

# TWO MORE CHAINS



Winter 2012 ▲ Vol. I Issue 4 ▲ Produced and distributed quarterly by the Wildland Fire Lessons Learned Center

## Prescribed Fire Escapes:

### Are We Learning Anything ?

By Paul Keller

So, are we?

"That's a hard question," confirms Ben Jacobs, the ten-year veteran Fuels Management Specialist at Sequoia and Kings Canyon National Parks. "I'd like to think that we are."

Jacobs has been around the block, er, unit.

With 30 years—and counting—in wildland fire (including one season on an engine, ten seasons on interagency hotshot crews, three years as the National Park Service's Fire Use Module Coordinator, and acting Fire Management Officer at Point Reyes National Seashore for almost two years), this guy has an appreciation for both the drip torch draggers and those dudes back in the office managing the program. He gets policy *and* practice.

"I think the information is being better disseminated now than it ever was before," Jacobs says. "For instance, I get the Wildland Fire Lessons Learned Center's automatic [electronic] updates sent to me

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*"I've taught a burn boss class nearly every year since the late 90s. I typically see a reluctance to write a burn plan. I mean, we're doers. We like working in the woods and dragging hose and running saws.*

*We don't like typing on computers—at least I know that I don't.*

*There's a lot of folks at the technician level in the class. Sometimes, I'm not sure how much value they see in the planning process and the actual writing.*

*But they have to be able to write a professional, literate document that will hold up under significant or legal scrutiny. If they ever need it—they'll be glad they did."*

**Ben Jacobs, Veteran Burn Boss**  
From his "Advice to Burn Bosses" on page 3.

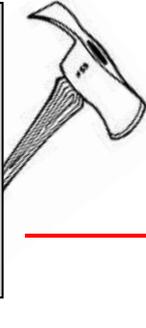
on everything that's coming through. So, it's easy to get access to FLAs (Facilitated Learning Analyses)." [If you'd like to sign up for this notification service: <http://wildfirelessons.net/Subscribe.aspx>]

Jacobs fully supports this (the FLA's) relatively new method for maximizing the learning opportunities that emerge from our unintended outcome and near miss events—including escaped prescribed fires.

"I think the FLA process shows a lot of promise in removing the 'punitive element.' By using FLA reports, we can hopefully find out what really happened—so that people can *learn*. Most importantly, people can be honest in a non-threatening environment."

Ben was among the many members of the wildland fire community who recently attended a special series of workshops held from coast to coast that basically asked the question: "After an escape report is released to the field, does anyone actually change their behavior?" [See a summary of these workshops' findings on page 4.]

[Continued on Page 3]



# GROUND TRUTHS

By Travis Dotson  
Fire Management Specialist  
Wildland Fire Lessons Learned Center  
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## Chances are . . .

### What Were They Thinking?

Every time a prescribed fire is declared a wildfire, we do a “review” to determine what went wrong, what conditions led to this planned event not going as planned.

These reviews turn up all kinds of stuff, like “unexpected” wind shifts, unforeseen communication problems, under-predicted fire behavior, confusion surrounding the contingency plan, misunderstanding of funding mechanisms, understaffed operations, outdated plans . . . the list goes on and on.

Typically, the review finds one or several of these instances and points to them as “contributing factors” in the report. The report gets published and then people who have no connection to the event read it and say: *“What were they thinking!”*

Chances are, they were thinking just like the rest of us.

### Follow Your Plan

One of the most common “findings” in these escaped prescribed fire reports is that the operation did not exactly follow every aspect of the written plan. That’s one of the things we always point to and exclaim: *“They didn’t even follow their own plan!”*

Chances are, you don’t follow every aspect of your plan. Chances are, not everyone knows the plan well enough to follow it precisely. Chances are, the plan was pasted together from other plans and isn’t even written specifically for the unit you are burning. Chances are, there was a rush to get the plan approved, and then a rush to get the unit prepped, and then a rush to get the resources together, and then a rush to notify folks. By the time you get to the “test fire,” the only thing being tested is everyone’s patience.

There is nothing wrong with any of this—as long as everything works out OK, which it does the vast majority of the time. Oh, but when it doesn’t—*“What were they thinking!”*



[“Chances Are . . .” presentation](#)

(Click to follow.)

A two-minute automated slide show about prescribed fire lessons.

### When the Green Ends Up Black

Chances are, your communication plan has holes in it. Chances are, logistics have not been thoroughly thought out. Chances are, your contingency plan is not exactly “clear text.” Chances are, none of this will ever really matter because we are so good at making failed systems work.

During operations, we expect these little bumps. We deal with them on the fly and at the end of the day we circle up and say: *“Well, all that really matters is we kept the fire on the right side of the line!”*

But, when the wrong side ends up black: *“What were they thinking!”*

### Get Under the Hood

What does all this mean?

I guess that’s up to us. Do we want to do things the way we have always done them because we haven’t had any major problems yet?

Do you just drive your truck until it quits running? That’s certainly one way to do things. But if you don’t do any preventive maintenance, you are setting yourself up for a breakdown, often at the most inconvenient time and place.

Do a burn program “walk around.” Have someone from outside get under the hood of your burn plan and tell you what it looks like to them. Answer the question: *“If we lost a burn today and someone came looking at our program and wrote up a report, what would people point to and say: ‘What were they thinking?’”*

Burn on, torch draggers.

