



Vol. 15 Issue 1 ▲ 2026 ▲ Produced and distributed quarterly by the Wildland Fire Lessons Learned Center

What Did We Learn in 2025?

By Travis Touchette, Director
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This issue of *Two More Chains* reflects a year that tested us in the wildland fire community in new, familiar, and sobering ways. We highlight lessons from assault-related incidents over the past two decades, examine specific events from 2025, and offer practical considerations you can apply immediately whether that's threat planning, managing fatigue during travel, recognizing electrical hazards, or strengthening your medical readiness with a "Stop the Bleed" mindset.

You'll also find reflections in *Ground Truths* about how attitude influences culture, especially during times of organizational change. And in *One of Our Own*, you'll hear insights from those who bring experience and perspective to the work we do every day.

This year marks a milestone at the Wildland Fire Lessons Learned Center: *Two More Chains* is now in its 15th year of publication. For 15 years, *Two More Chains* has helped promote learning across our community as we continue to progress, not as experts who have it all figured out, but as students of fire.

When individuals are willing to share what happened, what worked, what didn't, and what surprised them, it enables collective learning. It strengthens our ability to recognize risk, refine tactics, and lead with greater awareness. Whether those lessons surface through a formal learning review, a Rapid Lesson Sharing report, a facilitated discussion, or a conversation at the end of a shift, they matter.

Thank you to everyone who has shared lessons over the years and in 2025. The strength of the wildland fire community has always been its people and our shared commitment to get better. Let's keep learning.

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Cover Photo

Folsom Lake Veteran Crew and Diamond Mountain Hotshots catch a ferry across Lake Shasta on the Green Fire. Photo by Monte Kawahara, BLM.

[Turning Lessons into Learning](#)

For more lessons from last year, check out the 2025 Incident Review Summary. This document provides multiple exercises related to recent incidents. The aim is to present this information in a way that empowers us all to improve future operations—turning these lessons into learning.

[The 2025 Incident Review Summary](#)



GROUND TRUTHS

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Vibe Check

Do you like new stuff? Do you covet the latest gear—or do you hold tight to the classics? Here’s a test for you: Do your fire boots have high heels? OK, not fair. I didn’t mean to stumble into the fire fashion debate of the decade. I’m just trying to get you to think about your personal tendency to either embrace or reject anything “new.”

I know there is an entire crowd who is convinced that anything from the past is better. They would rock chrome-domes and jeans on the line if they could get away with it. Others consider themselves “early adopters” and now have cool jobs as drone pilots because they didn’t scoff at the idea 10 years ago. Most of us are in the middle somewhere. We like to think we make well-reasoned decisions about our level of buy-in when presented with anything “new”—like a United States Wildland Fire Service.

Are you excited? Are you dreading it? Either way, it’s important for you to know exactly how you are feeling. I imagine most of us are telling ourselves we’re taking a “see how it goes” approach, but most of us lie to ourselves on a regular basis. (I’m sure YOU are the exception.)

Your attitude matters because it drives your speech and behavior. Your speech and behavior have impact. Remember: **You Are The Example.** Don’t get it twisted. I’m not telling you WHAT attitude to take, I’m reminding you that you have influence. You need to be intentional with your vibe. To do that you need to know how you are feeling. Some of us are not good at knowing how we are feeling. If you are one who fits that profile, now is a good time to get better. Heads

up: This type of work is an “inside job” (honest self-reflection).

Change is hard. No big deal. We know how to do hard things. Step 1 is always the same: Get Started. **Hot Water** is where we find out what we are made of, individually and organizationally. Some of us move slow and grumble with every step, some grin and bear it, and others genuinely seem to be having a good time. Attitude matters and it drives how you and others experience the moment.

I have no idea what the road to standing up the U.S. Wildland Fire Service will entail, but I’m guessing there’s gonna be some bumps and maybe even some wrong turns. Again, sounds like a typical roll—going into a tough situation with lots of uncertainty should not be new to any of us.

I do know that wildland firefighters are the people I like to do hard things with because they are not afraid of Step 1 – Get Started. We will always face the work head on and make sound decisions based on information we have intentionally collected. That is how we do business. I have zero doubt that this will be our collective approach.

