

# Two More Chains

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Wildland Fire  
Lessons Learned Center



**Brett Stearns**

BLM Engine Captain Stearns is fatally injured while falling a 68-foot dead aspen during a training exercise in 2009.

[Freeman Reservoir Report](#)



**Daniel Holmes**

In 2004, Arrowhead Interagency Hotshot Holmes is the 20<sup>th</sup> firefighter to be killed by a snag since 1960.

[Grant West Report part 1](#)  
[Grant West Report part 2](#)



**Andy Palmer**

NPS Engine Crewman Palmer dies from injuries received in a tree felling accident on a wildfire in 2008.

[Dutch Creek Report](#)

## If a Tree Falls in the Forest . . .

By Paul Keller

*"If a Tree Falls in the Forest—Does Anybody Hear?"* asks singer-songwriter Bruce Coburn in his 1988 song—borrowing from that old philosophical riddle about perception and reality.

There's no question that if you engage with wildland fire, the subject of trees falling in the forest is far more than a good song or an age-old riddle. Trees—alive or dead, on fire or not—or parts of them, suddenly hurtling toward earth—and you—are an ever-present, potentially life-threatening reality for all wildland firefighters.

As Travis Dotson pointed out in his "Ground Truths" column in our last issue, of all the accident reports submitted to the Wildland Fire Lessons Learned Center (LLC) last year, 33 percent of these injuries involved someone being hit by a tree. By the way, only one of these incidents involved a person actually cutting on the tree.

Let's face it, when you work in the woods—even if you're outside the active fire environment—you are constantly exposed to the inherent hazards of a potentially high-risk zone. As Travis explained, all of these tree-related injuries last year were serious. Accident locations ranged from Montana to Alaska and from Ohio to Kentucky. One involved a fatality when Kentucky Division of Forestry Firefighter Donald S. Lam is building line at the bottom of a rocky bluff. The roots of a snag, located at the top of the bluff, burn through. The snag falls from the bluff down onto Lam. After five long months of intensive hospital care and several surgeries, he dies of his injuries. (See this accident report at: [Scotts Chapel Road Report](#).)

Of course, tree-related fatalities and severe injuries are not new occurrences to our firefighting world.

As far back as 65 years ago, McCall Smokejumper Lester Lycklama was killed by a fire snag in Idaho. He and his partner were using a crosscut saw to fall a lightning-struck ponderosa pine. When the snag's top third suddenly breaks off and their spotter yells, Lycklama tries to run, but trips on a root. The snag drops onto his head. Lycklama dies two days later on the hospital operating table.

As we've been relearning—again and again—the past several decades, trees and snags can fall on you anywhere at any time in *any* part of the country. In 1971, in the woods outside Warren, Ark., resident John Clower—knocked unconscious by a falling fire snag—is then fatally burned by the fire. In 1990, first-year California Department of Forestry (today's Cal Fire) Firefighter Kenneth Enslow is packing hose to help suppress a spot fire when he is killed by a falling snag. Unfortunately—as our fellow firefighters on both sides of this page remind us—this tree/snag fatality and severely injured incident list continues to grow.

[Continued on Page 2]



**Mark Stanley**

County Forestry Technician Stanley is killed by a snag during dozer line operations in 2006.

[Mark Stanley Report](#)



**Krstofer Evans**

Plumas Interagency Hotshot Sawyer Evans is paralyzed by a falling snag on an arson fire in 2001. Read his story on page 5.

[Poplar Log Report](#)

If you would like us to include you on our e-mail subscription list, please click [here](#).

### In this Issue

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While falling hazard trees on the Missionary Ridge Fire in Colorado's San Juan National Forest in July 2002, contract faller and veteran sawyer Alan Wyatt, 51, is struck from behind by a green aspen tree—whose root system had been weakened by the fire. The blunt force trauma kills Wyatt upon impact. He is pinned under the tree. Immediately after the accident, the tree that Wyatt was falling is still standing—with his chainsaw still idling in the back cut.

A local chainsaw artist carves a life-size memorial (pictured above) to this "Fallen Hero" on a fire snag along the shore of Vallecito Lake near the accident scene. Photo by Alan Farnsworth.