[Continued from Page 1]

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*“The problem really is the length of these reviews. It’s getting a little out of control. I know I don’t have the time to sit down and read 100 pages. I can read ten pages maybe to get to the point—to get at the nuts and bolts of what happened along with some recommendations.”*

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### Hard Core Reviews

“We had some really interesting discussions at the workshop I attended,” Jacobs informs. “There were a lot of people there who had been through the review process and were not happy with the final product. People felt things weren’t portrayed accurately. There were some folks who had gone through some pretty hard core reviews. There was still a lot of emotion—even ten years later—attached to what had happened to them and the report that came out and how they felt they were so misrepresented.”

In 2007, as burn boss, Ben endured his own negative experience with an official review of a prescribed fire (pile burning) escape. “I felt afterwards that I was raked over the coals,” he confides. “It seemed to me like they were out to punish. It was *not* a positive or learning experience for me.”

Despite his own official prescribed fire review bruises, this veteran burn boss is a strong proponent of learning from our escapes through reviews.

“I definitely believe that there’s value in prescribed fire escape reviews. If you have a bad outcome, you probably want to find out what happened—so people can learn from it. I don’t think reviews are a bad thing—even though I haven’t had the greatest experience with them myself. I still believe that they’re necessary. Once again, I really like the FLA and where we’re heading with that.”

### Review Lengths: Getting Out of Control

For the sake of argument, Jacobs says let’s just assume that people *are* getting the prescribed fire escape information and it’s relatively accurate. Once again he asks the key overriding question: “Are we then *actually* learning from it?”

“From my perspective, I guess that depends on the attitude of the people reading them—and the actual burn bosses themselves. I’d like to think people *are* open to learning from them. I know that I’ll print out escape burn reviews that catch my eye.”

Jacobs explains how he’s been giving these escape reports to his assistant, a new burn boss. He says he asks him to read them and then they both discuss what they see—and determine if they’re getting the same insights and lessons.

“It helps when these review reports are short and you can actually read them within a reasonable amount of time,” he emphasizes. In fact, Jacobs fears that the length of our escaped prescribed fire reviews might be the big culprit in preventing folks from successfully learning from them.

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*“Because now it’s suddenly real time, man. It’s game on and things are happening and there’s a lot of distractions. You might not necessarily fall back on that escape burn report that you read a month and a half ago that had some real nuggets in it.”*

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## Burn Boss Advice

*[Editor’s Note: When we contacted veteran burn boss Ben Jacobs to pick his brain for insights on prescribed fire escape learning (see adjacent article), Ben ended up sharing some unique insider advice for burn bosses. We realized that his own—verbatim—word might be beneficial for our Two More Chains’ readers.]*



By Ben Jacobs

I think the burn boss needs to really take the planning process seriously and learn how to write a good plan. I’ve taught a burn boss class nearly every year since the late 90s. I typically see a reluctance to write a burn plan. I mean, we’re doers. We like working in the woods and dragging hose and running saws. We don’t like typing on computers—at least I know that I don’t. There’s a lot of folks at the technician level in the class. Sometimes I’m not sure how much value they see in the planning process and the actual writing. But they have to be able to write a professional, literate document that will hold up under significant or legal scrutiny. If they ever need it—they’ll be glad they did.

Writing just doesn’t come natural to a lot of folks in fire. We tend to not be “book” type people. We tend to want to work with our hands out in the woods. “School” type stuff is usually why we chose to be out doing this. In other words, we didn’t necessarily want to go to school. *[Full disclosure: Jacobs does have a BS in Natural Resource Management from Cal Poly, San Luis Obispo.]* But you just have to bite the bullet and learn how to write a good burn plan.

The field stuff is easy. That’s the thing that we’re good at. Most burn bosses I know, once they get fire on the ground, they’re OK because they’re in an environment that they understand. That’s certainly the case with me. The least amount of stress I have is usually when we’re actually burning. It’s all the planning and build-up that is probably the hardest part.

So, my advice is don’t cut corners with the planning process. When you write a burn plan, there’s sometimes when you want to do a “C” job. But you really always need to do an “A” job. It is a legal document. A bad plan can really get you in trouble.

Of course, if you implement your “C” plan without any problems, no one’s going to know. But if something goes wrong, if somebody has an accident or an injury—it opens up the door. People are going to review what happened. At that point, everything is fair game. That’s my biggest advice.

I guess the other thing is knowing the policy. Prescribed fire is such a huge part of my job. You really have to know the policy, too. Here *[on Ben’s unit]*, to be a burn boss, you have to write the plan. But that’s not necessarily the way it’s done on other units with other agencies. But I think it’s a really good practice for the burn boss to write the plan and go all the way through the entire approval process. You’ll be a much more effective burn boss if you understand that process—versus being that guy out there who just does the briefing and tips the torch kind of thing. *[For more advice from another burn boss, see page 8.]*

“The problem really is the length of these reviews. We discussed this at the workshop [see bottom of page 4]. It’s getting a little out of control.

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[continued from Page 3]

I know I don't have the time to sit down and read 100 pages. I can read ten pages maybe to get to the point—to get at the nuts and bolts of what happened along with some recommendations.

"But," Jacobs chuckles, "when you have 15 to 20 recommendations, you're probably not going to implement any of them."

#### Value in Reading Reports

This longtime burn boss is no stranger to the difficult two-world dichotomy of back in the office and out in the field.

"There's a big difference in reading the review in an office and then being out in the field and having some of these same things happen to you—and *then* making the connection to what you read. Because now it's suddenly real time, man. It's game on and things are happening and there's a lot of distractions. You might not necessarily fall back on that escape burn report that you read a month and a half ago that had some real nuggets in it. Maybe, after the fact—upon more reflection—you might finally realize that that's kind of what happened to those guys down in that other part of the country.

