wildland II Standard - http://www.uvu.edu/ufra/docs/certification/levels/WLFF_II.pdf
  - I-700 is required for all candidates wishing to certify at the Wildland Firefighter I level. This is for NEW certification only, not for recertification. Departments should send a copy of the candidate’s I-700 certificate of completion to the Certification Office along with the Request for Certification Office along with the Request for Certification Office along with the Request for Certification Office along with the Request for Certification Office along with the Request for Certification Office along with the Request for Certification Office along with the Request for Certification Office along with the Request for Certification Office along with the Request for Certification Office along with the Request for Certification Office along with the Request for Certification Office along with the Request for Certification Office along with the Request for Certification Office. For more information on the I-700 course contact your area FMO’s.
  - As a reminder, if you are using the 1.5-mile run to complete the requirements for the yearly physical fitness test for your red card, there is no time adjustment for altitude. All candidates must complete the run in 11:40 or less.
  - When submitting for wildland recertification, please make sure that the physical fitness test and the refresher are within the current year in which you want to participate. For example, if you are requesting recertification any time within this year, your dates must reflect 2014. Dates from 2013 will not be accepted.
The Yarnell Fire: Part One: A Cry for Help

The Granite Mountain Hotshots’ last moments, before they were overcome and perished in a wall of fire, were punctuated by a cry for help as they deployed fire shelters. This last cry for help is representative of the Yarnell Fire itself. Fire managers and leaders on the fire were also overwhelmed by the fast-moving and rapidly changing fire. From the start of the Yarnell Fire there was a sequence of lost management opportunities to keep up with or stay ahead of the fire, beginning with misreading the severity and potential of the fire environment, to not having enough fire resources to manage the Yarnell Fire simply were too far behind the fire. In order to clearly identify how and when these missed opportunities might have mitigated the situation as it unfolded, we should first look at the sequence of events, followed by specific recommendations for more effective management considerations.

The Fire “Size Up”

Immediately prior to the Yarnell Fire start, a large fire burning close by, the Doce Fire, offered important information about the current fire environment. The Yarnell area, along with the Doce area, had already been issued a red flag alert for extremely low live and dead fuel moisture. When the Yarnell Fire was discovered, this was the “size up” given by the air attack first over the scene: “It’s one half acre in size and 80% out.” This incomplete size-up, the lack of recognition of the red flag alert, and the failure to gather critical information from the nearby Doce Fire were significant oversights. Because of this inadequate size-up, the Yarnell Fire was determined to be a minor fire threat unnecessary to engage at night, since there was potential for a lightning hazard to firefighters. Due to the lightning risk and helicopter duty schedule, the fire was not engaged until 17 hours later, despite the fact that easy access was available through a jeep trail leading to the initial fire start. (Ironically, with a growing awareness of the fire’s potential and need to contain the fire, and after failing to contain the blaze the next day, firefighters spent the following night on the fire despite the same threat for lightning.)

The Fire Escapes Control as Alignment Factors are Misread

Later in the day of June 29, the Yarnell Fire escaped from the suppression efforts of 13 firefighters led by a lone Type IV Incident Commander. Even though the hottest part of the burning period for that day had passed, the fire continued to burn and move into better alignment with wind, slope, and preheated fuel. It grew quickly to 35 acres, increasing to an estimated 100 acres later that day. The Incident Commander on the fire requested a Type II Incident Management Team, noting that the fire would likely threaten the community of Yarnell. An order for a Short Type II Team was placed, scheduled to arrive the next morning.

Once again, as the Yarnell Fire escalated, information was added and situational awareness became clearer. The fire burned aggressively into the night, and by morning on June 30 was no longer a small fire, but a large fire with no anchor points. Remarkably, the fire had demonstrated out-of-alignment behavior by exhibiting aggressive growth at night despite the absence of heating from solar radiation. This atypical behavior of forces should have alerted management to expect radical fire growth when conditions were again aligned during the next burning period.

In addition, the fire was ruled by topography until the wind increased to the point it overcame the variations of slope and became a wind driven fire. The fire was now large enough to be aligned with fuels, slope, and wind from any direction. To make matters worse, the weather forecast for June 30 was for triple digit temperatures, with low relative humidity and thunderstorms, creating the possibility of dangerous, changeable winds. Additional alignment factors included the red flag alert for low live and dead fuel moistures as well as the ERC value in the 97th percentile, and alarmingly low thousand-hour-fuel-moisture readings from the nearby Stanton fire weather station. The resulting effect of this alignment of extreme thresholds contributed to the explosive fire behavior the afternoon of June 30. These extreme conditions had created a fire poised to explode into a major fire event and burn into the Yarnell community. The conditions necessitated a much greater response than a Short Type II Team to transition. Apparently, the magnitude of the situation was inaccurately assessed, resulting in management’s under-reaction. Efforts from the State’s fire management group and Short Type II Team to manage the Yarnell Fire simply were too far behind the severe conditions and escalation of the fire. The Type II Team was in critical Short Type II status and the right kind of resources, which added to the confusion and cycle of missed opportunities that led to the entrapments and fatalities.

June 30: Transitioning Command in a Severe Fire Environment

In response to the worsening situation, the incoming Fire Overhead Team, with its variety and number of fire suppression resources, brought hope that the Yarnell Fire would be controlled and become just another lightning-sparked wildfire statistic. In typical firefighter fashion, the crew looked forward to meeting an exciting challenge, while providing a public service in responding to a fire. However, the piecemeal way these fire resources came together would soon change the mood from enthusiasm to frustration. Evidently, two Type II incident commanders, one operations section chief, and a logistics chief (to arrive at 1600 on June 30) were ordered as separate individual resources rather than as a unit to comprise the fire overhead team. We know the team’s briefing with the Arizona State Division of Forestry included only a few team members. The rest of the team members and resource orders would have been filled and arrive at different times during the operational period. These additional resources coming in at different times would create briefing problems, in turn, leading to confusion and havoc out on the fire line.