[Continued from Page 1]

Just eight years ago, Gwen Soltis is leading a four-person fire erosion control and trail rehab crew in the aftermath of the McNalley Fire on the Inyo National Forest. In the middle of the night, as she sleeps in her tent, a 40-inch diameter, 136-foot tall dead Jeffrey pine falls on Soltis—killing her instantly. Investigators say the tree showed no signs of fire damage. It apparently had root rot.

For More Safety Info on Hazard Trees:  
[Region 1 Hazard Tree Page](#)  
[Hazard Tree Sub Committee](#)

**More Tree Injury Accidents This Year**

This year, we already have reports of more tree injury accidents on both fire and non-fire operations.

In February, a Cal Fire inmate conservation crew is performing tree and brush removal, falling conifers and oaks. As a sawyer makes his back cut, a limb falls and strikes him—causing shoulder, neck, and back pain. He is transported to a nearby hospital and is later released. This April, during falling operations on an aspen removal project on Michigan's Huron-Manistee National Forest, a sawyer is struck in the back of the head by a tree located 20 feet away from the primary tree being felled. The injury requires ten staples to the sawyer's scalp. (To learn more about this incident, read its Facilitated Learning Analysis: [Chittenden Tree Felling FLA](#). To view a video analysis of this accident: [Chittenden Video](#).)

**Don't Think That Puny Six-Inch Diameter Tree Represents Much of Hazard? Think Again**

In June this year, during mop-up operations on a fire in Alaska, a Zigzag Interagency Hotshot Crew member is struck on the head by a green tree whose shallow roots are burned out by the fire. The tree—approximately six inches in diameter where it hits the firefighter—causes head, shoulder, and rib injuries. The firefighter is expected to make a full recovery. (This incident's review is available at: [Hastings Fire Report](#).)

If you don't think six inches in diameter sounds like much of a hazard—please think again. Or, better yet, talk to Krstofer Evans. That's the same size tree that falls and hits this Plumas Hotshot sawyer on his head during a 2001 arson fire in Kentucky. The impact from this falling tree—whose 14-inch base had burned through—among other severe injuries, shatters Krstofer's teeth, collapses his lung, lacerates his spleen, and fractures several of his spine's vertebrae, paralyzing him. (This firefighter's complete story starts on page 5.)

**How Can You Prevent These Tree and Snag Related Injuries From Occurring?**

So, what's the answer here? How can you prevent yourself—and your crewmates—from being the next tree or snag-injury statistic? One approach, of course, is to avoid working in these identified high-risk areas. To aid you in making this decision, utilize the "Risk Management Process" (page 1 in your IRPG).

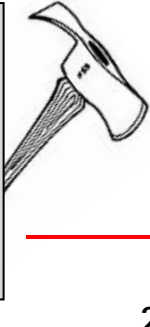
All firefighters should receive basic training in recognizing tree hazards. Always implement LCES and any other hazard control measures—including "Look Up, Look Down, and Look Around" for hazard tree indicators and high-risk tree species. Place your camps and park your vehicles in areas not at risk to falling trees.



Arrowhead Interagency Hotshot Crew members on the 2004 Meadow Fire in Yosemite National Park. Photo by Arrowhead Hotshot Crew.

Likewise, take your lunch and rest breaks in open areas—free of potential hazard trees.

Just as importantly, make sure that bucket on your head is an approved and well-maintained piece of PPE. It can save your life. And, where and when practical in the woods, use the buddy system: one works; one keeps "eyes up".



# Ground Truths

By Travis Dotson  
Fire Management Specialist  
Wildland Fire Lessons Learned Center  
[Travisdotson@fs.fed.us](mailto:Travisdotson@fs.fed.us)

## 2011 Accident Reports – Go Read Some

Here they are . . . The accident reports submitted so far this year. Go read some, available in: <http://iirdb.wildfirelessons.net/main/Reviews.aspx?Type=> (select “2011 to 2011” for date range).

You’ll find some good stuff. Two of the entrapment reports include a Google Earth depiction of the events (great for a visual learner like myself).