"So, yes, I think the learning is challenging. And I think there's a lot of value in reading these reports. But the value is if they are concise and you can actually get something out of them that you can retain."



**Prescribed burn on Colorado's San Juan National Forest.**

Photo by Eric La Price

#### PRESCRIBED FIRE OPERATIONS GUIDE (PFOG)

##### SEQUOIA AND KINGS CANYON NATIONAL PARKS



#### Case in Point: Putting Prescribed Fire Learning into Practice

Prior to 2006, Sequoia and Kings Canyon National Parks had already institutionalized the use of After Action Reviews (AAR) and AAR rollups. Then, during the 2006 burning season, some negative outcomes occurred—including burning too hot on some burns and some human errors. "With the history of what our AARs were telling us, combined with the negative outcomes of our 2006 season, we decided we needed to take a look at our fuels program," explains Ben Jacobs, Fuels Management Specialist for the parks.

A four-person task group was assembled to produce a *Prescribed Fire Operations Guide*. Chaired by Jacobs, as fuels specialist, the task group also included a district fire management officer, an engine captain, and a helicopter superintendent.

"Over the course of that winter we ended up reviewing our entire program. We came up with recommended guidelines for all burns. We also put together a list of issues for as far back as people had institutional knowledge. Then," Jacobs explains, "we listed these issues and underneath each one, we listed case examples where things hadn't gone as well as we liked. [To see this *Prescribed Fire Operations Guide*, click the link below: [http://wildfirelessons.net/documents/Prescribed\\_Fire\\_Operations\\_Guide\\_SEKI\\_NP\\_Final.pdf](http://wildfirelessons.net/documents/Prescribed_Fire_Operations_Guide_SEKI_NP_Final.pdf).]

"Our standard operating guidelines aren't requirements, they're more of a 'best practices' thing. We also identified heads-up 'pit falls' in all of our recommended guidelines. I thought it came out pretty good."

Jacobs says the plan is to "dust off" their *Prescribed Fire Operations Guide* this winter. "We want to go through it with a similar small group to update it, look at it through the lens of the last five years—seeing if we have any new and different issues to include."

## Workshops Gather Feedback on How We are—Or Aren't—Learning from Our Escape Reviews

Five two-day workshops designed to gather feedback on "*Using Escaped Prescribed Fire Reviews to Improve Organizational Learning*" were held from January through July 2011 in: Portland, Ore; Denver, Colo.; Salt Lake City, Utah; Tucson, Ariz.; and Tallahassee, Fla.

Workshop participants represented a wide range of positions, from folks in the field all the way up to Washington Office staff.

Sponsored by the Joint Fire Sciences Project [to learn more about the JFSP, visit: <http://www.firescience.gov/>], each workshop looked into topics such as "*How lessons are—or are not—moved into action and change behavior*," and "*Both the barriers and facilitators to learning*." Participants at each workshop also developed ideas for improving our current review system—all in an effort to further encourage organizational learning from our escaped prescribed fires. **[Continued on next page]**

[Continued from Page 4]

### Scapegoating Versus Crew Buy-In

Workshop field-level participants generally characterized a “failed” prescribed fire review report as one that results in blame and scapegoating—and does not describe the “correct” or “entire” story. They characterized a “successful” review as one in which the crew has buy-in, learning happens, and everyone comes away satisfied with the process and its result.

Mistrust surrounding reviews was a concern that commonly surfaced in these interactive workshops. Participants often asked whether we conduct reviews for the sake of learning or for the sake of policy—or both? This led to discussions about the intended review audience and scope of the review. A consensus emerged that while the prescribed fire review should be for the fire management officer and everyone working under this position, currently, they are *not* designed for this audience.

### Work Respectfully with the Field

Workshop participants underscored the importance for a review team to “work respectfully with field folks.” Some people cited past experience with review team member attitude and behavior that eroded home unit trust and worsened an already negative climate for reviews.

Other negative experiences with review teams included when their members seem to “have an agenda” and want to advance a “pet issue”—even if ground crews believe that this issue was irrelevant to their incident. Another observation broadly voiced by workshop participants concerned how reviewers with a preconceived bias about what they *think* happened can influence their approach and serve to detract from the final review report’s learning potential.

### Get the Perspective from the People on the Ground

Workshop participants also explained how it is important for the review team to document what happened from the perspective of the people on the ground. In addition, they voiced how important it is for employees to clearly understand the commander’s intent and objectives for the review.

When asked what features and qualities they would like to see in the review team’s product, workshop participants said their report should help others understand the decisions that were made by the people involved at the moment.

### So, Can You Learn from Someone Else’s Experience?

Workshop participants also explored other potential learning products/avenues besides reports. These included: Google Earth tours, podcasts, video interviews, sand table exercises, and “road shows” in which the burn boss or burn team participants travel to trainings, fire refreshers, workshops, and conferences to share presentations about the event.

A constant complaint fielded at all of the workshops was the length of prescribed fire escape review reports. While many field-level people want the specifics of

what happened and what was learned, participants observed that our current reports are often too long and contain too much “fluff.” Many workshop participants emphasized the importance of reducing the length of review reports to two to five pages. Others voiced the need for all review reports to include: a chronology, maps, pictures, and quotes from people who were there. At all of the workshops—from coast to coast—the overriding question that everyone kept circling back to: *Can you learn from someone else’s experience? Or, to truly learn, do you have to experience the escape yourself?* Some workshop participants believed that we can, indeed, learn vicariously from the experience of our peers. At the same time, other workshop participants worried whether or not learning from someone else’s experience can actually happen.