As the make-shift incident management team gathered and tried to organize, the fire continued to increase in size and intensity, responding to hotter and drier environment. Influenced by the alignment of severe fire conditions, the fire had grown during the night to an estimated 300 to 500 acres with no control points. Daybreak found the fire poised in full alignment with dense pockets of fuel, with steep slopes, canyons and ravines acting as chimneys, amplifying hotter and drier aspects. All these conditions signaled a serious fire behavior. The Dude Fire, July 26, 1990, that claimed the lives of 6 of the 11 firefighters who deployed fire shelters on that day. In addition to the known conditions on the Yarnell Fire, the energy release component, coupled with live and dead fuel moistures, constituted extreme fire severity, but the values of these measurements were unknown to the incident management team and firefighters.

Confusion and Frustration

Once incoming fire suppression resources began working on the fire, confusion, and frustration became the “norm.” Below is an excerpt from the Arizona Republic article citing interview notes from Serious Accident Investigation conducted in Arizona.

• Throughout the interviews, key figures in the fire-suppression effort criticized almost every aspect of planning, oversight and execution.
• Members of the Blue Ridge crew said they dealt with a leadership dispute among supervisors and got no instructions, records show. They characterized the overall operation as “total non-stop chaos” and “Swiss cheese” because it was so full of holes.
• The Blue Ridge members said that they witnessed “a near miss” with aircraft, whose pilot and crew sounded, “overwhelmed,” adding, “the air show seemed troublesome.”
• Blue Ridge described overhearing the last transmission from Granite Mountain and then sitting in a truck to “listen for anything on the radio.”

Continued on next page
have demonstrated sensible responses under these pockets of excellence within fire organizations that At this point in the narrative, we must acknowledge Reading the Fire Environment and Fire

caught in harm’s way, to safe haven. stationed at Granite Mountain, and a dozer operator Ridge Hotshots successfully escorted both the Lookout even as the Yarnell Fire raged toward disaster, the Blue

stood at Granite Mountain, and a dozer operator caught in harm’s way, to safe haven. Meanwhile, Chuck Maxwell in Albuquerque, New Mexico, was poised to perform another lifesaving intervention, from his post leading the Regional Fire Behavior Predictive Center. From his remote location, he wondered if he should forcefully intervene, after seeing the alignment of severe environmental factors which, when accelerated by predicted micro-bursts of out-flow winds from thunderstorms, would make the Yarnell Fire explosively dangerous. However, due to management protocols, he could not offer his observations and concerns without a formal request from the proper officials. Previously the Fire Behavior Predictive Center had appropriately issued a red flag alert for extremely low live and dead fuel moistures, providing an added component in evaluating a severe fire environment, magnifying the risk for extremely dangerous fire behavior in the Yarnell area. While individual hotshots were aware of Maxwell’s warnings, management leadership failed to recognize his assessment. In the next issue – The Yarnell Fire – Part Two: Better Use of Resources.

As the make-shift incident management team gathered and tried to organize, the fire continued to increase in size and intensity, responding to hotter and drier environment. Influenced by the alignment of severe fire conditions, the fire had grown during the night to an estimated 300 to 500 acres with no control points.

Furthermore, the Superintendent of the Blue Ridge Hotshots questioned the Granite Mountain Hotshots about their escape route, out of concern for their safety. He wondered if the Granite Mountain Hotshots’ escape path would lead them straight through the fire. Unfortunately, through miscommunication, he felt satisfied that they had laid out a clear route to safety, and sadly, did not pursue the matter further.

The authors of this article are a group of five wildfire experts from different geographic parts of the west: Doug Campbell, author of CPS and retired fire manager, USFS, R-5; Will Spyrison, InciNotes Co-founder, division chief, USFS R-5; Jerry Chonka, retired fire manager, USFS, R-2 & 3; Paul Orozco, retired fire manager, USFS, R-2 & 3; and a preferred to be anonymous retired fire manager, USFS, R-3 (reviewed fatality site). Each have a unique wildfire specialty and combined boast 200 years of combined fire experience. Ruth Harrison was the editor for this article.

Meet Utah’s New State Forester

Utah has a new State Forester and Director of the Division of Forestry, Fire & State Lands. In December, Brian Cottam was selected to head the forestry, fire and sovereign lands component of the Utah Department of Natural Resources. Cottam has worked as the Deputy Director for the Division since February of 2013. He brought to the Division, extensive experience in public lands policy and planning as well as natural resource management. As Deputy Director, Cottam oversaw the Division’s area offices and the Lone Peak Conservation Center, which houses the state’s wildland fire crews. His strategic approach to management has created positive momentum in each program area and under his leadership; the Division is entering an era of innovation and vision toward the future.

Prior to working at DNR, Cottam worked as the Associate Director of Regional Services at Southern Utah University (SUU). There he developed partnerships with many local and federal government leaders that continue to benefit the Division and State. Before his time at SUU, he worked in the State and Planning Section of the Utah Governor’s Office of Planning and Budget where he gained experience in wildland fire as the Governor’s Wildfire Liaison. Cottam has fulfilled coordinating and leadership roles in a variety of local and state government agencies including Wayne County Economic Development Director, Greater Flagstaff Forests Partnership Coordinator, and Director of Southern Utah Forest Products Association. He has also been a small business owner and manager.

Cottam received a B.S. in Social Science with a minor in Environmental Studies from Westminster College of Salt Lake City (1995), and an M.S. in Forestry with an emphasis on natural resource and environmental policy from Utah State University (1999). His master’s thesis focused on the Southern Utah Forest Products Association and the development of forest and wood-worker cooperatives.

article and photography provided by Jason Curry
The Oak City Volunteer Fire Department is located in West Central Utah and serves a growing population of approximately 700 residents within a 35-square-mile response area. In addition, the department offers mutual aid to the neighboring fire departments of Delta, Leamington, and Lyndyl. Our department provides structural and wildland fire suppression and first response by department EMT's.

Prior to the 1970s, fires were fought in Oak City by bucket brigade until Delta’s department arrived on scene. In the late 1970s, Corwin Nielson, a retired firefighter, was asked to put a fire apparatus together for emergencies. Nielson fabricated a trailer with a hose reel and nozzle, which hooked to a hydrant and could be pulled by a truck.