### Why Read a Report?

The whole idea of reading a report is to put yourself in the shoes of the decision makers and gain some insight and operational “slides” to deposit in your bank of experience. Right? OK, so this may not be the case for everyone. But the majority of the reports are written with the idea that someone will learn from knowing the details of the event. Does that happen? Are we *learning*?

I came up in a fire culture that taught me to read incident reports and then sit around saying: “*What were they thinking?*” “*They screwed up,*” and “*I would never get caught in that situation.*” Did I learn anything from those “*not me*” sessions? Or, did I just convince myself that I was not in any danger because “*I know better?*” Monday morning quarterback perhaps? (The academic term is “*hindsight bias.*” Look it up.)

So the question remains: Why read a report? How do we learn from it? In this instance, learning consists of changing your behavior. Read a report, go to a fire,

### Accident Reports Submitted (to date) in 2011

State	Incident Name	Accident Type
Kansas	Smokey Hill Wind Farm	Entrapment
Arizona	Bull Fire FLA	Entrapment
Florida	Blue Ribbon Fire Fatalities	Entrapment
Arizona	Horseshoe 2	Entrapment
Texas	Texas 2011 Fatality	Entrapment
North Carolina	North Carolina 2011 Fatality	Heart Attack
Mississippi	Mississippi 2011 Fatality	Heart Attack
Kentucky	Kentucky 2011 Fatality	Heart Attack
New Mexico	Las Conchas Rock Injury	Hit by Rock
California	Buckhorn Tree Felling	Hit by Tree
Michigan	Chittenden Felling FLA	Hit by Tree
Alaska	Hastings Fire Tree Incident	Hit by Tree
Texas	Texas 2011 Fatality	Hit by Vehicle
Texas	Texas 2011 Fatality	Unknown
Texas	CR 337 Fire Fatality	Unknown
Arizona	Diamond Fire	Unknown
California	Crew Carrier Rollover	Vehicle Accident
California	Parking Injury	Vehicle Accident
North Carolina	Fire Response MVA Fatality	Vehicle Accident
North Carolina	Paynes Bay Vehicle Damage	Vehicle Burn Damage
California	Greenwood Incident	Vehicle Burn Damage
New Mexico	Las Conchas Vehicle Burn Damage	Vehicle Burn Damage
California	Debris Fire Near Miss	Vehicle Burn Damage

operate differently because you read a report. Is that real? I don’t know. But I think it’s possible.

### Think About It!

I’ve read a lot of “Hit by Tree” reports. I’m terrified of getting smashed by a tree (or someone else getting smashed on my watch). But has my behavior changed? It never did until I consciously said to myself: “*This could be me. What am I going to do differently?*”

I now put much more thought into the exposure involved in what I ask others to do. Do I hold myself to that same standard? I do when I inquire of myself: “*Would I ask someone else to do this?*”

I didn’t always think this way.

I’m still not “out of the woods” (HA!) on this one. I still might get smashed by a tree, but I’d like to think I will expose myself and others to that potential a whole lot less—and mitigate what I can when I am exposed. Think about it!

### Just Throwing It Out There

So, read some of these reports. Be aware of the existence of hindsight bias. Consciously think about whether or not you are learning anything (will you change behavior?). I’m just throwing it out there.

Dig on tool swingers (and look up every now and then).



## Shop Talk

We all know how valuable chainsaws are to the firefighting effort. As reliable as saws generally are, they occasionally act up. Use these troubleshooting tips—in conjunction with the owner's manual—to help get your saw up and running again.