**Workshop participants underscored the importance for a review team to “work respectfully with field folks.”**

Photo by Mark D. Roper

### Next Steps . . .

Anne E. Black, Social Scientist Analyst with the Human Factors and Risk Management RD&A (USFS Rocky Mountain Research Station) and “principal investigator” for this JFSP “Using Escaped Prescribed Fire Reviews to Improve Organizational Learning” project informs that the following products will evolve from their workshop feedback:

- ❖ Recommendations for improving escaped prescribed fire reviews based on field and desk-based assessments. (The NWCG subcommittee charged with revising the *Prescribed Fire Implementation Guide* has been briefed.)
- ❖ Six six-minute podcasts covering various tips for organizing and conducting reviews that can be used by people on their home units and on review teams (to be released in 2012).

### For More Information . . .

- ❖ Join the LLC Webinar on Feb. 21, 2012.  
<https://www1.gotomeeting.com/register/555344441>
- ❖ Attend the IAWF’s 3<sup>rd</sup> Human Dimensions Workshop, April 17-19, 2012, in Seattle, Wash.  
[http://www.iawfonline.org/HD\\_Seattle\\_2012/](http://www.iawfonline.org/HD_Seattle_2012/)
- ❖ Summary of information from the five workshops:  
[http://www.firescience.gov/projects/10-1-05-1/project/10-1-05-1\\_Workshop\\_flip\\_chart\\_summary\\_final.pdf](http://www.firescience.gov/projects/10-1-05-1/project/10-1-05-1_Workshop_flip_chart_summary_final.pdf)  
[http://www.firescience.gov/projects/10-1-05-1/project/10-1-05-1\\_Workshop\\_Discussion\\_Summary\\_final.pdf](http://www.firescience.gov/projects/10-1-05-1/project/10-1-05-1_Workshop_Discussion_Summary_final.pdf)
- ❖ Workshop member demographics:  
[http://www.firescience.gov/projects/10-1-05-1/project/10-1-05-1\\_Workshop\\_demographics.pdf](http://www.firescience.gov/projects/10-1-05-1/project/10-1-05-1_Workshop_demographics.pdf)
- ❖ Summary PowerPoint presentation:  
[http://www.firescience.gov/projects/10-1-05-1/project/10-1-05-1\\_Safety\\_Summit\\_ppt\\_presentation.pdf](http://www.firescience.gov/projects/10-1-05-1/project/10-1-05-1_Safety_Summit_ppt_presentation.pdf)
- ❖ Key summary workshop input:  
[http://wildfirelessons.net/documents/Workshop\\_Key\\_Summary\\_Input.pdf](http://wildfirelessons.net/documents/Workshop_Key_Summary_Input.pdf)



**Fall burning in Kings Canyon National Park.**

Photo by Arrowhead Interagency Hotshot Crew

## Prescribed Fire Learning 'Tools': Videos and Reports

### Videos That Share Prescribed Fire Lessons

**Standing Accountable – Paul Gleason’s Lessons Learned from Cerro Grande** (32 min.)

<http://youtu.be/kRJTnpq4mQA>

**Remembering James Lee Swiderski – The story of the Mack Lake Prescribed Fire escape fatality**

Part One: (22 min.)

<http://youtu.be/xYs8uGsyfh0>

Part Two: (18 min.)

<http://youtu.be/OUKVGMeqbqo>

**Burn Boss Stories** (20 and 40-minute versions)

<http://youtu.be/Ee9-KcXlqug>

**Return to Cerro Grande** (1 hour)

<http://youtu.be/7oD2ClwZiY>

**Rx Fire and Fire Use Lessons Learned** (1 hour)

<http://youtu.be/nC66qG9OmEc>

**Decision-Making for Prescribed Fire and Fire Use Managers** (1 hour)

<http://youtu.be/nC66qG9OmEc>



*Prescribed fire sends spots over holding/containment lines on this 2007 escaped burn in Utah.*



**Breaks One Unit Four Prescribed Fire Escape Facilitated Learning Analysis**



Salmon-Challis National Forest  
North Fork Ranger District

September 2010

*“Put boots on the ground when you’re the burn boss. Don’t get all excited about burning until you are familiar with the unit and the plan.”*

*“Walk the ground when building the plan...The plan is only as good as the information that goes into it...So go get the best info possible by getting out on the ground.”*

Some of the lessons learned and shared by burn participants in this September 2010 Facilitated Learning Analysis.

[http://wildfirelessons.net/documents/Breaks\\_1\\_Escape\\_RX.pdf](http://wildfirelessons.net/documents/Breaks_1_Escape_RX.pdf)



**Prescribed Fire Escapes and Near Miss Lessons Learned**

Using the High Reliability Organizing Concept of Mindfulness to Better Anticipate and Contain Unexpected Events on Prescribed Fires



Information Collection Team Report  
October 2008



This report, designed to help prescribed fire practitioners improve their skills in planning and implementing prescribed burns, was developed by the Wildland Fire Lessons Learned Center in 2008. It examines similarities in prescribed fire escapes through the lens of High Reliability Organizing (HRO) concepts.

[Prescribed Fire Escapes and Near Miss Lessons Learned](#)

*For more learning from prescribed fire escapes, see Burn Boss James Pettit’s firsthand insights into his escape experience on page 8.*



## Shop Talk

## Drip Torch Tips

NWCG has recently released [The Interagency Ground Ignition Guide](#) (PMS 443). This guide has an entire chapter dedicated to drip torch safety, use, and maintenance. Check it out!

