Facilitated Learning Analysis

MINERS PEAK LOOKOUT

MEDICAL EVACUATION

August 29, 2015

PAYETTE NATIONAL FOREST

KRASSEL RANGER DISTRICT

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SUMMARY

"I have no recollection of what happened."

At approximately 0430 on August 29, 2015 the sound of moans woke Tom. The moaning was coming from Steve who was found crawling on or near the stairs of the Miners Peak lookout. He had fallen approximately 18 feet from the catwalk of the lookout where he was sleeping, landing on a pile of jagged granite rocks.

Tom immediately recognized the severity of Steve's injuries and assisted him to the bed in the cabin (cab) of the lookout. He then woke John and their EMT training kicked in. He and John initiated an assessment of Steve's injuries using the Firefighter Incident Form to guide them systematically through the evaluation and to stabilize the patient. Later it was discovered that Steve suffered a fractured skull with lacerations to the head, broken vertebra and ribs, and injuries to his feet.

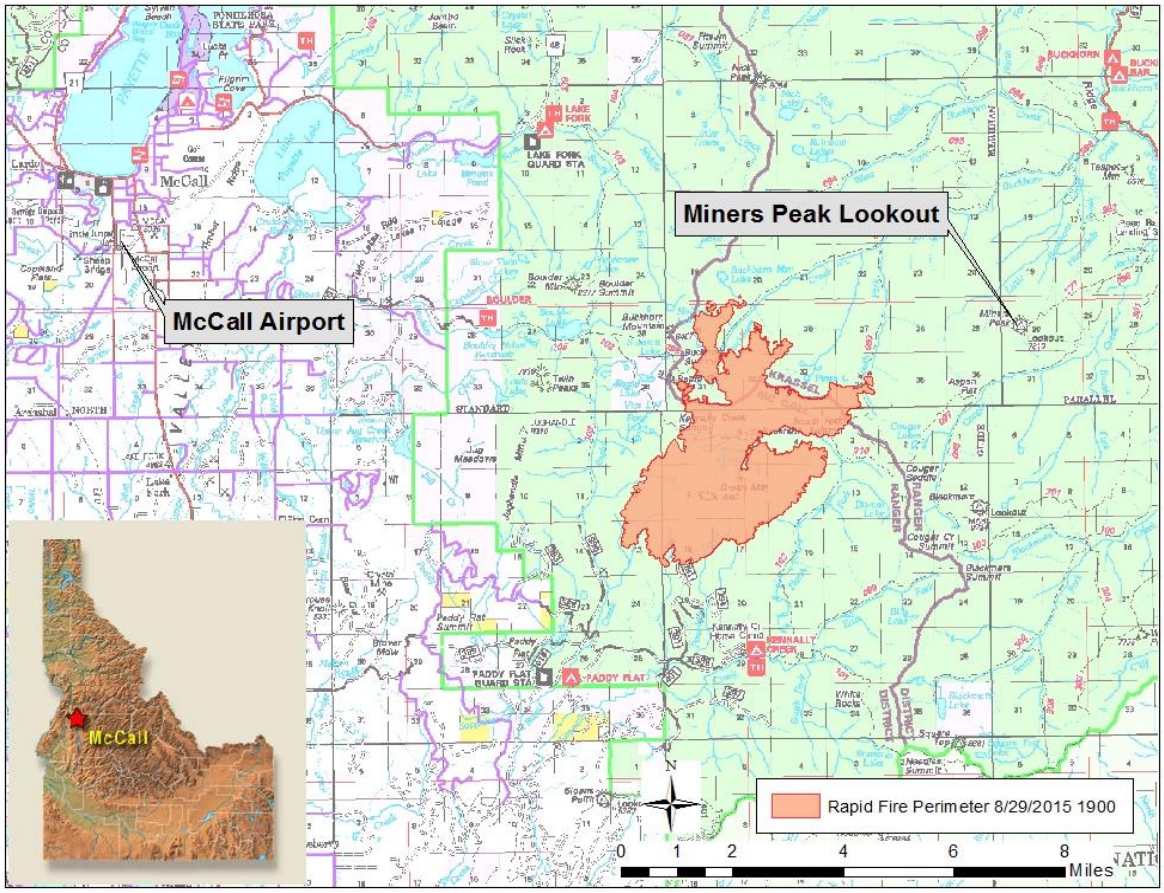
At 0505 Tom declared a medical emergency and requested a medical evacuation by air. John thought to himself, "How is this happening? This was supposed to be so great." The three firefighters had been assigned to the Rapid Fire to wrap the Miners Peak Lookout on the Payette National Forest. It was a 1-3 day mission on a ruggedly pristine mountaintop.