Photo by John Coil

### Chainsaw Troubleshooting Tips

For a pocket version of these chainsaw troubleshooting tips and more:

[Chainsaw Pocket Sheet](#)

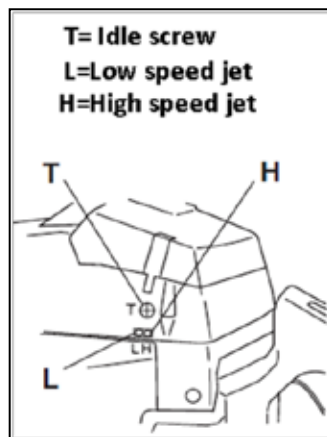
#### Jet and Idle Field Adjustments

1. Clean or replace air filter. You cannot properly tune the carb unless the air filter is clean and in good condition. Is your air filter dirty? Compare it to a new one for reference.
2. Run saw at full throttle. Turn High Speed (HS) screw in (clockwise) slowly. As the HS screw is turned in, saw is being leaned out (more air, less fuel). Keep "leaning" as long as the saw flutters. Go to "flat line" (no flutter) and back off.
3. Release throttle and let saw idle. If saw idles too fast (chain turning), or too slow (dies)—adjust idle screw only. Turn screw counter-clockwise to stop chain, or clockwise if saw dies.
4. Idle for 30 seconds. Do the dump/roll test. Saw should idle in all positions. If saw fails the dump test, tighten (turn clockwise) the Low Speed (LS) screw a quarter turn. Fuel is pooling and flooding out the engine. Repeat.
5. Throttle up saw. Saw should immediately respond. If it stutters, the LS is too lean. Back out (counter-clockwise) the LS screw a quarter turn or less. Repeat until saw revs immediately. Adjust idle as needed, and repeat steps 3 thru 5.

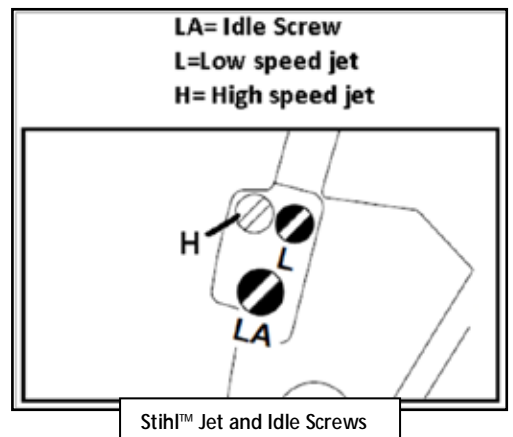
**TUNE YOUR SAW WITH AN APPROVED TACHOMETER ASAP. HIGH RPMs SHOULD BE NO MORE THAN 13,500! IDLE RPM-2,500.**

#### If Your Saw Won't Start, Check these Items

1. Fuel (50:1). (See 2-stroke Fuel Mixing Guide.)
2. On/Off switch is turned ON.
3. Spark plug has spark.
4. Exhaust screen is clean.
5. Air filter is clean.
6. High and Low speed jets are adjusted correctly. (See graphics below.)  
NEVER OVER-TIGHTEN JET SCREWS.  
Turn both jet screws to the right (clockwise) until snug. Do not over-tighten! Then, turn back to the left (counter-clockwise) until you reach the desired factory setting.
7. Carburetor is flooded:  
Tighten high jet screw until it's just snug.  
Pull starter cord until saw starts.  
(See "Jet and Idle Field Adjustments" box on left side of this page.)