A Publication of the  
National Wildfire  
Coordinating Group



## Interagency Ground Ignition Guide

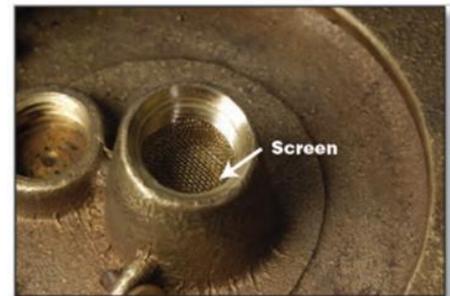
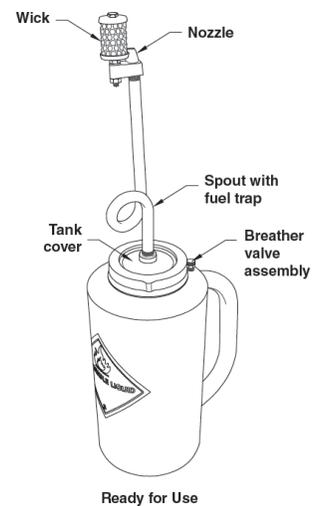
PMS 443

September 2011



### Recommended Spare Parts

- Fuel tank cover gaskets
- Closure plug O-rings
- Wick assemblies
- Lock rings
- Check valve assemblies
- Check valve screens
- Breather valve assemblies
- Closure plugs
- Closure plug chain assemblies
- Spout with fuel trap
- Tank cover
- Nozzle
- Clamps for wick
- Wick clamp screws



### Five-Gallon Batch Fuel Mix Guide

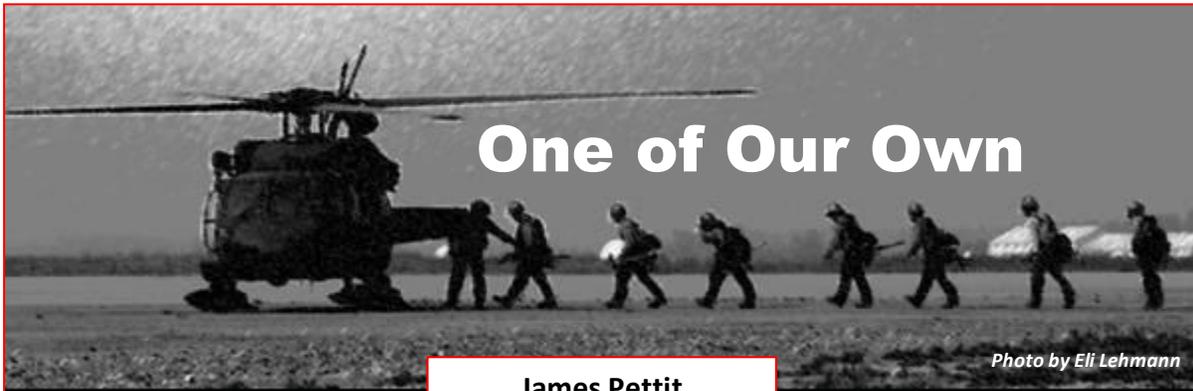
Have you ever had trouble filling up a truckload of five-gallon safety cans with the correct 3-to-1 torch mix?

Check out this handy guide:

[http://wildfirelessons.net/documents/Burn\\_Fuel\\_Batch\\_Mix\\_Guide.pdf](http://wildfirelessons.net/documents/Burn_Fuel_Batch_Mix_Guide.pdf)

It'll help you get the math right  
the next time you're at the gas pump!

If you have a subject idea  
for this column, please send it to us:  
[lessonslearnedcenter@gmail.com](mailto:lessonslearnedcenter@gmail.com)



**James Pettit**

Photo by Eli Lehmann



*“As I stood out on that road watching that column go up over that hill—I probably haven’t had a lower moment in my career. My first thoughts were: ‘Am I going to get fired? Do I even want to be a burn boss anymore?’ ”*

*“In my mind, overconfidence played a huge part of it for me personally. You have so many successes. Pretty soon, you start thinking you can pull off anything. We’d done about ten years of successes. You get to rolling on it and you think you can do it all. Any time you have that much success you start picking smaller and smaller bull’s eyes. That’s what we did here—our window for success was really small.”*

**James Pettit, Burn Boss,**  
**Sharing his prescribed fire escape story insights to the 2010 Southern Region Burn Boss Workshop in Destin, Florida.**

**An Inside Perspective and Advice from a Burn Boss Who Lost One**

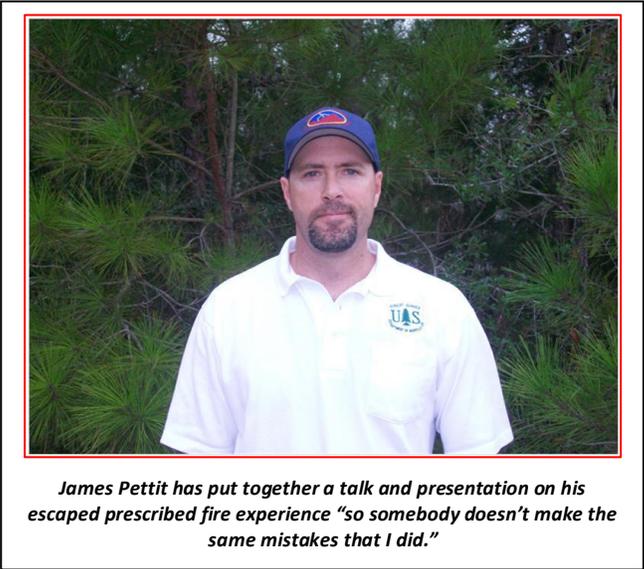
On October 1, 2009, the 1,000-acre Twin Prescribed Fire is ignited southwest of the town of Williams, Ariz. That afternoon, several spots occur outside the burn unit. The next morning, more spots are found east of the burn unit in heavy fuels—in relatively inaccessible terrain.