"It is unnerving. I don't like not knowing what happened."

FACILITATED LEARNING ANALYSIS

The Forest Supervisor of the Payette National Forest assembled a Facilitated Learning Analysis (FLA) Team to review the circumstances related to this incident including the medical response and the influence of maintenance deficiencies at remote facilities. The Lessons Learned Analysis synthesizes the learning opportunities found through this review process.

SETTING


Miners Peak Lookout
McCall Airport
McCall
Rapid Fire Perimeter 8/29/2015 1900
0 1 2 4 6 8
Miles


Valley
McCall
Miners Peak Lookout
Map Length: 16.26 Miles
Lake Fork

THE STORY

August 14, 2015 – Rapid Fire Start

On August 14th a lightning sparked fire began on slopes to the west of Green Mountain in the Rapid Creek drainage approximately 12 miles southeast of McCall, Idaho. The Rapid Fire began burning on the north-facing slope of Green Mountain above Kennally Lakes in difficult terrain, on steep slopes in brush and mixed conifer and subalpine fir on the Payette National Forest.

August 28, 2015 – Division XX – The Mission

On August 28th, firefighters Tom, Steve and John, were assigned as Division XX on the Rapid Fire. They were given a specific mission to wrap the Miners Peak lookout structure located on a small pointed rocky peak at an elevation of 7810 feet. The lookout has been staffed annually from mid-June to October since it was built in 1986.

The three firefighters were transported via helicopter to the lookout at 0900. Steve described the small landing zone as "rather sporty...but the helicopter pilot did well." They worked through the day wrapping about 75% of the structure before nightfall then prepared dinner at around 2100. At 2300 they began to bed down...Tom in the cab, Steve on the eastside catwalk and John on the westside catwalk. It was a warm night on the eve of the August full supermoon.

"It is normal to sleep on a catwalk"

The evening was warm and clear with moderate winds. The structure had been mostly wrapped so it was stuffy and hot inside the cab. The catwalk floor and the windows of the cab were fully wrapped. The catwalk was the only flat surface on which to bed down. It was the logical place to sleep.

August 29, 2015 – What Happened?

Tom woke at approximately 0430 to the sound of moaning and located Steve on the stairs of the lookout. Tom's EMT experience helped him to quickly assess that Steve was severely injured. He assisted Steve to the bed in the cab and then woke John. At 0505 a medical emergency was declared to Incident Command Post (ICP) Communications. The two men initiated the Firefighter Incident Form assessment and evaluated Steve's injuries to include a broken back and head injury with laceration. A medical evacuation was requested.

This was a request for a medical evacuation...from a difficult location... before the light of day.

Tom's first request to the Operations Team (Ops) was for the Blackhawk helicopter, a hoist capable ship that he knew was sitting at the McCall airport and he knew had night vision capabilities. Ops rapidly evaluated the request and immediately determined that the Blackhawk could not carry out this mission. Although it had night vision capability, it was too close to dawn when the early light would be compromising, it was too big for the small helispot, and the crew was not at the airport ready to fly. Ops quickly turned to their medical plan and ordered Life Flight at 0525 with an ETA of 0613 flying in from Boise, Idaho.

When Life Flight arrived at Miners Peak at 0613 the pilot made the decision not to land. It was dark, the winds were 12-17 mph gusting to 20 mph, and the pilot was unfamiliar with the helispot landing. He diverted to the McCall airport 16 miles away to wait for more light.

Meanwhile Tom and John became anxious because the Blackhawk and now Life Flight were not able to reach them in the dark.

"It was horrible waiting for daylight."