Individually, how you show up while this plays out is entirely up to you. Whatever vibe you radiate as we tumble forward, do the self-work to be conscious of exactly what you are putting out there and own the impact you have.

Be helpful.

Swing on, Toolswingers

Lessons from 2025

Assault-Related Incidents

Two of the wildland fire fatalities in 2025 occurred during initial attack operations in Coeur d'Alene, Idaho.

As the first resources arrived, a horrific chain of events unfolded—a gunman opened fire and shot three firefighters. Battalion Chiefs Frank Harwood and John Morrison died at the scene.

In an effort to honor through learning, we looked for lessons from past events.



John Morrison (left) and Frank Harwood (right).

**We found 10 assault-related events involving wildland fire personnel over the past 20 years.
90 Percent Involved Firearms**

Incidents involving an active shooter or threatening behavior have occurred in a variety of locations, including along active fireline, at helibase, at work stations, and on patrol.

In 2021 an Incident Management Team recognized an increased number of tense interactions and compiled a Rapid Lesson Sharing report that states: *“Incident Management Teams throughout the country have seen an uptick in hostility and frustration from the public during their assignments. In several of these incidents, IMTs have felt the need to be proactive and develop active shooter plans.”*

[Active Shooter Awareness for Incident Management Teams](#)

One of the more alarming instances occurred in 2021. A stranded motorist walked onto a helibase and eventually pointed a handgun at the Helibase Manager. A crew member said: *“I was sure Josh was dead.”*

[Active Shooter at Helibase](#)

The crew involved in this helibase event put together this helpful planning checklist:

Threat Planning

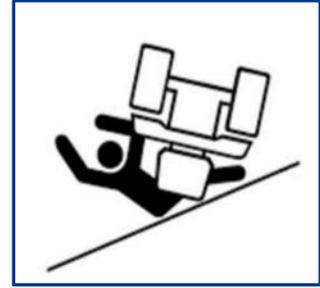
- ❖ 1. Where are you operating? (airport, remote site, urban setting, etc.)
- ❖ 2. What steps can you take to limit access to your location?
- ❖ 3. Have you identified a rendezvous point?
- ❖ 4. What is your communication plan and how will authorities be notified in an emergency?
- ❖ 5. Is an alert word established and known?
- ❖ 6. What is your plan of action?
 - Remain as calm as possible.
 - Alert adjacent resources of potential threat.
 - Evacuate, warn, assist, and direct.
 - RUN, HIDE, FIGHT.

Lessons from the Learners

Bullard Canyon Fire ATV Accident

As nighttime settled in, the ATV struck a juniper stump, causing the front wheels to rise up, flipping the ATV and its driver into a backwards somersault. The ATV—along with the Engine Module Leader—did one complete roll and landed upright on all four tires with the Engine Module Leader still in the seat.

The Engine Module Leader was able to walk to a nearby road where they were picked up and driven to a local hospital. The ATV driver sustained injuries to their C6 and C7 vertebrae and was transported by fixed-wing air ambulance to a larger hospital due to the nature of the injury and likelihood of a need for surgery.



Lessons

- ❖ Obstacles are more difficult to see in the dark. Reevaluate risk as conditions change.
 - ❖ A self-medical evaluation is not an accurate assessment of one's actual physical condition.
-

Hope Fire Vehicle Accident

An Incident Management Team (IMT) was ordered for the Hope Fire in Washington state on July 9, 2025. Resource orders were promptly made to IMT members and the travel process began. One team member secured a National Emergency Response Vehicle (NERV) rental and began a multi-day trip to the incident.

On the second day of driving, all that this driver remembers is looking at a guard rail from the driver's seat and realizing they had been in an accident caused by falling asleep. We often feel pressures to get to our assignment as soon as possible.



Lessons

- ❖ If you are drowsy, don't drive.
 - ❖ Establish realistic arrival timeframes with incident leadership.
-

Nacimiento Road Unit 3 Pile Burning Burn Injury

While igniting the Nacimiento Road Unit 3 pile, (which was more like a log deck), the fuel and/or fumes reached the end of the pile where it had originally been lit, resulting in near spontaneous combustion.

When the entire pile ignited and flashed, the resulting blast hit the ignitor. He was knocked off his feet and tumbled backwards downhill. While falling downhill, the ignitor self-rolled to extinguish any possible fire on his clothes and body.