One of these spots becomes established beyond the capacity for control by ground forces—resulting in an escape and a subsequent conversion to a wildfire that threatens homes and requires the evacuation of 150 residents.

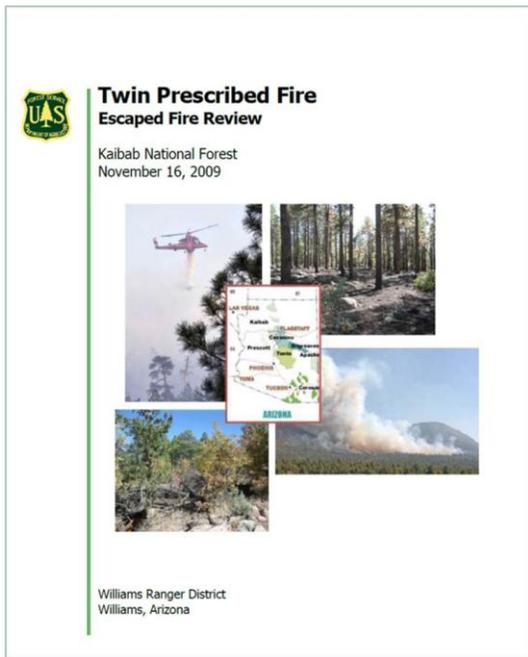
After the formal national review process is complete, James Pettit, the Burn Boss Trainee on this Type 1 prescribed fire, gives a presentation on what occurred and what he learned from this burn escape to the Southwestern Region Prescribed Fire Workshop. Since, he has told his escape story to various prescribed fire practitioner audiences representing different units and agencies ten times—and counting.

This January, while detailed to work as a District FMO on the Kisatchie National Forest in Louisiana, James generously took time out from his burning duties there to answer some questions for *Two More Chains*.

[Continued on next page]



*James Pettit has put together a talk and presentation on his escaped prescribed fire experience “so somebody doesn’t make the same mistakes that I did.”*



***Burn Boss Trainee James Pettit describes how he was surprised by the national review team process. It wasn't at all what he had imagined it to be.***

[Continued from Page 8]

***Why Have You 'Gone on the Road' to Tell the Story of Your Twin Prescribed Fire Escape?***

I decided that it would be really beneficial to get the story out, especially to current and future burn bosses—so somebody doesn't make the same mistakes that I did.

I think that you can get a lot more from somebody that's explaining the details to you rather than reading about it in a review report.

I'm still willing to give my Twin Prescribed Fire escape presentation to others. There's a lot to be learned from my story. I think a lot of people operate the same way that we [on the Kaibab National Forest] operate. I think a lot of times we get lucky and we think we're good. Eventually, the law of averages catches up with you.

***What are the Different Ways That You Have Learned From the Twin Prescribed Fire Escape?***

My biggest lesson is that I realized that we, as a culture of fire and prescribed fire, really start to develop a high confidence level from all of the successful burns that we pull off. As you do that, you start narrowing your windows of opportunity because you start chipping away at the edges of the envelope. The more successes you have, the tighter your windows get. Eventually you can't get yourself through that small window. We actually set ourselves up for failure with the confidence that we build into our programs.

*James Pettit, Helicopter Program Manager on the Kaibab National Forest, started his wildland fire career in 1990 working on engines and helitack on the Kaibab. Today, during the off-fire season months, he works primarily in fuels and prescribed burning. In 2011, he was selected for an FMO detail on California's Stanislaus National Forest. His FMO detail on the Kisatchie National Forest was to conclude at the end of this January.*

That's what happened to us. We started out as a small district trying to get some accomplishment done and we kept building on our successes year after year. Because we were accomplishing more and more, we kept biting off bigger and more complicated pieces. As your confidence grows, you get this sense that you can pull off almost anything. That's exactly what happened to us. It was almost an overconfidence issue.

Something else that I learned from this escape, I realized that you learn more about yourself and the people you work with through adverse conditions—rather than all the successes that you build up along the way. You really get a feel for how people react in times of adversity and what kind of character makeup you have in your district. So, for me, that was a really big lesson on how everybody pulled together. There was no finger pointing. There was no placing of blame. We fell down as a crew and we stood back up as a crew.

The other thing I learned was how important it is for a burn boss to know your policy. Especially when you're pushing the edge of your prescription parameters on where and what to do. There was a miscommunication between me and the line officer. I can honestly say that I didn't exactly follow what the policy was for those procedures at the time. And so that was a learning



***The escape of the Twin Prescribed Fire provided James Pettit with several key insights and lessons. "The more successes you have, the tighter your windows get," he now explains. "Eventually you can't get yourself through that small window. We actually set ourselves up for failure with the confidence that we build into our programs."***

lesson for me—knowing where you’re at regarding policy at all times.

Another lesson we learned is the importance of really increasing your long-term situational awareness. I think everybody tends to focus in on short-term situational awareness—on what’s around you, on what’s happening immediately in front of you. But I’m not so sure that everybody remembers to focus on long-term time and space situational awareness. What’s a mile, two miles, three miles out in front your burn? What are you going to do if something goes wrong? What are you doing for staffing tomorrow and the next day and the day after that? That kind of situational awareness.