Meantime, Ops was considering all possible alternatives in the event that Life Flight was not able to land at the small helispot just below the lookout. They decided to send an Agency ship at first light to land at the helispot. It arrived at 0708 and delivered a paramedic, EMT, and a helitack crewmember with a trauma kit and Traverse Rescue Stretcher (TRS). In addition, early morning calls had already been placed to have the local light ship on standby with personnel ready to configure another aircraft for back board transport if Life Flight was unable to land.

"I am so glad that the Agency ship showed up to assist Life Flight in the landing."

At 0712 Life Flight, with an assist from the agency contract pilot who communicated landing expertise to the Life Flight pilot, was able to land at the helispot and deliver 2 more paramedics to the scene. They provided care to Steve, packaged him for transport, loaded him on Life Flight, and at 0750 lifted off for the hospital in Boise, Idaho.

After Steve arrived at the hospital the Unit Supervisor drove to Boise to provide assistance. He was met there by the designated Boise National Forest hospital liaison who meets all incoming Forest Service employees at the area hospitals. He also contacted the Wildland Firefighter Foundation to seek support for Steve and his family. The Foundation contacted someone "high up in the WO" who then called someone "high up in the Office of Worker's Compensation Program (OWCP) at the Albuquerque Service Center (ASC)" to make sure the process was moving along and an OWCP claim number was generated.

August 31, 2015 – Steve was recovering in the hospital and making improvements when three Days Later...

"Go ahead and take the injured to the doctor."

On Monday, August 31st, ASC OWCP staff called the Unit Supervisor and told him to "go ahead and take the injured to a doctor" and that she could help the Unit Training Officer with eSafety if he didn't know how to do it... and "not to panic." Later that day she provided the OWCP claim number.

Steve was released from the hospital on September 2, 2015 and continues to recover in the care of his family and friends.

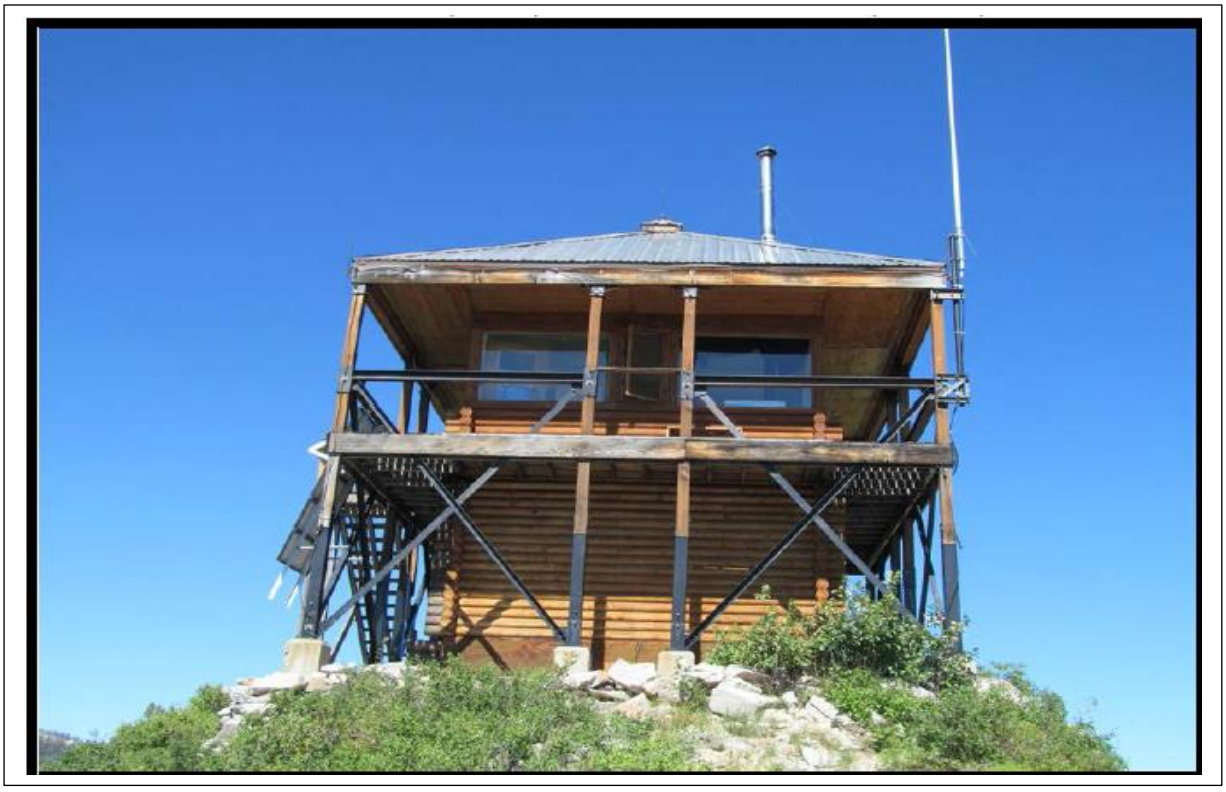
"I am doing well considering what happened."