The ignitor received 1st, 2nd, and some smaller 3rd degree burns, mainly on the hands and forearms.



Lessons

- ❖ Don't add straight gas/diesel mix to the pile after it has been lit. Fumes can—and will—ignite before the liquid mix gets to a flame source. This is especially important when working with log deck-type piles that can be strung out for 50 to 60 feet.
- ❖ Prior to project implementation, ensure that the extraction locations are relayed to Dispatch and confirm approval for any proposed helicopter landing areas.

Blackburn Canyon Fire Engine Crewmember Broken Arm

During initial attack operations in a Type 6 Engine, it was determined that pumping and rolling from the cab was the best tactic. The driver made a sharp turn to let the nozzle firefighter extinguish burning vegetation.

During the turn, the unspooled hose snagged on vegetation and was pulled under the engine's rear wheel. This caused a sharp jerking motion, pulling the nozzle firefighter's arm back so quickly that it broke the radius and ulna bones and displaced the wrist in their left arm.



Recommended method with hose secured.

Lessons

- ❖ The unsecured hose spooled out, got caught, and was pulled underneath the tire. To prevent this in the future, two options were identified:
 - ✓ Tighten the hose reel brake to prevent the hose reel from moving.
 - ✓ Secure the hose to the nozzle holder to prevent it from touching the ground.

Electrical Hazards

On two separate occasions in 2025, firefighters received an electrical shock during suppression operations.



Oregon Mop Up Electric Shock

An engine crew was mopping-up fire around the base of a power pole. The Engine Boss observed the water boiling around the base of the pole, including some arcing and buzzing. He went to stand up from a crouch, put his right knee on the ground, braced his right hand against the pole, and received a significant shock when his hand made contact with the pole.

Three Creeks Fire Electrical Shock

An engine crew arrived at a fire that had already been knocked down. The crew was assigned to check for residual heat. One of the trees was in contact with overhead power lines. One firefighter reached inside a smoking hollow tree to feel for heat and received an electrical shock.



Lessons

- ❖ If you have fire near a power pole, call the power company before you do anything.
- ❖ It is best to assume utilities remain energized until confirmed otherwise.

Shop Talk

Stop the Bleed

Two reports received by the LLC in 2025 include elements of emergency medical care focused on stopping blood loss. Both were chainsaw cuts and were relatively large, ragged wounds that could have led to extensive bleeding. In both cases, treatment was effective.

While talking to this *Two More Chains' One of Our Own* interviewee, Medical Section Chief and Paramedic Brandie Smith (see next page), we asked her what she recommends in a "Stop the Bleed" kit.

The following list comes from her response. Brandie considered these the most critical pieces for a Stop the Bleed kit.

- ❖ Tourniquet
- ❖ Gauze—At least 2 rolls of wound-packing gauze.
 - ✓ Hemostatic gauze—gauze containing agents that more readily induce clotting—can also be helpful. Proper wound packing and pressure are the key, regardless of gauze type.
- ❖ Compression bandage—A roll of stretchy bandage material can help keep compression on a wound to slow bleeding.
- ❖ Trauma shears
- ❖ Responder gloves

Your ability to treat a patient is only as good as your training. Having a kit is important. Training on it is just as important. Stop the Bleed courses are abundantly available nationwide (and worldwide), often at no or minimal cost.

Excerpts from two 2025 reports that describe bleeding control in the field

Idaho Project Work Chainsaw Cut

"After determining that the injury was a ½-inch deep, 3-inch-wide laceration with no arterial bleeding—only steady blood flow—the crew Emergency Medical Technician stopped the tourniquet application."

"Medical treatment included:

- Direct pressure with hemostatic QuickClot bandage
- Pressure bandage applied after bleeding was controlled
- Circulation, sensation, and movement (CSM) checked and intact . . ."



Chainsaw wound to the lower leg that occurred in the Idaho Project Work Incident.



Oregon Project Work Chainsaw Cut

"Meanwhile, the injured but alert sawyer, who, as a trained Wilderness First Responder was the most highly qualified medical personnel on scene, walked the assisting crew members through the process of applying QuickClot pressure dressing and sling to his wound."

The sawyer's stitched-up upper right shoulder.