We also really learned how valuable the fire information officer is at the district level. Because of the nature of the escape and the onslaught of public and media scrutiny, we really felt—after the fact—that we couldn’t have done it on our own. We would have been completely overwhelmed had we not had dedicated folks to deal with the media and the phone calls that were coming in every day.

*On someone’s first few burn boss trainee assignments, they typically have a large amount of input from their trainer. James Pettit has several years of Type 2 burn boss experience. He explains that the complexity on this particular prescribed fire wasn’t necessarily due to the fuels inside the burn perimeter, but rather the resources located outside the unit—the town of Williams and its watershed. That’s why on this Type 1 burn, Pettit’s official status was “trainee.” While he was basically in charge of the burn, he did have input from his trainer—who was there the entire time.*

#### ***Do You Look at Escaped Prescribed Fire Reviews Differently Now?***

I really do. I think that generally a majority of burn bosses out there have probably never been through a prescribed fire review other than maybe at the local level. When you have an escape the scope of ours that brings in a national review team, I think your perception of what that might be is complete trepidation, to say the least. You’re expecting the worst. You’re expecting folks to come in and really put the hot lamp on you—scrutinize every decision that you’ve ever made.

But, as it turned out, the process for me actually became somewhat therapeutic. I had a story to tell and I wanted to get it off my chest. The review team really created an atmosphere that I felt like I could trust. I could tell my story and they were looking to help find answers of what went wrong—not looking to place blame.

So, once the review team arrived and I got to talking to those folks, I felt much more comfortable. They were providing us an avenue of really telling and explaining our story. While they didn’t find out anything that we didn’t already know, it was a good way for us to explain everything. The whole review experience was a lot more positive than what I had expected it to be. [Twin Prescribed Fire Escape Review Report: [http://wildfirelessons.net/documents/Twin\\_EscapeReview\\_111609.pdf](http://wildfirelessons.net/documents/Twin_EscapeReview_111609.pdf)]

#### ***Do You Think We Can We Actually Learn from Review Reports? Learn from Someone Else’s Experience?***

You have a percentage of folks out there who really read reviews and dig into the meat and depth of them. But I think, for whatever reason, there’s a larger percentage of people who don’t. These people aren’t that interested in reading the reviews and gleaning information from them. I think the majority of these people learn from real stories like mine.

That’s the feedback that I’ve gotten from folks. I think I can reach far more people by going out and presenting what happened in terms that everybody can really understand. Even when reviews are written well, I think it’s easier to digest the information when it comes from an actual first-person account—rather than reading a somewhat dry review.



***A helicopter with bucket works the Twin Prescribed Fire escape.***

For me, I learned a lot from the review process. In my mind, there was a certain way that I looked at the whole thing—I knew what happened, I knew some of the mistakes I made. But, at the same time, there were things that I found out through the review that I may not really have thought of as contributing factors. So I think the review process gives you the ability to look at your event through someone else’s eyes. You are so close to the event that you can be clouded by all the little details and not have that broad picture.

#### ***Do You Write Your Prescribed Fire Plans Any Differently Now?***

When I first stepped back and read the escape review report, it said that the burn plan was too big and too complicated. They thought it was well written, but they also thought it might be difficult for the burn boss to read and follow it. When I first read that, I disagreed. I knew what I was doing and I knew where I was at. I knew the prescription parameters and I knew the staffing levels. I knew

everything that I needed to know. I thought the burn plan was really well written. Sure, it might have been a bit big, but this was a Type 1 burn.

But, looking back on it, I've since rewritten that burn plan. I've tried to make it less complicated. I may not be the person who will be implementing that burn plan—going out and using it on the ground. I initially thought the plan's prescription was good. But in rewriting the plan, I've moderated that prescription. I realized that if I really take the good hard lesson of what happened, I'd be a fool to do the same thing twice. That would mean that I hadn't learned anything.

So—because of the risk involved and the potential consequences—we ended up moderating the prescription levels on it and making it a little cooler burn. Saying, OK these are the same conditions, it's the same ponderosa pine—but the consequences and risk here are greater. So let's have a little buffer or window in the burn plan to try to get some work done out there—with hopefully a lot more of a chance for success.

#### **What Three Recommendations Would You Provide a Burn Boss/Trainee Who Has Not Experienced an Escape?**

Number one is the confidence. I had never had an escape before. Everybody's in that same boat. If you burn long enough and have enough successful burns, you will start pushing the envelope a little bit. So if you burn enough acres, you'll have a good chance of having an escape someday. It's just the nature of the business. It's not a risk-free enterprise. The law of averages eventually catches up with most people. So I would say to be careful of overconfidence and believing that it will not happen to me.

My other recommendation is to make sure that you follow your burn plan—and that you know your policy. And to document everything that you do. Not only for a potential review team, but to provide yourself with some hindsight after the burn—whether or not it was a successful burn or you had an escape. It's always good to have some notes to use after the fact.

One of the bigger mistakes I made was listening to—but *not hearing*—the people who I've always trusted. I can sit here today and tell you that I listened to them, but I didn't hear what they were saying. To me, in my mind, that's big. During the burn, I was talking to the aerial ignition boss in the helicopter. He's always given me good wisdom—99 percent of the time, he's right. But, on this day, I didn't see enough of the fire where he was lighting. Nothing was moving in through there where I wanted fire.

