2015
Incident Review
Summary
“Statistics are used much like a drunk uses a lamppost: for support, not illumination.”

Andrew Lang

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1. Introduction

The information in this report comes from wildland fire incidents—from various agencies—submitted to and gathered by the Wildland Fire Lessons Learned Center (LLC) in 2015. The primary source of data is accident reports (FLA, RLS, SAI, etc.). Most of these reports have been posted to the LCC’s Incident Reviews Database. SAFENETs and other data sources have been included when no actual report could be located. The data set included 93 incidents.

What Should You Do with this Report?

Our intent is for this report to inform general training and dialogue—very specifically, annual refresher training. This obviously begs the question: What is the intent of your refresher? Is it to “wipe the cobwebs off”—just a brush-up on how to start the pump and advance the hose lay? Is it a venue to update everyone on new policy? Is it intended to reduce accidents and injuries? Obviously, you have to answer these questions for yourself. Whatever you decide, we think the numbers, topics, exercises and questions included in this document can help you translate the lessons from last season into learning for future operations.

Throughout this report, this Action Icon identifies training curriculum related to the topic. If you are an instructor, you will need to look at each exercise ahead of time to pull up videos or to print reading material.

Use this report and its exercises for your annual refresher or weekly training days.
2. Grave Approach

Fatalities

*Between 8 and 35 Firefighters Will Die Next Year. How Will It Happen?*

A traditional approach is to focus on “What Kills Us.”

Using activities correlated with fatalities is appealing and intuitive. The logic goes something like this: If we remind folks about the things that we most often get killed by, fewer people will get killed. We have been using this approach for some time.

The 2015 fire year included multiple fatalities—just like every other year. The average over the past 25 years is just over 17 deaths per year. The data says that somewhere between 8 and 35 firefighters will die next year. How will it happen?

We have a pretty good idea: It will likely include some heart attacks, some vehicle accidents, getting hit by trees, and an entrapment or two. That’s just what the numbers say.

Does knowing this information change anything you do?

**Exercise (40 minutes)**

We suggest you prepare to survive a traumatic event (like the death of a coworker).

- In small groups, discuss your lessons from this reading. 20 Min.

3. All the Data (not just fatalities)

**Activity**

What were people *doing* when something happened that triggered a report? Does it shine light on anything? Or does it just illustrate that *everything* we do involves danger? This graph could also be titled “Things We Spend Our Time Doing.”

![2015 Incidents by Activity](image)
In 2015, the top three activities that generated some sort of report were Driving, Saw Ops, and PT. Reports in those categories made up 47%—nearly half—of all the reports submitted for the year. The question is: Are you spending enough time thinking about and training on these activities? Are you prepared to handle the typical bad outcomes?
Outcome
What was the outcome when something happened that triggered a report? Does it shine light on anything? Or does it just illustrate what we report on? This graph could also be titled “Stuff We Write Reports About”.

2015 Incidents by Outcome

What was the Heat Source?

39% Ignition of Flammables
(Drip/Saw/Pump mix)

33% Hot Ash
(Cold trailing, Stump holes, Hot Foot)

17% Heat from Flames

Exercise (40 minutes)

- Watch this video: Chainsaw Safety: 7 Min.
- In small groups, discuss the video and your experience with the topic: 13 Min.
- Read this one-page RLS: http://bit.ly/Fuel_IgnitionsRLS
- In small groups, discuss the following topics: 20 Min.
  - How is fuel most often spilled?
  - How are YOU most likely to see fuel ignite?
  - What other risks have we “normalized”?

2015 Burn Injuries by Activity

What was the outcome when something happened that triggered a report? Does it shine light on anything? Or does it just illustrate what we report on? This graph could also be titled “Stuff We Write Reports About”.

2014 Vapor Lock RLS

A lesson from someone who got sprayed in the eyes with fuel.
4. Just Keep Rollin’

A Lesson We See Often
From this year’s E-346 Rollover FLA:
“Forests should have an accident/hospitalization plan which addresses:
- Training for those functioning in the roles of Patient Advocates/Hospital Liaisons, both administratively and how to interact with hospital staff.
- Accounting for timely notification and mobilization after hours.
- Incidents with multiple casualties which may require both a Hospital Liaison and a Family Liaison.”