After the 1981 Clay Springs Fire, the Federal Government loaned Oak City a Jeep with a tank and reel in the back to fight brush fires. Over the past several years, the department has obtained equipment from state grants, FEMA’s Assistance to Firefighters Grant program, and the Millard County Fire District. Leon Alldredge was appointed as the first chief of Oak City and kept the Type 6 engine at his home, since a station did not exist. Oak City’s first fire station was built in 1983 and housed the Type 6 engine as well as an A1951 LaFrance, open cab, structure engine given to the town by the Intermountain Power Project. The fire department was officially organized in April 1983 with 15 members and Leon Alldredge as chief. He remained chief until his death in 1990. Jack Finlinson was then appointed chief, serving until 2005. Clark Christensen served as chief during 2005, followed by our current chief, Russell Dewsnup, who was appointed December 2005. The department is staffed with one fire chief, one assistant chief, one training officer, one secretary, three firefighter/EMT’s, 17 Wildland I’s, two Wildland II’s, and one ICT5. Training is a challenge, as many of the department members are employed with shift work. We are working toward getting our structural FFT1 and FFT2.

In 1986, the department purchased a military 6x6 with a 1,000-gallon tank and equipped it as a tactical tender. This one, nicknamed Rambo 1, was replaced with another one in 1995, which we’ve nicknamed Rambo 2. In 1990, the department acquired its first Gamma Goat and equipped it with a 250-gallon tank and reel. The department now has three of these Type 6 vehicles. Our apparatus includes one new pumper, one 1,000-gallon tactical tender, three Type 6 Gamma Goats, one Type 6 brush truck, and one EMT/support vehicle. In 1991, the fire district acquired a 1991 “Class A” structure engine for Oak City, which we recently replaced with a 2014 engine.

Through the years, Oak City has been threatened with wildfire. Some notable wildland fires to date have been the 1981 Clay Springs Fire, the 1986 fire, the 1994 Black Willow Fire, the 2000 Mourning Dove Fire, and the 2003 Cascade Fire. In 2006, two wildfires threatened Oak City, and the Devil’s Den Fire in August killed federal firefighter Spencer Koyle. In 2012, the Clay Springs Fire resulted in an evacuation of the city and three volunteer firefighters were injured.

Every year, the fire department sponsors a town dinner during Fire Prevention Week. This includes a meal, fire prevention materials, firehouse tours, and fire truck rides. In February 2013, the Utah State Fire Caucus recognized the Oak City Volunteer Fire Department as the State Fire Department of the Year.
CHIEF PROMOTIONS:

William (Bill) Pope was appointed Chief of Uintah City Fire Department in January 2014. Prior to his appointment he was the Deputy Chief and Fire Marshal. Bill has been in the fire service since 1994 serving as a career firefighter and volunteer in California, Idaho, and now Utah.

RETIREMENTS:

Howard Burnett has retired from the Green River Fire Department after 43 years of service, 38 of which he served as Chief.

Kirk Combe joined the Uintah Fire City Department in 1972, one year after its establishment, and served continuously until 2013. During his time with the Department Kirk served in every available position including Chief of the Department in 1980.

Scott Kendall has been a member of the Uintah City Fire Department since 1981. He retired in 2014 after having served as a firefighter, captain, and deputy chief with the Department.

Mike Leatham retired from the Uintah City Fire Department after 32 years of volunteer service. Mike started as a firefighter with the South Ogden Fire Department in 1981 and later became an inspector. In 1985, he joined the Uintah Fire Department where he served as a firefighter and Fire Marshal.

After 23+ years of service, Engineer Burt Romrell is retiring from the West Jordan Fire Department.

DEATHS:

Sergeant Cory Blake Wride tragically passed away when shot in the line of duty on January 30, 2014. Cory began his career with the Utah National Guard, where he served honorably for 12 years. He then worked for the Utah State Prison as a guard until he accepted a position with the Utah County Sheriff’s Department in 1994 and served for 19 years until his death.

Station 4 was Salt Lake County’s fourth station, which was established on October 1, 1943 in the garage of Glen Hintze on 4800 South Holladay Blvd. At the time of opening it was staffed with volunteer firefighters. Prior to 1943, firefighters would respond to calls in the Holladay area from Station 1, which was located on State Street. Twelve years later, an actual station was built on Holladay Blvd. It was staffed with two full-time firefighters as well as nine volunteer firefighters. Since being built in 1955, the station has had several remodels and additions to help firefighters respond in an efficient and effective manner. However, in 2004 the station was condemned due to aging and was deemed unsafe for the crews to live in. The crews moved into temporary trailers located directly behind the station until a new station could be completed. In 2012, Holladay City broke ground for the new Station 104 that is located on 2210 East Murray Holladay Blvd. The station was completed in December 2013 and the Ribbon Cutting took place on January 7, 2014. The station will house five full-time firefighters that are available 24/7 to serve the citizens of Holladay City.

Historic Fire Station Reopens

Firefighters Helping Firefighters
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Visit www.bamdavishomes.com or www.wesharwoodhomes.com
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braden@fund.com
www.wesharwoodhomes.com
THE ROAD TO MITIGATING CATASTROPHIC WILDFIRE

by Nick Howell, Bureau of Land Management

Our communities and fire service are consistently reminded of the fire-prone nature in which Utah’s landscapes are crafted. Throughout the years, many of us have personally seen catastrophic wildfire become reality. So the ongoing question remains—how do we ensure wildfire protection to our 642 communities at risk and how do we prepare for the next catastrophic wildfire?

It’s no secret to anyone serving in the fire service that throughout most of the 20th century, the United States has waged an “all-out war” on wildfires of all sizes. Since historical fires like the Peshtigo and Chicago Fires of 1871, and the Great Fire of 1910 where hundreds of people died and multiple communities were destroyed, fire management practices and tools have greatly improved. However, more must be done to reduce future catastrophic events that adversely impact our lives and communities.

In many instances natural fire can no longer play a role on the environment, and the Wildland Urban Interface (WUI) is expanding into vegetated areas, larger portions of available fuels continue to demonstrate significant potential to be problematic in Utah’s backyard. Collectively, land managers and WUI homeowners have a responsibility to mitigate catastrophic wildfire to the best of their ability and with available funding.