Husqvarna™ Jet and Idle Screws

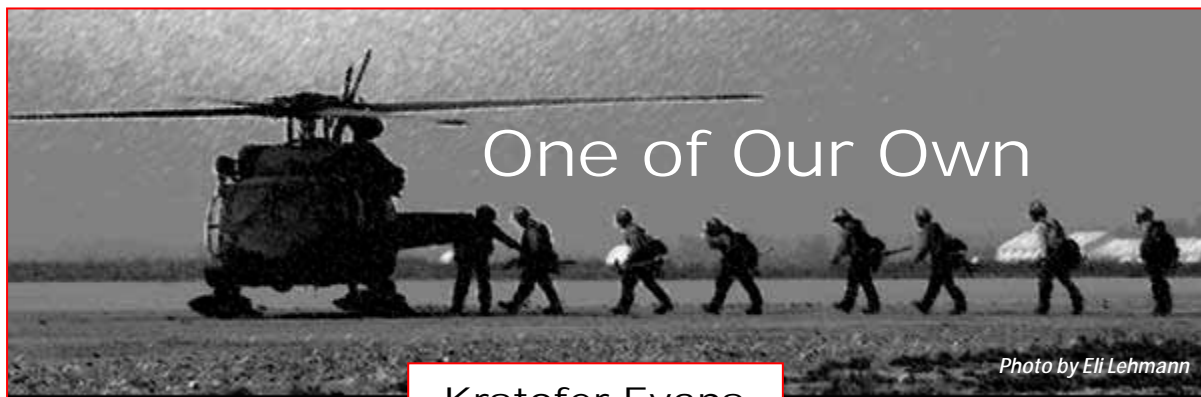


Stihl™ Jet and Idle Screws

Thanks to:  
**Alex Viktora,**  
Fire Use Training  
Academy,  
Field Operations  
Specialist

#### Share Some 'Shop Talk'?

If you have a subject idea for this column—anything that you feel could benefit other wildland firefighters—please contact: Paul Keller, [pkeller@fs.fed.us](mailto:pkeller@fs.fed.us), 503-622-4861.



Krstofer Evans

**P**lumas Interagency Hotshot Crew sawyer Krstofer (pronounced “Christopher”) Evans is constructing handline on an arson-caused wildfire on the Daniel Boone National Forest in Kentucky. It is approximately 1500 hours. With his earplugs in and saw running, he doesn’t hear his crewmates scream when a nearby (67-feet away) 70-foot black locust snag—its 14-inch base burned through by the fire—falls across the line behind him. The snag hits Krs in the head. The injury: breaks 15 of his ribs (all but three) and his left scapula and collarbone, smashes his brachial plexus—the network of nerve fibers running from the spine, through the neck, into the armpit area—collapses his left lung, lacerates his spleen, tears the four major ligaments of his right knee, gives him a concussion, and burst-fractures several of his spine’s vertebrae—resulting in paraplegia. Krs spends the next month in a neurological intensive care unit—where he almost dies. He is transferred to another Kentucky hospital for two months, then endures three more long months in a Colorado hospital. It is just the start of an extremely challenging journey for this 30-year-old firefighter.

In a matter of seconds, this 6-foot 6-inch, 234-pound hotshot and professional World Cup-level snowboard racer is suddenly facing a tremendously difficult future. What would you do? We’ve been in contact with Krs. With his permission, we are sharing excerpts (that we selected) from his online diary—that he started just weeks after his injury. His story is a remarkable, compelling tale of true grit and resiliency. See for yourself.



Point of Contact – Where this snag breaks on Krs’ head.



Krs with his hotshot brothers.



Krs’ severely injured spine.



“I can’t imagine the rest of my life in a wheelchair.”

**Fire Snag Injury Paralyzes Firefighter—Here’s His Story, In His Own Words**

By Krstofer Evans

First Entry: Written Several Weeks after the Accident – From a Rehabilitation Hospital in Lexington, Kentucky

**O**n October 31, 2001, I was working an arson fire in Kentucky when 70-foot worth of black locust snag burned through at the base and fell on me. I have no memory of the ‘accident,’ but after talking to Brett Loomis (lead sawyer) who came to visit me here in rehab, I realized I remember up till about two minutes before the tree got me. It hit me, broke over my head, and, in the words of Steve Tolen: “Your helmet looks like someone took a sledgehammer to it.” The interior harness is screwed up pretty bad . . . Anyway, the old helmet’s here in my room, as a reminder of how crippled in the mind I could have been. I have full mental function because of that helmet.

So, the tree hit me in the head, putting me to my knees. Along the way, it broke my left clavicle and scapula, greatly weakening my left arm. I have a grip strength of three pounds in the left hand. Working on that though. It shattered four vertebrae, and went on to break all but three of my ribs, collapsed my left lung, lacerated my spleen, shattered some of my teeth, and almost broke my legs.



*X-RAY: From top, shows Krs' tracheotomy tube and, below it, the two titanium rods—five pounds worth—holding his spine together.*

The guys tried to cut a helispot right there, but the terrain was not acceptable. Only option was a long-line, and I was too beat up for that, plus I'm too big for the wire stretcher thing. The crew EMTs loaded me onto a backboard and carried me about a quarter mile to a road, where I was driven to a parking lot and hot-loaded into the helicopter. I was taken to the University of Kentucky's medical center where I got about five pounds of titanium in my back and spent a month in intensive care.