Exercise (40 minutes)
- Each group pick one of the following reports: Rollover in Dust, Heat Stress RLS, Falling Area Control RLS
- In your group, design a 50-minute training module related to your selected incident. Be sure to include:
  - Background – Why this training matters.
  - Drill – How can folks practice avoiding these instances as well as respond to them appropriately?
  - When – Incorporate timing into your design. What time of year/what time of day will this training have the most impact? **30 Min.**

Report Out: **10 Min.**
5. The Lessons

This season we gathered information on nearly 100 incidents. Most of these incidents have a report, some of them have several. In those reports are lessons related to the incident. This section highlights some of those lessons for you. **Remember, these are only lessons—they are not learned until you take action on them!**

**Make Friends**
“Cooperator relationships are important, especially in emergency situations. The only way to develop these relationships is to interact on a regular basis.

Are you intentionally developing and maintaining relationships with those you will come to rely upon in a critical situation?

The options are numerous and often mutually beneficial: Simulations and barbeques?”

**Medical Training First**
“Moving the medical training to the beginning of refresher prior to any practice jumps proved to be helpful, as noted by several participants.”

**Blacks Creek Smokejumper Accident**

**Check Before You Move a Vehicle**
“Call resources on the assigned Tactical channel before moving vehicles parked in the middle of the road, for any reason.”

**Falling Area Control RLS**

**How Critical is the Typical Water Tender Assignment?**
“We roll Water Tenders on a regular basis—11 in the past five years, including three fatalities. Operating Water Tenders on steep, narrow, dusty roads is extremely dangerous. Knowing this, how **critical** is the typical Water Tender assignment? Whether you are an operator, overhead, or an additional resource watching a Tender work, always ask yourself and those around you:

*Is the assigned task worth the exposure and gravity of the consequences?*

**First Creek Water Tender Rollover RLS**

**Heat Stress**
- “Hydration alone will not prevent a heat-related injury. You need to combine hydration with good physical fitness and adequate recovery from high-heat producing physical tasks.
- Your initial hike sets your body’s core temperature for the day.
- Your PPE weight (pack and tool) contributes to high physical demands and higher body temperatures.
- Performing physical tasks—such as hiking up hills—can increase your body temperature to near-critical levels.
- Physical work is our biggest producer of body heat. Breaks and appropriate levels of physical exertion are important in mitigating adverse heat related issues.”

**Heat Stress Study RLS**
Compartment Syndrome

“Acute Compartment Syndrome: Medical Emergency! Seek care immediately.

- Persistent pain in affected limb that gets progressively worse and does not go away with rest. Often occurs in athletes who have recently intensified or changed their training routines.
- Pain is often disproportionate from the injury or exertion that happened.
- Visible swelling with tense muscles. Pain with stretching and muscle weakness. Numbness of the foot or hand.”

Light Duty Work Capacity Test Incident

Ask About Rhabdo

“Fire staff recognized the symptoms associated with rhabdomyolysis as FFT2 was being admitted to the hospital, and requested that the hospital staff test for the illness.”

Big Cypress Work Capacity Test Rhabdomyolysis

Think of a Torch like a Saw

“Think about a drip torch similar to a chainsaw in dense brush—you always watch the tip and know where it is.”

Drip Torch Leg Burn 3

Pilot to Pilot

“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.”

Miners Peak Medical Evacuation

Exercise (40 minutes)

Look through all of the lessons on pages 8 and 9. On a separate piece of paper, put each lesson in one of two categories:

- Items you can implement immediately.
- Items you can bring up with others and make plans for implementation. 20 Min.

Prioritize your lists.

Identify who you need to coordinate with to put lessons into practice.

Identify what Standard Operating Procedures need to be updated to reflect the new practices. 10 Min.

Report out on your Top 3 Priorities. 10 Min.
6. Entrapped Alone

Entrapments usually involve more than one firefighter. Over the past 25 years, 77% of our recorded entrapments involved two or more people. But what about that other 23%? Those lonely instances of just one person being entrapped? What are the typical circumstances there? What are the activities most likely to result in some alone time with your shelter?

Only two activities surface when looking at single-person RX entrapments. All of the Firing Entrapments were Interior Ignitions.

When looking only at Initial Attack single-person entrapments the leading activity was Heavy Equipment Ops at 46%.

When looking only at Extended Attack single-person entrapments the leading activity was Scouting at 50%.

Do you run heavy equipment on IA? Do you drag a torch interior during RX ops? Do you scout ahead of the crew or squad? These are the situations that most often set the stage for solo entrapments. The “other” category had a few folks getting separated from their engine, a lookout, and a vehicle getting stuck. The average entrapment time occurred at 1500 hours. If your mission includes some time in the green alone in the afternoon—at least make sure your communications are tight.