Mechanical treatments on public, state, and private lands prove to be the most effective measures for keeping wildfires from becoming catastrophic and for mitigating adverse impacts of larger fires. Years of implementation, research, and monitoring for treatment effectiveness support the concept of “go big or go home” especially when it comes to community wildfire protection and rangeland health.

For example, the New Harmony Fire of 2012 in southern Utah escaped initial attack forces and directly impacted the Bumblebee Ridge Subdivision. On June 27, the wildfire quickly intercepted Interstate 15 and forced multiple home evacuations and lengthy road closures. This fire was on its way to becoming catastrophic and extremely large scale. A 1300-acre hazardous fuels reduction treatment, conducted in 2010, was strategically implemented south of the subdivision because Color Country Interagency Fire managers recognized the hazardous fuels risk and the frequent fires that were happening in this area.

When the fast moving fire advanced north from New Harmony, it forcefully reached the subdivision that the treatment was designed to protect within three hours. Although the treatment was designed to be impacted from the west, the fire intercepted the treatment from the south, but the fuel break still made a significant difference in reducing the fire’s intensity and overall size. Defensible space and smaller treatments on and near private land were also instrumental in the outcome of that day.

Not only were interagency fuel breaks effective at reducing the fire intensity, but they also decreased flame length enough that in some places the fire self-extinguished. The fuel breaks worked in tandem with aerial retardant lines to keep active pockets of fire in check, and more importantly helped to keep wildfire from establishing in drainages, tree canopies, and less accessible terrain. Treatments provided firefighters with safe anchor points to fight their way into homes located directly in the fire’s path. These proactive measures undoubtedly narrowed the fire’s width, preventing fire growth from expanding laterally and into residences located to the north and west of the impacted subdivision.

At the end of the day, homes and property were lost but many more homes were saved due to interagency vegetation treatments on public and private lands, combined with aggressive firefighting efforts. The New Harmony Fire of 2012 was contained at 1300 acres and no public or firefighter injuries occurred. With “firewise” building construction, defensible space, and large-scale hazardous fuels reduction treatments in place, “fire adaptive communities” are the best defense against catastrophic wildfire and reducing impacts to Utah’s communities at risk.

This is just one of many examples of large-scale fuels treatments doing what they are intended to do—reduce wildfire intensity—treatments provide multiple benefits to wildlife and help restore the balance needed for a healthy ecosystem.

In the face of declining budgets and reduced personnel, the importance of preventing expensive reactive fire suppression is unparalleled. By eliminating just one Type 1 Wildfire Incident, thousands if not millions of dollars are saved.
On December 18, 2013, Class #67 of the Utah Valley University Emergency Services Recruit Candidate Academy (RCA) held its graduation ceremony. During the program, CAPS Dean, Wayne Dornan, Ph.D., CAPS Associate Dean, Tom Sturtevant, Ph.D., and Emergency Services Department Chair, Gary Noll, M.Ed., spoke to the parents, friends, and family of the class. Candidate Landon Flack was awarded the Outstanding Student Award and Firefighter William Mackintosh was awarded the Outstanding Instructor Award. Candidates Zach Dean, Landon Flack, Benjamin Graham, Justin Hamilton, Austin Hunsaker, Taylor Hoopes, Alexander Sanders, Sterling Wright, and Alex Williams earned the Physical Training Excellence award. Five candidates were awarded the Charles J. DeJournett Recruit Excellence Award & Instructor Recommendation: Mark Burrup, Landon Flack, Taylor Hoopes, Trent Jensen, and Alexander Sanders. Trent Jensen was the class officer. Andy Byrnes, M.Ed., was the RCA Course Coordinator as well as the Lead Instructor for the semester and Captain Merrill Bone was the Assistant Lead Instructor.

RCA Graduation: Fall 2013

On December 18, 2013, Class #67 of the Utah Valley University Emergency Services Recruit Candidate Academy (RCA) held its graduation ceremony. During the program, CAPS Dean, Wayne Dornan, Ph.D., CAPS Associate Dean, Tom Sturtevant, Ph.D., and Emergency Services Department Chair, Gary Noll, M.Ed., spoke to the parents, friends, and family of the class. Candidate Landon Flack was awarded the Outstanding Student Award and Firefighter William Mackintosh was awarded the Outstanding Instructor Award. Candidates Zach Dean, Landon Flack, Benjamin Graham, Justin Hamilton, Austin Hunsaker, Taylor Hoopes, Alexander Sanders, Sterling Wright, and Alex Williams earned the Physical Training Excellence award. Five candidates were awarded the Charles J. DeJournett Recruit Excellence Award & Instructor Recommendation: Mark Burrup, Landon Flack, Taylor Hoopes, Trent Jensen, and Alexander Sanders. Trent Jensen was the class officer. Andy Byrnes, M.Ed., was the RCA Course Coordinator as well as the Lead Instructor for the semester and Captain Merrill Bone was the Assistant Lead Instructor.

RCA Graduation Class #67 Picture (left to right)
Top row: Lorenzo Young, Ryan Merrill, Zach Dean, Sterling Wright, Murray Tucker, Austin Hunsaker, Alexander Sanders, Thomas Smith, Christopher Hendrickson, Josh Swenson, Kevin Casciere, Jonathan Herlewi, Mark Burrup, Casey Smith
Bottom row: Austin Hunsaker, Taylor Hoopes, Michael Coleman, Michael Lyons, Benjamin Graham, Trent Jensen (Class Officer), Alex Williams, Landon Flack, Weston Maurer, Lisa Melvin, Tyson Elwood, Alexander Gerber