#### **'They Didn't Think I was Going to Make It'**

Once I got to the hospital at the University of Kentucky, they stabilized me and put me in intensive care where they had to put me into a coma for the first two weeks because I was fighting the respirator, tearing out IVs, stuff like that. I got pneumonia in one lung. Just about the time they got that cleared up, guess what—it moved into the other lung. Of course, because of that, I had real bad O2 saturation, and I almost died there. Seriously, they didn't think I was gonna make it . . . The operation to repair the vertebrae took six hours, and they were afraid I wouldn't make it (die) again because I had to be on my stomach for it. My lungs were still having trouble at that time. Turns out, that position helped, as a bunch of bad stuff came out my chest drain. Incidentally, my spinal cord was stretched, not broken, so there's hope . . .

The vertebrae which I managed to damage are thoracic 4 and 5, with 4 being what they call a 'burst fracture'. It's as if you were to set that vertebra on an anvil and hit it with a hammer. The spinal cord damage was done at T5, so everything below that vertebra doesn't work or feel.

### ***We Were Pretty Amazed You Were Still Alive***

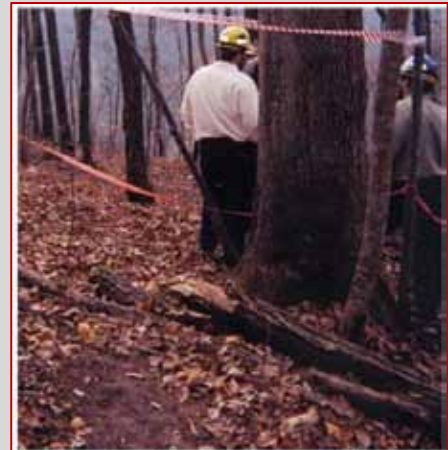
Here is an account of the event written for me by [Plumas Hotshot crew member] Ryan Bauer, in his own words:

"My view was probably no more frustratingly good than anyone else's. From upslope of you, very near Tolen, I saw the tree's first movement along with others and we all called it out. The guys on the lower bench, just above you, heard us start yelling—but, as is always the case with a snag or rock, not everyone heard it.

As far as right after the accident, when I got there, your legs had collapsed first. Then, once you hit the ground, you slumped forward and then over to your right so that you ended up with your body wedged under the small tree at about your waist—with your knees under you. You were taking deep wheezing breaths, really slow, but at least we knew you were fighting to stay alive.

We waited until we got all of the EMTs there to move you and get your airway opened better. We cleared out the area to your left with tools, cut your gear off, and rolled you on your back onto this area. You were pretty beat up—as I'm sure you've heard—but the roll went really well and once we were done we put JP in charge of the scene.

Once you were rolled over, you started to talk. At first, all you were saying was 'Help' and 'Help Me'. But as your consciousness increased, you started talking more and more. While you still had a lot of adrenaline in your system, you were pretty coherent. But as it wore off, you started slipping and getting combative. As far as your injuries, we were just assuming the worst—pretty amazed you were still alive. When Jeremy was doing his secondary survey, you let out one hell of a yelp as he palpated your right leg. We weren't sure if it was your leg or just the pain in your back increasing. Anyway, we were pretty sure your leg wasn't broken as it wasn't unstable at all. As we went on, I asked you to push down on my hands with your feet, and after we got you to concentrate on it you did move your right foot. But I lost your attention after that and wasn't able to get you to try your left leg. After that, the medics arrived and after what seemed like forever, we decided to carry you to the skid road, 4x4 you to the ambulance, run you down to the elementary school, and fly you to UK. The hike to the skid took probably 20 or 30 minutes. If it was rough it's because the FS Paramedic and I were carrying the tail-end of the backboard and couldn't see the ground—much less our own feet. Hope you didn't have to endure any extra pain on my account."