Brandie Smith

In this conversation between Erik Apland, Field Operations Specialist with the Wildland Fire Lessons Learned Center, and Brandie Smith, Medical Section Chief on an Incident Management Team, Brandie shares her insights and lessons on the challenges and advances surrounding the medical organization and response on wildland fires.

Key Insights and Lessons from this Medical Section Chief

Erik: Tell us where you're from and your path into wildland fire.

Brandie: I'll try to keep it short and sweet.

I grew up in Arkansas and moved to Colorado when I was about 24. I was always drawn to the outdoors—anything outside. Originally, I thought I'd get into ski patrol, so I got my EMT. But life is funny. I took an S-130/S-190 class and ended up in Salida, Colorado. Two of my instructors were captains with the Salida Fire Department and I started working with them on the structure side.

I spent a few years there, deploying on their Type 6 engine and tactical water tender. That's where I was introduced to wildland fire—and I just fell in love with it.

After several years with Salida Fire, I moved into the private sector, working as a Line EMT for about seven years. Eventually, a friend who ran a single-resource wildland program through her volunteer structure department convinced me to join her team. That's when I opened my SCKN (Status Check-In Recorder) and MEDL (Medical Unit Leader) Task Books.

I took a few assignments as an SCKN and then I basically weaseled my way into the Medical Section on that Incident Management Team. I'd just show up every day like, "Hey guys!" Finally, the Medical Section Chief asked: "Do you want to just do this?" And I said: "Yes."

Most recently, I joined the Sedona Fire District as a Firefighter/Paramedic at the end of 2025.



Brandie at her December 2025 official induction (badge-pinning ceremony) at the Sedona Fire District.

You can be a phenomenal urban EMS provider and still struggle on a fire. The radios are different. The lingo is different. You're using maps and Avenza. The culture is different.

Erik: That's interesting you brought up the Medical Section Chief. That's something we have seen recently, elevating the Medical Unit up to a Medical Section, part of Command and General Staff (C&G). Tell me about that.

Brandie: So Medical, as you know, in the ICS system is under Logistics. In my opinion, that's an outdated system. Every other section has progressed and changed with the times. The Medical Unit has been one of those units in which there's probably been more changes with Medical response, but it hasn't changed across the entire system.

In the Southwest, we started to see that needed systemic shift, especially during COVID. Logistics suddenly had so much more on their plate. And Medical had already grown beyond what Logistics could realistically manage.

With COVID a new role was introduced, the MEDL for infectious disease. So in our org chart under the Medical Section Chief we'll run with three MEDLs: A Planning MEDL; Support/Infectious Disease MEDL; and a Field MEDL. Because other diseases can run through fire camp, the Infectious Disease MEDL doesn't just deal with COVID. I've been on a fire where Norovirus spread through a spike camp. I mean, that's an incident all on its own. You need somebody who can break off to manage all of the people, the hotels, the doctors—all of that.

It's been super important to have Medical at the table in C&G, providing real-time information and making real-time decisions with other sections.

The Field MEDL is basically a conduit between the Medical Section and the folks out on the line. A big role from the Field MEDL is to train new medical personnel on the fire. Medical is the only position on the fire that doesn't have a Task Book. So there's no pathway. People show up green. That's just reality. I think that's one of the reasons why some of your federal agencies don't progress medical personnel.

A lot of companies are getting better at training their people—but wildland is a different animal. You can be a phenomenal urban EMS provider and still struggle on a fire. The radios are different. The lingo is different. You're using maps and Avenza. The culture is different. So during downtime, the Field MEDL is teaching people how to actually function on a fire. Because that half-day orientation class just isn't enough.

Erik: That makes a lot of sense to me. It's really interesting to hear how the Medical Section is being developed in the Southwest IMTs. It's not something I had run across before I met you last year on the Trout Fire on the Gila National Forest. How would you describe your role as a MEDL?

Brandie: Yeah, it's been super important to have Medical at the table in C&G, providing real-time information and making real-time decisions with the other sections.

As far as my role, my job in the Medical Section is to create a 911 system in the middle of nowhere. And then to incorporate the outside 911 systems to help bolster the response, providing transport from the incident to definitive care. This can involve patient transfers or using another agency's aid resources. It's actually a huge undertaking.