Utah Task Force 1 (in alphabetical order)
Aldridge, Ken; Ascarte, Matt; Bailey, Josh; Basket, Scott; Baumgartner, Liz; Bevan, Jennifer; Bevan, Keith; Bishop, Bruce; Black, Matt; BogenSchultz, Nathan; Bone, Merrill; Boshurst, Brandon; Bowon, Steve; Bruss, Sean; Burrow, Michael; Burrows, J. Michael; Barton, Anthony; Cagle, James C.; Caves, Bryan; Chung, David; Conder, Robert; Davies, Adam; Davies, Bryan; Egbert, Joe; Emery, Peter; Evans, Robert; Eyring, Ben; Flood, Mary; Gillam, Jesse; Grant, Frankie; Greenides, Michael; Halladay, Jeff; Hopp, Travis; Holbrook, Jeff; Kay, Nathan; Lawrence, Steve; Lawrence, Trevor; Lund, Jens; Madu, John; Magner, John; McElroy, Laura; Minchow, Karen; Morley, Robert; Obert, Douglas; Orum, Craig; Otzen, Craig; Park, Darren; Pendleton, Chris; Peterson, Marty; Pilgrim, Riley; Plagemann, Keith; Pray, Chris; Rhodes, Matt; Robertson, Jeremy; Rosenblum, Chris; Ross, Darin; Ruschke, Diane; Russell, Wade; Sandstrom, Erik; Sandstrom, Taylor; Schuphaud, Jake; Schuphaud, Steven; Smith, Spencer; Stevens, Michael; Stone, Anthony; Terrion, David; Thomas, Val; Thordood, Bryan; Tuttle, Matthew; Valente, Gianni; Vawdrey, Bart; Wayman, Jared; Weaver, Craig; White, Michael; Wilson, Craig

Utah Fire Caucus Recap
The 2014 Utah Fire Caucus Luncheon held on February 7, drew a great crowd of fire personnel and legislators. It was the 10th annual event and Senator John Valentine recalled that the founding group included just seven legislators. This year almost 120 firefighters and about 75% of the legislature participated. The Caucus was founded to promote communication among legislators and firefighters while addressing fire-related issues in the state. The event presents a great opportunity for that one-on-one communication to take place.

At this year’s event at the Capitol, Rep. Jim Dunnigan received the Legislative of the Year Award for his excellent leadership on a number of very tough issues. Utah Task Force 1 won Fire Organization of the Year for their service during the disastrous flooding in Boulder County, Colorado. Jay Westergard received the Lifetime Achievement Award for 55 years of service to the Garland Fire Department and for his tireless work on behalf of the Firefighter License Plate program, the State Fire Museum, and much more.

Utah Fire Caucus Recap
RepWiley&RepDunnigan – Representative Larry B. Wiley (left) congratulating James A. Dunnigan (right) on his receipt of the Legislature of the Year Award.

Utah Task Force 1 (in alphabetical order)
Aldridge, Ken; Ascarte, Matt; Bailey, Josh; Basket, Scott; Baumgartner, Liz; Bevan, Jennifer; Bevan, Keith; Bishop, Bruce; Black, Matt; BogenSchultz, Nathan; Bone, Merrill; Boshurst, Brandon; Bowon, Steve; Bruss, Sean; Burrow, Michael; Burrows, J. Michael; Barton, Anthony; Cagle, James C.; Caves, Bryan; Chung, David; Conder, Robert; Davies, Adam; Davies, Bryan; Egbert, Joe; Emery, Peter; Evans, Robert; Eyring, Ben; Flood, Mary; Gillam, Jesse; Grant, Frankie; Greenides, Michael; Halladay, Jeff; Hopp, Travis; Holbrook, Jeff; Kay, Nathan; Lawrence, Steve; Lawrence, Trevor; Lund, Jens; Madu, John; Magner, John; McElroy, Laura; Minchow, Karen; Morley, Robert; Obert, Douglas; Orum, Craig; Otzen, Craig; Park, Darren; Pendleton, Chris; Peterson, Marty; Pilgrim, Riley; Plagemann, Keith; Pray, Chris; Rhodes, Matt; Robertson, Jeremy; Rosenblum, Chris; Ross, Darin; Ruschke, Diane; Russell, Wade; Sandstrom, Erik; Sandstrom, Taylor; Schuphaud, Jake; Schuphaud, Steven; Smith, Spencer; Stevens, Michael; Stone, Anthony; Terrion, David; Thomas, Val; Thordood, Bryan; Tuttle, Matthew; Valente, Gianni; Vawdrey, Bart; Wayman, Jared; Weaver, Craig; White, Michael; Wilson, Craig

photography provided by Unified Fire Authority
Every firefighter who proudly takes the oath of protecting lives and property knows and very willingly accepts the risks of the job. Firefighters are not only exposed to the physical risks of the job but they also face a significantly increased risk of cancer due to exposure to carcinogenic gases, products of combustion, particulates, and toxic substances while performing work duties. Several major studies have demonstrated strong evidence of the relationship between the profession of firefighting and an increased risk of developing cancer. These studies show a significantly increased risk of developing specific cancers, such as colon cancer, testicular cancer, multiple myeloma, brain cancer, and others. The studies have determined that there are three major exposures to carcinogenic substances by utilizing all of our PPE, including SCBA, while working in any dangerous atmosphere such as performing overhaul. If our turnouts are left unlaundered, chemicals absorb and retain chemicals we are exposed to during firefighting. Our turnouts are not unlaundred, chemicals are transferred to us through skin contact. Other PPE such as hoods, gloves, and helmet shrouds absorb carcinogens and should be cleaned regularly. Turnouts should never be worn—or even allowed—in station living quarters or worn in the home of a medical patient whose medically compromised condition may be aggravated by exposure to dirty turnouts. NFPA 1851 outlines the proper way to launder, maintain, and care for turnouts and recommends they be laundered every 6 months at a minimum. The obvious solution to this exposure is to have dirty turnouts properly laundered after every fire and to have a clean second set to wear in the interim. The unfortunate reality is most fire departments have not allocated money for every firefighter to have two sets of turnouts nor do they have the facilities to properly launder turnouts after every structure fire. Turnouts are supposed to provide us with protection, but ironically, dirty PPE habitually contribute to our increased risk of developing cancer. Every fire department should make it a budget priority to provide this protection of a second set of turnouts to their firefighters.