*"The tree that whooped my ass and took my legs. (It's the busted one on the ground.) It's a black locust, one of the hardest trees in the forest. This bad boy was on fire at the base 70 feet inside the burn. Here comes Mr. Hotshot, lookin' for things to cut. The tree burns through. I have earplugs in and a live saw with a square skip-tooth chain in my hands. The tree falls, I don't hear it. It hits me and breaks over my head. I'm lucky the saw didn't cut the bejesus out of me—and I didn't break my neck," Krs Evans assures.*

I instantly lost control of my abdominal muscles, legs, bowel and bladder, and have no sexual function. I have lately regained some of my abs and can move my leg muscles a picometer. I'm keeping the hope that as the swelling in the spinal cord goes down, I will regain full function. . .

I have a trach, a hole in my throat into my windpipe with a tube in it. Often, I have to be suctioned to get all the phlegm out—which I am too weak to hork up by myself. Believe me, getting suctioned is no fun at all. I finally worked myself off the ventilator and out of the ICU.

So, that's it so far. I'm a cripple now. But I'm workin' on it. I intend to walk out of here, as I can't imagine the rest of my life in a wheelchair.

#### Dec. 7, 2001 Still in Rehabilitation Hospital

Today I found a few ditches on my head. I was scratching a little and found—well, feels like a ditch. So I asked Mom what they were. She looked, and they are cuts. I figured out how they got there. The webbing harness in my helmet cut me when the tree hit. Must have been an amazing amount of force to do that. I'm surprised my neck isn't broken and I'm not brain-dead drooling all over myself.

Oh yes, the chest drain site? Well, that got a staph infection, so the scar is pretty big. For those of you keeping track, the vertebrae shattered are thoracic 4 and 5. Apparently, 5 was the worst, almost destroyed. The incision on my back is about a foot long, and the whole back is quite painful at times. Hopefully it will heal fast.

#### 'It's Lots of Fun Choking all these Bad Boys Down in the Morning'

Today I decided to question the pill girl to see just what it is I am choking down morning, noon, and night. I now have a list of all and what they do.

##### Every 12 hours(ish):

Tegretol 200 mg – Anticonvulsant  
Lovenox 0.3 ml – Anticoagulant  
Pepsid 20 mg – Raises blood pressure  
Paxil 20 mg – To treat panic disorder  
Neurontin 900 mg – Anticonvulsant  
Entex Pse 120-600 tab – Decongestant and expectorant  
Combivent inhaler – Bronchodilator and beta receptor stimulant combination

Senna – Stimulant laxative to treat constipation  
Augmentin – Penicillin-based antibiotic to treat bacterial infections  
As needed:  
Roxicodone 3@5 mg – Pain.

Quite a list, huh? It's lots of fun choking all these bad boys down in the morning. I usually save some of my breakfast to wash them down. At bedtime, I get a shot of lovenox to keep those pesky blood clots away. It goes in the fat (ya right) of my beltline so I don't feel it. My inhaler has this weird 'mixing chamber' or something on it, and it whistles if I inhale properly. I keep an eye on the clock because every four hours I'm allowed to have some more Roxicodone. Believe me, if I forget, my back reminds me.

#### Jan. 18, 2002 'I Truly Hope Whoever Lit that Fire Knows What He/She Did to Me'

My injury could have happened anywhere, on any fire. Trees burn through and fall all the time. Many times I have seen something so precarious, I haven't the faintest how it was still standing. In Mike Sherman's words, one of those "probably shouldn't be here lookin' at it" type trees.

When I got here [Kentucky] and we went on the first fire, I said to myself: "It's just leaves." Nothing like the rippers we have at home. Sure, fire is fire, and it can still get us, but it was easy to step over the flame front most of the time . . . I can see why someone would light a fire. It's fun to watch. But what happens when it gets away, destroys the woods, and—at worst—kills people. I truly hope whoever lit that fire knows what he/she did to me. I just want them to think about me sometimes and wonder what my life is like now.