Brandie providing apples to wild horses at an ICP in New Mexico.

And it gets even more complex when we start putting out spike camps when the fire is growing and we are adding Divisions. We need to know in real time all of the information that all the other Sections know to provide the best care and most efficient response possible. The boots on the ground deserve to be taken care of the same as if they were in an urban setting.

The old idea of having one ambulance on a 100-thousand-acre fire—that just doesn't fly anymore.

We order ambulances,

two-person medical teams, REMS teams—multiple per Division depending on the distances and terrain—to try to provide that quick response anywhere on the fire. Of course, it's a balance. We work very closely with Operations so we don't order so heavy that we have medical resources getting in the way.

... the Medical Section concept ... is what I think needs to happen across the nation. It is the most efficient way to get real-time information, to make real-time decisions, to be able to implement a plan that is organized and strategic.

Erik: When I was going to different Drop Points to talk to folks about the Trout Fire entrapment that occurred in June last year, I was pretty blown away by the number of resources staged at various locations all around the fire. Ambulances, REMS teams of different levels, you name it.

Brandie: The main challenge we have is distance. You can't change distance and you can't change time. When we were on the Dragon Bravo Fire last summer, I would say we were *"an hour and a half from nowhere."* I can't change where the crews need to get to—where they have to hike into. But what we *can* change is the response time for an Advanced Life Support (ALS) unit. We try to get ALS to the injured person in 15 minutes.

Erik: Wow.

Brandie: I think all the Southwest IMTs are trying to run with appropriate medical resources. We all use that same model. Although that mindset isn't the same everywhere you go.

Some places still have Medical under Logistics and some have moved it under Safety. But again, that means sticking Medical into a place on the org chart that still has a layer between them and the IC. And usually that layer is not medically trained. They have fire training and experience, but not medical training and experience.

Erik: Let's talk about some of the differences you have seen between your roles in a hospital setting, an urban EMS setting, and the wildland setting.

Brandie: In an urban setting, you know what response looks like. If you're on the 100 block of Main Street, you know who's coming. In wildland, transport times are longer and infrastructure doesn't exist unless you build it.

So we create a system that mimics urban response. If you're on Division Delta, you should know what your medical response looks like. As resources get used, we shift coverage—just like a city would. That's where the Planning MEDL and Medical Section facilitate. We provide the resources that the field is calling for.

The other difference is the austere environment. It's dirty. It's remote. And there's more decision making required in the field.

Erik: I imagine that facilitation role is a lot easier as you have more medically-trained wildland firefighters as well as more wildland-trained medical professionals? You can rely a lot more on the decisions and the requests made in the field?

Brandie: You bring up a very good point. The relationships that we have built, especially in the Southwest. We have created and maintained our relationships with medical resources and made sure they are trained to provide the care needed, as well as with the Divisions and other parts of Operations.

For so long, there were really inexperienced fireline medical providers that didn't know how to use a radio, how to read the map. That didn't mean they were bad people or bad medical providers. These people just didn't understand the animal that is wildland fire. They were used to working in the urban environment. In wildland there's a lot more room for decision making in the field. There's actually more of a need for decision making in the field in the wildland environment.

**If your largest resource is your workforce, take care of it. You wouldn't fly an aircraft
with a chip light on. Why wouldn't we maintain our people the same way?**

So we have built that trust over the years with Operations. I still get questions sometimes—especially when I'm not in the Southwest or with folks from outside the area—about the medical resource ordering that I do. A Division will say: *"I have four medical resources!"* And I will say: *"Yes, but you have 20 miles of line. The other end of your Division is a 45-minute drive on a bumpy road."*

And we also have direct contact with the contractors who provide medical resources to fires. So if they send us two green medical providers, I can call them and say: *"Hey man, we've talked about this. Send somebody experienced with your new providers."*

Erik: Speaking of green medical providers, what advice do you have for someone going out for the first time as an EMT or Line Medic?

Brandie: Everybody starts green. So you shouldn't be scared that you're green. My biggest advice is to come in and listen—listen and learn. Because there's *so much* that is different from the urban environment that you were likely working in. Learn the incident; learn the culture. The culture is very different. Even if you work on a structure fire department, the culture is completely different.