Firefighters are trained to properly and completely don PPE prior to entering any structure fire or situation where they may be exposed to hazardous atmospheres. Once the fire is extinguished and it’s time for overhaul, however, we often measure only for carbon monoxide and once levels are low enough, we commonly “dress down” for overhaul. We remove SCBA’s and commonly enter the structure wearing only turnout pants, helmet, and gloves. While stirring the burned materials searching for fire extension, many carcinogenic particulates and gases are released, entering directly into our lungs and absorbing through our skin. When investigators arrive, they commonly enter the structure wearing only a helmet and other minimal PPE and are exposed to those hazardous particulates and gases. It is imperative to our health and longevity to protect ourselves from exposure to carcinogenic substances by utilizing all of our PPE, including SCBA, while working in any dangerous atmosphere such as performing overhaul, investigations, and fighting small fires such as dumpster fires, trash fires, and vehicle fires.

The World Health Organization recently changed diesel exhaust from a suspected carcinogen to a group 1 carcinogen: a substance known to cause cancer. NFPA 1500, chapter 9 advocates the need for elimination and containment of 100 percent of vehicle exhaust emissions. Every fire station should be equipped or retro-fitted with an exhaust system that eliminates 100 percent of the exhaust fumes from the engine bay and does not allow any exhaust to enter into the living quarters. Even with newer diesel engines having particulate filters, fire apparatus should never be left idling in the engine bay during check-offs or maintenance. Apparatus should be pulled out of the station when it is going to be run for more than several seconds. In addition, turnouts should not be stored in an open bay area where they will be exposed to diesel exhaust every time the engine or ambulance leaves the station.

By taking a few simple steps to protect ourselves and by changing bad habits and behaviors, we can greatly reduce our chances of developing cancer. It is impossible in a short article to get into detail about a subject like cancer, so for more information on firefighter cancer, feel free to contact me at frivero@ufa-slco.org or go to www.firefightercancersupport.org and review the white paper on cancer. Stay safe!

Fernando Rivero is a fire captain and veteran paramedic with Unified Fire Authority in Salt Lake City. He received his master’s degree in public health from Westminster College. During the program he focused his studies on cancer and firefighter cancers. He is currently the Utah representative for the non-profit Firefighter Cancer Support Network.

International Agency for Research on Cancer

World Health Organization

PRESS RELEASE

N° 213

12 June 2012
Here's a quick rundown of those code requirements, which vacant buildings, found in Section 311 of the 2012 edition. The state of Utah, has an excellent list of requirements for Code, which is applicable in every community throughout nate these problems? Plenty. The 2012 International Fire

Drive through any village, town, or city and you are bound to see at least one dwelling or business that has sat vacant and unoccupied for months or even years, and is quickly deteriorating in condition and appearance. Some of these are businesses that are only temporarily unoccupied as they await a new tenant or owner, while others are old structures that sit empty and dilapidated. Perhaps the current owner has had the building up for sale for a very long period of time and has lost interest in maintaining the property. Not only can they be an eyesore and blight for the community, but they also create a hazard for neighbors, police, and firefighters as they provide a readily available base of operations for vandals, vagrants, gangs, drug-users, and juvenile fire setters if not properly maintained and secured. I often receive calls from Fire Chiefs and other city officials wondering what can be done about these situations.

What can the fire code official do to help alleviate or eliminate these problems? Plenty. The 2012 International Fire Code, which is applicable in every community throughout the state of Utah, has an excellent list of requirements for vacant buildings, found in Section 311 of the 2012 edition. Here’s a quick rundown of those code requirements, which should help you get your community looking better, while reducing the overall fire and crime risk in these vacant structures:

1. Abandoned is different than Vacant. An abandoned building is one in which the owner cannot be identified or located, and is persistently unprotected and unsecured. These may present a danger of structural collapse, fire spread to adjacent properties, and occupancy by unauthorized persons for illegal purposes. A community can use their local building official and fire official in concert to declare these buildings unsafe, and abate them by demolition or rehabilitation. Every community should have an ordinance dealing with abandoned properties. In a vacant structure, the owner is known and can be contacted, but they have a property that is not being maintained or secured and presents a safety risk to the public and first responders.

2. Exterior openings accessible to unauthorized persons shall be boarded, locked, blocked, or otherwise protected to prevent entry by unauthorized individuals. The fire code official is authorized to use signs or other barriers necessary to secure public safety. IFC 311.2.1 - This is most often accomplished by simply locking the doors and windows. If that is not possible, plywood screwed over the exterior doors and windows is the next most common solution. Security bars over windows, and doors there are barred shut from the inside are also acceptable.

3. Fire alarm, sprinkler, and standpipe systems shall be maintained in an operable condition at all times. IFC 311.2.2 - Obviously, this code requirement is meant to protect the structure and adjacent structures from fire spread caused by unauthorized individuals in the building. There are two exceptions to this rule that are commonly used. I recommend you read the code section.

4. Combustible materials, waste, and rubbish must be removed. The owner or person in control of a vacant building must keep it free from the accumulation of combustible materials inside and outside of the structure. This reduction in fuel load obviously assists the fire department should a fire occur (IFC 311.3).

5. Doors, windows, and other openings shall be locked or secured to prevent unauthorized entry. This statement is self-explanatory, but it is most difficult to enforce. It also appears the most difficult for owners of vacant buildings to accomplish, as you see so many buildings with missing doors and broken windows. The easiest way to complete this requirement is for the owner to screw sheets of plywood over doors, windows, and openings. It may not be the most aesthetically pleasing, but it gets the job done (IFC 311.3).

6. Hazardous materials are not allowed in vacant buildings. If you have a vacant auto repair shop, factory, or other industrial-type of facility in your community, the hazardous materials have to be removed per the requirements of IFC Section 5001.6. Just make sure the owner doesn’t take them home and store them in their garage (IFC 311.4).

7. Vacant or abandoned buildings that are deemed unsafe shall be properly signed to indicate hazards to firefighters. This is an excellent and very seldom used code requirement. Unsafe buildings can be required to post 24” by 24” placards on the front of the structure, visible from the street, that indicate structural or interior hazards exist for firefighters. Different symbols are used to indicate different hazards. Please read the referenced code section for complete details (IFC 311.5.4).


This former tourist attraction is not only an eyesore, but it contains a second story addition that would likely collapse quickly in a fire.

Continued on next page
I recently had a great discussion with some colleagues about what folks were reading, what leadership resources they were using, and how to best implement a reading program. During the talk, a friend who I have fought fire alongside and trust with my life asked, “Where is the Wildland Fire Book on Books (the guide for wildland fire books) located now? I can’t seem to find it.”