REMOTE FACILITY CONDITION AND MAINTENANCE

The details leading to Steve's fall are unknown. There were no witnesses and Steve does not recall what happened. The FLA Team visited the lookout, and reviewed the design and maintenance records for the facility and provides the following information.

The 1977 Miners Peak lookout design was approved in 1982 by the Intermountain Regional Office. The Forest began construction of the structure in 1985 and finished in 1986. Miners Peak lookout has no road access therefore almost 50,000 lbs of building materials were slung in by helicopter. A 1985 letter to the District states "Due to some necessary engineering changes and the makeup of the building site we soon realized that the magnitude of this project had been underestimated. However we made the necessary adjustments and proceeded on with the project."

The lookout was completed in 1986 and put into service and has been in service ever since. The structure is a two-story building with an upstairs living area, fire spotting equipment, and a covered catwalk around the entire building. The storage area is downstairs.



After completion of the building, condition inspections occurred in 1992, 1997, 2002, 2007, and 2013 identifying maintenance and upgrade needs and material and supply cost estimates.

The 2013 Miners Peak Lookout Building Inspection estimated $134,000 of work was needed with $79,000 of that focused on health and safety related items. These safety related items included discussions around the catwalk, toe kick at the floor, and how the guardrail should be

improved to protect occupants. These amounts do not include the costs of delivering supplies, tools, and workers to this remote site.

Some maintenance has been completed on the lookout each year for the past several years. The items that are completed are based on health & human safety criteria, costs, and available funds in both engineering (cost pool) and fire project funds. Forest facilities and fire staff generally coordinate to prioritize this work each year.

With declining budgets, it is becoming more common for Forest Service buildings greater than 10 years old to have significant maintenance needs, health and safety needs, and code issues. From 2006 through 2015 the Forest has received an average of $275,000 a year for specific non-recreation facility maintenance and upgrades to maintain 238 facilities. Project funding has also been used for maintenance and upgrades but it is unknown how much occurs annually.

OBSERVATIONS

The FLA Team interviewed several staff members who work with facilities and have a role in the funding or maintenance of them. These discussions were generally programmatic and not limited to Miners Peak Lookout. Several themes emerged from these interviews. Questions are posed below around these themes for consideration by leaders and managers. It is outside of the scope for the FLA team to respond to or answer these questions.

The Forest Service continues to be challenged with where to spend the limited funds available for facilities. Difficult choices and decisions must be made for the prioritization and use of these funds. There is generally not an expectation that this funding situation will change significantly, making this conversation focus on prioritization of scarce funds and managing employee risk. Questions for leaders and managers to consider as decisions are made about project priorities and working conditions for employees in and around facilities include:

Maintenance Priorities:

- How are facilities maintenance project priorities set?
- Who is involved in these decisions?
- How is health and human safety considered?

Employee Risk Management:

- Who is identifying and considering the risks that exist, and may be increasing, for employees working in and around facilities in need of maintenance and improvement?
- Do employees have the information they need about working conditions to make informed decisions about their safety given the state of facilities? If not, how can this be improved?
- Are leaders and managers transferring risk to employees through the limited maintenance on facilities?

Lessons Learned

Simulations: The Rapid Fire Incident Command Team hosted a medical emergency simulation on August 28, 2015, one day before the firefighter injury. Doing a simulation exercise for an incident within an incident is Standard Operating Procedure for many Type 1 and 2 Teams. The Incident Management Team for the Rapid Fire has a Standard Operating Procedure that they will do a simulation to prepare them for an "incident within an incident" as the current incident allows. There is no national protocol for simulations, however it is general standard practice.