And learn how the medical plan actually functions as a whole and how you integrate into that system. Technical skills are important, but situational awareness and communication are the parts to really pay attention to on the wildland side.

Erik: You've spoken about "culture" a few times. It is something I think about a lot. I know this is a tough question, culture can be really hard to pin down. But can you tell me how you see the differences?

Brandie: That's a tough question. The lingo is different. But it's more than that. The whole vibe is different. It's more raw; it's hard. And I don't mean that in the sense of "don't shower." I mean that you have to have your situational awareness up. You have to be on top of your game. And if you aren't, you're just going to get put in a Drop Point and not get to do your job because there is enough going on without having to worry about you.

But on the other side of that, when you can create that trust, it ends up being a very intimate relationship that can develop. You get to know your Division, you get to know the resources, you learn who is allergic to bees. You learn all the little things that come with getting integrated into your Divisions.

I love wildland. But it can be hard to get to a point where you have those trust relationships. It's easy to put up walls and say: *"I have my job and put my head down and do it."* But once you can break down those walls, it is a beautiful thing.

That's why I love the IMT life. We can trauma bond on a tough fire where we're getting our asses kicked. It can be 14 days of *"How did my life choices bring me here?"* But in the end, you see people walking through the halls and you can say: *"Hey buddy – Love you."* And that's all you need to say. You get the feeling: *"Okay, we're all in this together."* I've worked on all IMTs in the Southwest and every team I go to feels like that.

That's a lot of the cultural aspect. I don't quite have the words for it.

Erik: I struggle to describe it as well. And it also feels like it is always changing in subtle ways.

Moving from the medical providers to the operational resources, how can someone best prepare themselves to take care of another firefighter out on the line?

Brandie: I think a lot of this circles back to what we've been talking about, just with the pre-plan of everything. And that starts at Division's morning breakout. Making sure you know that medical plan and what, as a larger group, they're going to do in an emergency. But then once you get back into your crews or even just your three-person engine, say: *"Hey, if there's a medical, what are we going to do?"* You need to make sure that everybody knows how to call in a medical.

And most importantly, knowing the important parts of the MIR [Medical Incident Report]. There's a lot of focus on going through the entire thing, read it line for line, but really: *Where are you? What happened? And most importantly, what do you need?* Especially those two: *where are you and what do you need.* We can figure out the rest later.

Being able to effectively articulate those three things, I think, is one of the most important things. If you're new on an engine, ask your Engine Boss: *"Hey, let's run through this. How would I call this in? How does the radio work?"* Because it might be your Engine Boss that goes down. And then if you have no idea how to read through the MIR or even just get on the radio to call it in, then . . . Good Luck.

Erik: Right. And if you've been asleep in the back of the engine or truck and don't really know what's going on or where you are.



Brandie with Smokey Bear at the 2024 Indios Fire in New Mexico.

Here's the thing with Andy Palmer on the Dutch Creek Incident. There were medical providers there, but not a comprehensive system in place.

Brandie: And just a little note on location. Make sure the location isn't like "*Jane's house.*" Because that might be how that place is known among people on the Division. And I'm saying this because that was an example directly from experience. It was on the Calf Canyon Fire. A "Yellow" medical call came in and they said: "*We're at Jane's house.*" But we don't know Jane's house. So use common, known locations, like Drop Points.

As far as the actual care that a firefighter can provide, make sure you have some basic first aid supplies. Can you stop bleeding? Do you have a tourniquet? Do you have at least enough bandages to stop a bleed until ALS arrives?

And, also, recognize changes in your crew members. If you're hiking four miles and it is 115 degrees, think: "*Man, he's not normally aggressive like that.*" Or: "*He's way more articulate than that.*"

And I want to really stress this to wildland firefighters: Calling for a medical response isn't automatically going to get you demobed off a fire. That's a huge thing, especially for hotshot crews.

Hopefully, we can take care of small injuries or illnesses early so that they don't progress into something serious. A big thing for me is taking care of your feet. If you get trench foot, you are out for the season. Shower and clean your feet!

And, finally, we do still have medical care available in camp, so come see us. We can soak your feet in Epsom salt. I'll tell you to shower first though! But we're here to help you.

Erik: Absolutely. I know I have dealt with what felt like an oncoming cold in camp before with some meds from the medical unit.