With the tragic and unfortunate events that occurred last year in Yarnell and with the 20th anniversary of South Canyon looming close in our memories, we need to have discussions on leadership, leadership principles, and resources available for leaders to aid in making a difference. The outcome of our discussions should effectively install a risk management framework to enable the students of fire, who we supervise, to make good decisions.

There are many different tools available for leaders to help mentor, enable, and empower those around them. I’d like to showcase a few tools that I am involved with and provide some resources for you to utilize and generate discussions within your own realm of influence.

A great place to start learning and gathering material on leadership is the Wildland Lessons Learned Center website, www.wildfirelessons.net. The website has many resources available to learn from, including past articles, official documents from incident reviews, and accident investigations. It’s a great place to obtain resources, collaborate, network, and share with others to help promote a culture of learning and safety.

Another way to engage students of fire is to participate in a professional reading program. I’m not talking about a “book club” like those that have been popularized in the media. I’m referring to taking part in a serious, organized program that will provoke reflection, discussion, and debate.

Ask yourself and others in your organization just how many of our young firefighters know what happened at South Canyon? How many have read anything that discusses the principles of sound leadership? How many have read stories from other disciplines or read about endeavors that describe leaders in action? You may be surprised at the answers you hear.

To help answer the “Where is the Wildland Fire Book on Books” question, I need to provide you with some framework. The ad hoc group that administers the Professional Reading Program (PRP) is known as “Sparks for PRP Change.” This group tiers off the NWCG Leadership Subcommittee under the National Training Committee of NWCG’s Training Branch.

The “Sparks” were entrusted with revitalizing the Wildland Fire Leadership Development Program’s (WFLDP) Professional Reading Program. Our first step was to establish a neighborhood within wildfirelessons.net called the Fireline Leadership Reading Room. The next step was to revamp and utilize the evolving Book on Books list. After a year’s worth of work, we came up with a dynamic list of 25 titles that cover all levels of leadership that may be of differing levels with specific aspects of wildland fire, such as culture, history, and lessons learned. I should mention this is the first time the revamped grouping of 25 has been seen by students of fire beyond the Leadership Committee and “Sparks.”

Those who were entrusted with this effort are honored to have this venue to present it to you.

It’s a great start, but the goal for the grouping, as with the original, is to be ever changing and adaptive. That’s where your experiences from participating in a PRP will help others: you can provide feedback, and make suggestions to the list for our future students of fire.

As for the original? Have no fear; the Book on Books is still out there. Although we feel the revamped group of 25 has evolved into something more meaningful and a lot more user friendly, we remain true to our roots. The original resides in the Professional Reading Program archives located at http://www.fireleadership.gov/toolbox/PRP_library/pro_reading_program.htm.

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.

This vacant bowling alley presents many hazards due to its huge size. The sign on the door to the right reads “Fire Sprinkler Room.” Is it even operable?

When enforcing the requirements listed above, it will be helpful to have the complete support of your city attorney, building inspector, and even city council. By regulating vacant premises via the code references in this article, you can not only make these structures safer for firefighters and first responders, but also help to beautify your community at the same time.

Be safe and inspect thoroughly!
Once you decide to participate in a professional reading program, you will find many resources at your disposal. I would like to point out a great tool for you to consider in your organization. The WFLDP has issued a national reading challenge to support this year’s Wildland Fire Leadership Campaign theme “The Resilient Team.” The current challenge is to read Marcus Luttrell and Patrick Robertson’s, “Lone Survivor: The Eyewitness Account of Operation Redwing and the Lost Heroes of SEAL Team 10.” “Lone Survivor” highlights the courage of SEAL Team 10 as they fight a desperate and doomed battle in the mountains of Afghanistan. There are many lessons to be learned from the leadership and teamwork displayed by such a resilient and elite group of fighters.

The intent is to read and discuss the book throughout the spring and summer following the outline shown.

“Invaluable information and technical assistance to this article was provided by: Justin Freeman, F.E.O. - Coeur d’Alene River Ranger District, Idaho Panhandle National Forest, Steward for the Sparks for Professional Reading Program and Pam McDonald, BLM Training Unit - NIFC, NWCG Leadership Subcommittee.”

“Lone Survivor” reading schedule:

- March discussion - Chapters 1-3 (pages 1-123 paperback)
- April discussion - Chapters 4-6 (pages 123-223 paperback)
- May discussion - Chapters 7-9 (pages 223-330 paperback)
- June discussion - Chapters 10-12 (pages 330-444 paperback)
- July discussion - Comparing the movie “Lone Survivor” to the book

Discussions will be hosted in the Fireline Leadership Reading Room on wildfireslessons.net throughout the challenge so you can network, share, and promote your part in such a resilient and elite group of fighters.

The ways you as a leader engage and mentor the team members within your organization is always a choice. The methods, resources, and creativity you apply will always have an impact. I hope what I have shared will help you get started, or maybe re-energize your program, and fully answer, “Where is the Wildland Fire Book on Books?” Remember 6 of 10.

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Allen Briggs is a SPARPS PRP change member and the South Zone Fire Management Officer for the Uinta-Wasatch Cache National Forest, US Forest Service. He has been an adjunct instructor for UFRA since 2001, teaching structural and wildland classes.

Briggs has held positions as a volunteer and paid firefighter, captain and training officer, and EMT/paramedic. He is currently an ICT 3 and Division Supervisor, and still holds certifications for Structural FF I & II, Instructor I &II, Inspector, ADO Pumper, and Haz-mat Ops & Awareness.

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Fire Smoke Gases: What will they do to you?

Recent scientific examination of the fire ground has revealed hazards in addition to those made obvious by simple observation. These additional hazards are associated with the content of fire smoke, where and when it is present, and how it interacts with the human body. In this article, we will discuss these issues and, where possible, make suggestions for the alleviation of the hazards. Keep in mind firefighters recognize and accept a substantial amount of risk when they come to the job and that it is not possible to eliminate all hazards. The goal is to bring to light some hidden hazards so that firefighters may make more educated decisions about limiting their accepted risk.