"We are used to medical situations and train often with medical scenarios."

"I believe that running the Simulation helped us be successful with the extraction from Miners Peak Lookout. It was dark, early, no aviation resources on, and we had a cold front with wind event approaching. The last thing we did the night before the injury was a Team AAR on the Simulation." – Team 6

Example Photo – Not from actual simulation.

Lesson Learned: Training and Practice Matter. The simulation exercise contributed to a successful outcome the following day for the medical evacuation. The experience on the Rapid Fire shows the importance of these exercises and their contribution to successful management of incident-within-an incident.

Medical Plan and Medical Program: Tom is a qualified EMT and was able to quickly assess and provide medical assistance to Steve. Tom stated that "knowing what you are looking at" is critically important and that EMT training gave him the skill to understand what he was seeing. Tom stated that without EMT training he would not have known to do what he did.

The Payette National Forest has made its medical program a priority. Thoughtful decisions about funding and priorities make this program successful, but the potential is great for even more success. The Forest has established an Agency License with the State of Idaho which includes a Medical Director who provides oversight and collaborates on training and supply needs. The Forest provides multiple trainings throughout the year to maintain and increase the EMT qualifications of firefighters and other forest personnel.

Although no policy requires or recommends the inclusion of EMTs on crews, Emergency Medical Services Standard Operating Guidelines do have a suggested level for crews. Crew members who are EMT certified are identified in Incident Action Plans. Firefighter crews are often organized to include one or more EMTs.

Lesson Learned: Having a trained EMT influenced the response to and the treatment of the injured crew member. It contributed to a successful medical evacuation.

The general sense is that more advanced emergency medical training is needed and desired in incident management and in firefighter and field going ranks. Limitations to achieving this include the financial cost of the training, the training requirements (initial time, annual refreshers), and the cost of medical supplies. There are no dedicated funds for EMT certification and equipment or for the medical program and equipment.

"We do not respond to medical emergencies. What we do is stabilize, package, and extract the injured and get them to advanced life support."

Examples of Sponsored Trainings

- Forest Medical Refresher (hosted)
- Firefighter Medical Refresher (hosted)
- EMT Basic Course (hosted on odd years)
- Wilderness First Responder (5-10 attendees)
- Ski and Trauma Conference (5-10 attendees)
- National Search and Rescue Academy (2 attendees)
- Training Day (every Wednesday during field season)

Medical Equipment Available

- Two-man First Aid Kit
- Saw Box First Aid Kit
- Life Threat Kit
- Trauma Kit
- Stretcher Kit
- Two EMT Fire Line Kits

Scenario Training = Building Muscle Memory

Lesson Learned: Medical training and equipment is determined at the local unit level. In this incident the Payette National Forest has prioritized its emergency medical program and training which resulted in the successful care and medivac of the injured firefighter.

Communications:

The skill and experience of the agency contract pilot allowed him to land at Miners Peak helispot and delivered critical medical support including a paramedic, an EMT and another crew member. He also assisted the Life Flight pilot on his landing at the helispot for the transport of the injured firefighter. The Life Flight landing was critical to the success of the medivac.

Lesson Learned: Having the agency contract pilot and the Life Flight pilot communicating in the air resulted in a successful outcome at a remote location under challenging conditions.

The 3 firefighters had a solid in-briefing on the Incident Action Plan (which includes the Medical Plan and the Communication Plan). They cloned their radios. They were fully assigned to the incident. When the accident happened they knew exactly what to do.

Lesson Learned: In-briefings and communications are critical when the unexpected happens. In this incident all communication protocols were followed and resulted in the success of the medivac.

Situational Awareness and Normalization of Risks: "It is normal to sleep on catwalks." This statement was made by many of those who were interviewed for this FLA and in the general discussions around this incident. The luxury of a flat spot to bed down is highly desired after a long day of work. At Miners Peak lookout the options were limited. Even though the catwalk did not have vertical railing it was still chosen as a place to sleep.

Normalization of risk can occur as the result of an individual, or several individuals, taking the same action with no negative result. If nothing bad happens as a result of certain practices, then these practices becomes part of the normal and accepted way of accomplishing tasks. This may have been a factor as many people interviewed said this was normal – to sleep on a catwalk.