I have a more meta question. What do you think are any blind spots that exist in wildland fire? Those things that we don't see because we are in it, indoctrinated into it, that maybe with your medical expertise you feel like we are missing?

Brandie: First off is this concept of "inherent risk." We know that this job is risky. So sometimes there is this mindset like: "*You signed up for this inherent risk, that's on you, buddy.*" That mindset is what we are trying to change. Because while there is inherent risk, *preventable* catastrophes are unacceptable. So going from "*Yeah, that's just what happens sometimes*" to "*No. We are going to change this*" is the mindset we are striving for.

Another blind spot is resource prioritization. On Dragon Bravo, we could drop millions of dollars of retardant—but I couldn't order DayQuil or NyQuil due to cost.

If your largest resource is your workforce, take care of it. You wouldn't fly an aircraft with a chip light on. Why wouldn't we maintain our people the same way?

We've normalized "*Just Make Do.*" That's something we need to change.

Erik: What's one systemic change you think would improve our medical outcomes on wildland fires?

Brandie: I talked through the Medical Section concept earlier, but that's what I think needs to happen across the nation. It is the most efficient way to get the real-time information, to make real-time decisions, to be able to implement a plan that is organized and strategic. Whether it's to help the people in camp or the boots on the ground. When an injury happens we need to get them to definitive care. That is the number one thing.

Here's the thing with Andy Palmer on the [Dutch Creek Incident](#). There were medical providers there, but not a comprehensive system in place. Having a functioning system in place to help prevent preventable illnesses or injuries is our number one function. The days of "*tough it out, you're a firefighter,*" should be over. Our firefighters deserve the same level of care that they would get in an urban setting. At least that's

what we should be striving for. And I think you don't get there without having a seat at the table in C&G meetings, sharing the information directly.

What Logistics does is amazing. They create a town in the middle of nowhere overnight. I'm not taking away from what they do by saying that Medical really is its own realm. It's all the same solar system, but, really, these are different worlds.

What Logistics does is amazing. They create a town in the middle of nowhere overnight. I'm not taking away from what they do by saying that Medical really is its own realm. It's all the same solar system, but, really, these are different worlds.

Erik: We always try to end these One of Our Own conversations with a favorite story from your career.

Brandie: When I think about fire, I remember some of the fires where I got to burn a whole mountainside with a drip torch, or the off day on some backcountry lake. I've gotten to see and experience some incredible places that I wouldn't have even known existed. Earth is cool.

But here's a specific story. I was on a fire in South Dakota on a Type 6 engine, sitting next to this beautiful lake. We had just done three days of firing around this whole mountain, fighting fire on top of the ridge, and we saw some amazing fire activity. That was the first time I experienced fire whirls and the sound of the train coming at you.

So our work was done. We were sitting by this lake and the Engine Boss says: *"Let me teach you how to make an MRE bomb."* After a while we got bored of that and started doing some rope rescue training. We were tying knots, tying ropes onto tools and hauling stuff. And the Safety Officer rolls up and he's like: *"Oh, I'm so proud of you guys. You're actually using this time wisely to train."*

And as he's standing there on exploded water bottle material, I'm scooting that material under the truck with my foot. I say: *"Oh yeah, that's what we do."* He responds: *"I just had to get onto these other crews for throwing axes."*

And we're like: *"That's insane, man. I can't believe they would do that."*

Your feedback is important to us.

Please share your input on this issue of *Two More Chains*:

bit.ly/2mcfeedback

Incident Report Staff Picks

The Wildland Fire Lessons Learned Center (LLC) staff members' recommended incident reports from 2025



I Suggest: [Pomas Fire Helicopter Cargo Load Release RLS](#)

Why I Liked It: This incident had a variety of lessons to share involving communication, equipment, and human factors. Aviation and ground resources work together all the time to accomplish a variety of complex and “seemingly” standard missions. There’s a lot to consider when aircraft is part of the decision-making process. A tip of the helmet from the LLC goes to this group, and all the others who shared lessons throughout the year. There’s strength in learning and the best way we learn is from each other.