#### **Looking for 'One of Our Own' Candidates**

Do you know someone who might make a good candidate for this "One of Our Own" section—a person whose story might be of interest and could benefit other wildland firefighters? Please forward this person's name and contact info, plus a brief summary of why he or she would be beneficial for this section to: Paul Keller, [prkeller@fs.fed.us](mailto:prkeller@fs.fed.us), 503-622-4861.

So I asked him to put some fire in there. He told me that he thought we should leave it alone. He said fire will eventually carry through in there. So I came back and countered that what I'm looking at in there looks kind of patchy. I said: 'Why don't you give me another line of balls in there.' He came back with: 'Are you sure you want to do that?' He said: 'I think it will eventually burn in there. It's just having a hard time.' I said: 'Yes, go ahead.' He did. And that's eventually where we got torching and the spots that eventually led to the escape.

So this was something that stuck in my mind because he's got a lot of wisdom for a young guy. And I'd grown to learn to trust him. But, on that day, I wasn't hearing what he was saying.



*"You have a percentage of folks out there who really read reviews and dig into the meat and depth of them. But I think, for whatever reason, there's a larger percentage of people who don't. These people aren't that interested in reading the reviews and glean information from them. I think the majority of these people learn from real stories like mine," James Pettit informs.*

#### **CHECK OUT**

the Wildland Fire Lessons Learned Center's **NEW** Channel on **YouTube**

[www.youtube.com/user/WildlandFireLLC](https://www.youtube.com/user/WildlandFireLLC)

[For best results with all QR codes in this issue, download the free Mobile Tag application for your smartphone.]



# Your **FEEDBACK**



## Consider More Human Factors in Firefighter Training

I would like to thank Brian for his willingness to share his story. [Editor's Note: Firefighter Brian Hicks detailed his entrapment experience in our last issue's "One of Our Own" section.] It brings home to me that we need to consider more of the human factors when training people.

We have changed how we train folks to use fire shelters by adding the wind and chaos. Maybe we should do the same with firing operations. I am reminded of Mann Gulch and Wag Dodge lighting a "survival fire" to create black in which to retreat.

Brian's comment about trying to do the burning as he had been taught is what we have to fall back on when required to act, or react—when things are going as expected. Fire behavior is not an exact science and we in the fire business continually need to ask ourselves: "Does today's business model match today's business environment?"

**Steve Gage**, NIMO Incident Commander

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## Fire Shelter Training

Your Fall 2011 edition's cover story "Your Fire Shelter: Would You Hesitate Deploying It?" ought to be required reading for the annual fire refresher/shelter deployment practice session for everyone.

Having worked in the fire business in one way or another for almost 40 years and having watched the "reluctance mindset" develop—since the inception of the fire shelter technology in the late 70s—I believe this is a major issue. Thanks for addressing it in such a meaningful way.

**Warren Montague**

Poteau Ranger District, Ouachita National Forest

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## Shelters Should Not Be 'Last Resort'

While reading the [Two More Chains Fall Issue] article about deployments, I noticed several references to "last resort" for use of a fire shelter. I couldn't help but think that—for the last 25 years that I have been in the U.S. Forest Service and in fire—it has been ingrained that the shelter is a last resort.

I think human nature tells us that if something is "last resort" we have failed to find a better solution. We don't like to fail, so we hesitate to use the shelter. At the end of the article I saw Tony Petrilli's comment, which is much more articulate than mine. I hope fire leadership really looks at this and we don't ingrain into the next generation that the fire shelter is a "last resort" and that

such language is removed from future fire training.

**Jeff Seefeldt**, Chequamegon-Nicolet National Forest

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## We Left Out Datum Info/And, How to Say Decimal Coordinates

In your [Two More Chains Fall Issue, "Shop Talk" section] article on Lat/Longs, you left out one very important piece of information: the datum. It is very important that everyone, especially on an incident, is using the same datum. Otherwise, coordinates will not be the same.

**Craig Carter**, Fire Behavior Analyst

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It is important that the user knows when communicating to aircraft that the datum should be set on their GPS to WGS 84 and the position format set to Degrees Decimal Minutes. This is the default datum utilized by all aircraft.

When dealing with the older original USGS topographic quads, it is important for the user to have their GPS datum set to NAD 27 and their position format set to Degrees Decimal Seconds. However, the new national USGS topographic map that is being created is in the WGS84 datum and the position format of Degrees Decimal Seconds, so it can be quite confusing when dealing with the "old" topos and the new national map topos. (The new national USGS map is being released across the nation—from east to west. The western portion has yet to be released. For more information, check out:

<http://nationalmap.gov/index.html>.)

Mixing up both the position format and datums can lead to huge positional errors when communicating with other units. I always recommend to people that when they are communicating Lat/Longs over the radio that they confirm the datum and position format used with each other. Aircraft GPS datums are set to WGS84 and most GPS units are set to that by default. It seems that the national standard for incident management is going to Degrees Decimal Minutes and WGS84 Datum.

**Lyle Koegler**, Firefighter, Los Angeles County Fire Department

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Instead of saying "four eight, three two point one two", I have always been taught to say "four eight, three two decimal one two (three)". It reinforces that you are giving a decimal coordinate.

**Debbie Bozarth**, Aircraft Dispatcher

*Two More Chains*, published quarterly by the Wildland Fire Lessons Learned Center, is dedicated to sharing information with wildland firefighters. For story tips, questions, or comments, please contact: Paul Keller, [prkeller@fs.fed.us](mailto:prkeller@fs.fed.us), 503-622-4861.



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