The variability of conditions, whether of wildland conditions or infrastructure conditions, needs to be considered in decision making. Situational awareness describes awareness and recognition of immediate surroundings and how those conditions impact our actions. Being aware of surroundings can include noticing what is seen, as well as what isn't seen...comparing what is normal from the past to what is present, and looking for things that are irregular. Any past action that is considered "normal" can become abnormal under different changed conditions. These conditions may be recognized to varying degrees with situational awareness.

Lesson Learned: Decisions that have been made several times in the past, and appear to be normal, can be impacted by specific or different conditions at any time. Recognition of changed or new conditions can be influenced by situational awareness, a practice well recognized in the firefighting community. The Incident Response Pocket Guide - Human Factor Barriers to Situational Awareness section provides considerations for monitoring situational awareness. Care should be taken to include these considerations in working in and around infrastructure of various conditions as well as in the wildfire activities.

Post Incident Observations

Medical Liaison: A hospital liaison from the Boise National Forest met Steve at the hospital to provide administrative support. Both the Boise and the Payette National Forests have Hospital Liaison Programs that detail the objectives, procedures and expectations for this position.

Dispatch contacts the designated liaison whenever there is an incident involving an injured firefighter being transported to the hospital. The liaison helps navigate the medical system until staff from the injured employee's unit arrives. This service is much appreciated. More could be learned about the knowledge this person brings and the training or experience that could help any employee be a liaison with medical facilities, employees, and families.

Critical Incident Stress Management: A number of serious accidents, critical incidents, and/or traumatic stress events occur in wildland fire operations throughout each wildland fire season. As a result, personnel may experience critical incident and traumatic stress during the line of duty. The effects of traumatic stress are best prevented and mitigated through the use of Critical Incident Stress Management (CISM). CISM can be defined as a wide range of programs and services designed to prevent and mitigate the effects of traumatic stress. A critical incident is any event that has a stressful impact sufficient enough to overwhelm the effective coping skills of an individual or group. These events are typically sudden, powerful events which are outside the range of ordinary human experiences. CISM can be tailored to the events and participants in a specific situation.

Tom and John were offered CISM support. Participation with or use of CISM services is voluntary. When asked if he would have used such a service, Tom responded: "If Steve is OK, I'm OK." Upon hearing that Steve was going to be OK, Tom said then he wouldn't need this service and was back at work within a couple of days.

Reminder: CISM services should be a part of debriefings or after action reviews. These services are available, can be ordered as necessary and are completely optional to employees.

Office of Worker's Compensation Programs:

Steve was able to receive his Office of Worker's Compensation Programs (OWCP) claim number rather quickly because of the workaround and elevation to the "higher ups." The 3 day turnaround for a claim number was described by Forest staff as "not the norm." When asked what the norm was, the response was: "at least 3 weeks or more" to get an OWCP claim number out of the Albuquerque Service Center (ASC)."

The following gaps are based on local interviews in which participants shared experiences about OWCP injuries unrelated to the Miners Peak lookout incident.

Gap in communication: There are perceptions that ASC OWCP staff and field employees don't "speak the same language." For example, being told "not to panic" 3 days after a successful medivac.

Gap in time: There can be a time lag between medical services provided and OWCP claims being processed. Employees have been contacted by collection agencies and medical facilities have called Forest Service offices directly asking about their unpaid bills. This gap can be large enough that employees become stressed from dealing with this and may be concerned about personal credit ratings.

Gap between ASC OWCP and Department of Labor: It is not always obvious to employees in the claims process where each agency's responsibilities start and end. It is also not always known if there are resources available for our employees to navigate this, such as employee advocates.

THE FLA PROCESS – TEAM OBSERVATIONS

- Facilitated Learning Analyses are becoming more widely recognized as learning tools throughout the Forest Service and other land management agencies. Many employees were already aware of this type of review when first approached by our team. Not only is there an awareness, but there seems to be support for FLAs as a way to share stories and lessons learned. Our culture around safety, learning and sharing is changing in a positive way.

- The lessons in this report are applicable to a much wider audience than the wildland firefighting community. All field going programs should have medical plans and should practice simulations of medical emergencies and evacuations of injured employees from their field locations.

FLA TEAM MEMBERS

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