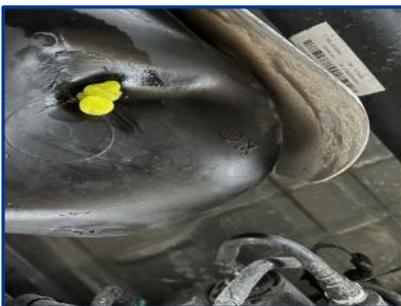
Recommended By: Travis Touchette, LLC Director



I Suggest: [Garnet Fire Hit by Tree Limb RLS](#)

Why I Liked It: Wildland firefighters are hit by trees and tree limbs every year; it is one of the most common type of accidents reported to us at the LLC. What stood out in this RLS were the complexities and tensions that arise as we expand our medical response and emergency extraction system on large fires. Is it best to let the professional rescuers get in place to extract a patient, or use our ready and able workforce to transport the old-fashioned way? How do we properly and consistently use the existing Medical Incident Report? In this RLS, the extraction is the story and there are a lot of considerations to discuss before the next IWI occurs.

Recommended By: Erik Apland, LLC Field Operations Specialist



I Suggest: [Goose Fire Vehicle Tank Puncture Incident RLS](#)

Why I liked It: I love seeing people do innovative things! This RLS tells the story of a module driving along a U.S. Forest Service road and while avoiding a pothole, taking collateral damage in the form of a stick to the gas tank. With gas actively spraying from the hole in the tank, the crew “MacGyver-ed” a plug with the supplies they had on hand. With a lot of miles being put on rigs on minimally maintained roads, this RLS also had a good reminder that “even small objects on the roadway can cause significant damage.”

Recommended By: Christina Anabel, LLC Operations Manager

[Continued on Next Page](#)



I Suggest: [Radio Operation Problem – and a Solution](#)

Why I Liked It: This RLS is an excellent reminder that our “Rapid Lesson Sharing” reports don’t always have to be the stories of oftentimes lengthy narratives detailing a specific incident. They can also be short-and-sweet heads-up solutions to potentially serious dilemmas that face wildland firefighters in the field. In this case, the RLS submitter wanted to share the fix for the control knobs cracking or falling off BKR radios. This submitter knew that many folks were experiencing these control knob issues. And they knew that if your communication devices are suddenly inoperable in a dynamic fire environment, it can result in serious adverse consequences. Kudos to them for therefore taking the time to build this important one-page RLS to help get the word out—the lesson—for resolving this radio defect. **Recommended By:** Paul Keller, LLC Writer-Editor



I Suggest: [Olympic NF Vehicle Accident RLS](#)

Why I Liked It: It’s short and to the point. Crazy things happen, like log trucks coming apart and getting in your way. We can’t make this stuff up, but lessons from close calls and full impacts don’t see the light of day unless the story is shared. The folks involved here chose to put a few words together and offer a handful of compelling lessons given the fact that they walked away from this wild ride with minor injuries. Newer vehicles have amazing safety features that work well. Read this two-pager to get the details. **Recommended By:** Travis Dotson, LLC Analyst

Looking Back – Vehicle Improvements

Over the decades, the hazards of wildland fire haven’t changed all that much. If you look at the documented fire fatalities from a century ago, the causes of death are the same as we see today: entrapments, tree strikes, medical emergencies, vehicle accidents. What has changed, though, is the equipment we use. This is exemplified in our vehicles: pickup trucks, fire engines, crew carriers, and so on. In three engine rollovers from 1949 to 1956, the State of California, alone, lost eight firefighters—many of whom had been riding in open-backed fire engines. Improvements in vehicle safety over the years has drastically reduced the number of fatalities and lessened the severity of injuries in similar accidents.

We can’t forget those who have been lost in more recent years in vehicle accidents, nor conclude that driving accidents aren’t a serious hazard. On the contrary, what these improvements show us is what happens when an industry adopts technology to increase safety. It also shows us how important it is to utilize the safety features offered to us. Incredible recent images from vehicle accidents with only minor to moderate injuries should absolutely pound into our heads:

Wear a seatbelt. Don’t ride in the bed of a vehicle. And inspect and maintain your vehicle.



A California Department of Forestry Ford fire engine involved in a rollover in 1956. Similar accidents involving open-backed engines were commonly fatal. (The outcome of this accident is unknown.)



A CAL FIRE Model 34C (built in 2007) engine involved in a rollover in July 2024. This accident resulted in moderate and minor injuries to the three occupants.