**IDLH vs. Non-IDLH and Chronic Exposure**

The U.S. Occupational Safety and Health Administration (OSHA) terms environments that present immediate threats to life as IDLH. Any worker exposed to threatening environments is required to wear appropriate respiratory protection. Current fire ground protocols generally require use of the SCBA inside an active fire (burning) structure. The interior environment of a burning structure may be monitored for one or more gases and declared non-IDLH when threatening gas levels drop below recommended exposure limits. Further, the exterior of a burning structure is generally considered a non-IDLH environment but is not monitored. During a recent research burn we conducted in Carmel, Indiana, a structure was burned intact with contents (as opposed to the 1403 training protocol). We monitored the exterior environment for carbon monoxide (CO) and hydrogen cyanide (HCN). Monitors were set up at 10, 20, and 30 feet on each of four corners of the structure. During the overhaul operations on the fire ground are assumed to be conducted under non-IDLH conditions. Even if this assumption is valid, the environment may still present serious health risks. From a single incident perspective, these low level exposures may present a negligible threat. However, for the career firefighter, the accumulated exposure may contribute to the development of chronic disease states. This effect has been shown to occur in other industries where chronic, low level exposures have been associated with the presence of heart, lung, and neurologic disease states.

**Smoke Composition**

Smoke generated during a structural fire is a mixture of many gases and particulates harmful to a person’s health. The composition of smoke generated in structural fires is well studied(1) and will not be extensively discussed here. However, it is important to understand that, although the qualitative composition of smoke probably hasn’t changed much, the quantitative composition has changed drastically in recent years. With the increased use of plastics, vinyl, and natural fibers in building construction and household goods, the relative amounts of gases and compounds present in smoke have changed. New building materials, textiles and fabrics have been shown to give off higher amounts of aldehydes, cyanide, and other toxic compounds than materials used 30 years ago(2).

**Toxic Assault on the Human Body**

Toxins enter the human body by several routes including ingestion, inhalation, injection and absorption. The total toxic load encountered by a body is the sum of all possible routes of entry. On the fire ground, only inhalation and absorption through the skin are relevant. The lung is designed for the exchange of gases between inhaled gas and the blood stream. Although the lung is set up to facilitate the exchange of oxygen and carbon dioxide as part of normal respiration, it also provides an effective pathway for toxic gases to enter the blood stream. The two most important fire ground toxic gases that utilize this pathway are CO and HCN. CO works as an asphyxiant by binding hemoglobin 200 times more effectively than oxygen. It eliminates the blood’s ability to deliver oxygen throughout the body. HCN is also an asphyxiant. It attacks the cell’s ability to utilize oxygen and generate energy. Significant exposure to HCN generally results in penalization of respiratory muscle and asphyxiation. More importantly, both HCN and CO work synergistically to hurry death by attacking respiration from two sides, oxygen delivery and oxygen use.

Skin absorption of a toxic substance is far more complicated than its inhalation. The skin can be pictured as a two-layer system. The outer layer, the stratum corneum or epidermis, is a thin layer of dead cells that act as a primary barrier to absorption. Below the epidermis is a much thicker layer of living tissue that contains blood vessels, sweat glands, hair follicles and nerves. Absorption through this system is driven by diffusion alone. When a substance is deposited on, or in contact with, skin surface, a concentration gradient is established that drives diffusion. This relationship is described by Fick’s law of diffusion which in essence says, how much of the material reaches the blood stream and contributes to a toxic load is determined by the characteristics of both the compound and the tissue. The epidermis is a hydrophobic layer meaning it repels water. Therefore, compounds similar to water will have a difficult time getting through. Organic compounds, like solvents, cross the epidermis more easily. Gases, like HCN and hydrogen sulfide (H2S) move easily across the dermis and, in appropriate concentration can contribute substantially to a toxic load(4). Following the movement of a compound from the skin surface to the perfusion rich area of the skin, the amount of blood flow through the skin is another factor, which contributes to toxic load. When the skin is hot, more blood flow is routed to the skin and provides the final sink for a contaminant’s diffusion gradient.

A firefighter’s turnout gear provides substantial protection from dermal exposure during suppression operations. However, contaminants that adhere to the exterior of the turnout gear can provide a source of exposure if handled extensively before cleaning.

**REFERENCES**


On behalf of the staff at UFRA, I would like to thank everyone who made Winter Fire School 2014 the great success that it was. Every year it seems to get bigger and better than the year before, and this year was no exception. We had 734 participants from more than 150 agencies or departments descend on St. George this year. It would be expected that with this much diversity, different opinions, and backgrounds some problems would be inevitable. However, in all my years of attending Winter Fire School as a student, instructor, and as staff with UFRA, I can’t remember any issues. That is a testament to the caliber and character of the firefighters of Utah. Personally, I am very proud of the professionalism shown by everyone, and I am honored to consider myself one of you. Without exception, the out-of-state instructors continually tell us how much respect they have for the dedication of the firefighters in Utah. This year the class list boasted 68 courses, 23 of which were instructed by a cadre of instructors from all over the country. Every one of them attends and/or instructs at many events like WFS and they tell us that it’s one of the best.

I would like to also thank the instructors from within the state. Many of them have been teaching at UFRA Fire School’s for many years, and can say that they have taught hundreds of firefighters how to do their jobs efficiently and, more important, safely. All of the classes, from lectures to the hands-on, are taught by some extremely knowledgeable technicians, who are as good as any in the country.

I would also like to extend a special thanks to the St. George Fire Department. We would not be able to be as successful as we have become without their help. They are gracious and accommodating to everyone who comes through the doors of their stations. Although, many other departments in the area help us as well, St George Fire Department has gone above and beyond what anyone would expect.

We are already planning Winter Fire School 2015, with a goal to improve even more and keep the instructor cadre experienced and relevant. We expect to have some new faces teaching at WFS 2015 along with some of the veterans. The night live fire classes were an experiment this year, and those of you who attended gave us some great reviews, so I would expect more night burns in 2015.

We, at UFRA, are looking forward to next year and hope to continue the tradition of excellence that you have all come to expect. The dates for next year are Jan 9 & 10, 2015. See you again next year!
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