*Before the accident.*



*The black locust snag that broke on Krs' head.*

Krstofer Evans' complete online journal of his entire spinal injury story is available on his website:

<http://www.krstofer.org/top.htm>

### Jan. 31, 2002 Living with Constant Pain

Pain is glorious. It's absolutely wonderful. It tells you you're still alive. Embrace the pain. Ya, whatever. That's BS and we both know it. The medication I'm on, oxycontin, manages to reduce the constant pain to almost nothing. That's great for when I'm just sitting around. But upon movement—especially in the morning—we get into whole new realms of “Gee, I shouldn't have done that” type pain. Not quite “shinned the ball hitch” type, but pretty close. Why do I tell you about this? Because almost every time the nurse brings me the bucket 'o pills, she wants to know: “How's the pain?” Had I not been through life as a TACP [Tactical Air Control Party] in the military [U.S. Air Force], then slowed down a little and became a Hotshot, I'd be having a lot more trouble with the pain. For me, anything short of blowing a knee is simply “press on and it will go away” type pain. So what? So, my back hurts and it spikes when I move. So my level of discomfort is a hell of a lot higher than yours right now. I've gotten used to it. It's “normal” for me now. I only notice it when I pay attention. I can deal with it, and I don't want to hear the “poor you” either.



Plumas Hotshot sawyer Krstofer Evans drops a burning snag.

### Feb. 6, 2002 'I'll Never See Those Places Again'

I keep hearing “Never say never” and “You can do whatever you want” and that sort of thing. That may be true, from your perspective. I bet your legs work, and you've never had to pilot a wheelchair. Believe me, even the smallest hills kick my ass. Of course, I do realize I've only been walking with my hands for three months now. I will get a lot stronger and be able to push myself a lot better. Maybe I'll even get my left bicep back. Before my injury, I worked as a Hotshot in the summers. Winters, I went to college, raced the [USASA](#) [United States of America Snowboard Association] North and South Tahoe series, and taught snowboarding at Feather River College. I went hiking every chance I got, usually along the Middle Fork of the Feather River, gold panning and sluicing along the way . . .

Now, trust me, there's no way in hell I would make it anywhere near there in a chair. So when I say “I'll never see those places again”—I won't. Unless my spinal cord heals enough that I find myself walking. The cord healing is not my choice, it's just up to nature. If wishes could heal it, I'd be able to fly by now with all the good vibes being sent my way.

### Feb. 28, 2002 A Reporter Asks Krs: 'What is it Like Now? What Do You Hope for?'

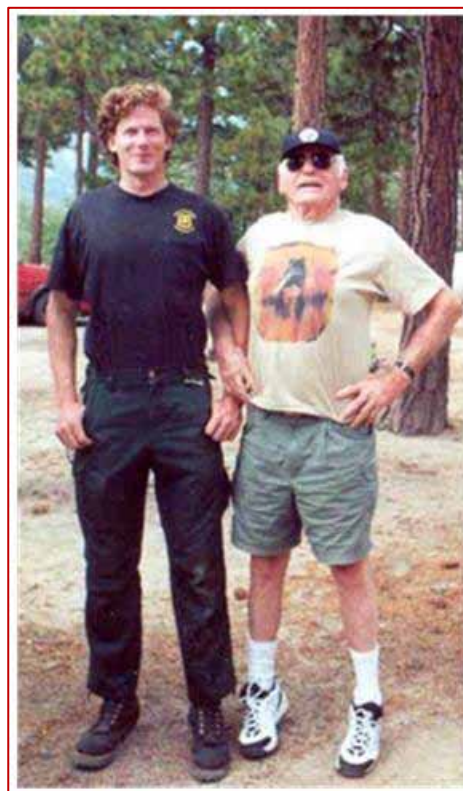
Now? I can't even pick up my friggin' chainsaw. I have no muscles below my rib cage, so if I try to hold the saw, I'll fall over. Daily hassles? Getting dressed while laying down. Getting into my chair without getting onto the floor. Pushing the stupid chair up what *were* tiny hills. Keeping my stupid shoes on. Taking a shower in a chair. Looking like a beer pig, without having a beer in five months. The one thing I really hope for, though, is to be able to stand up for long enough to pull up my friggin' pants. That's it, just the pants. We'll work on walking later. I just want to be able to stand up off the toilet and pull up my pants.

### Reporter Asks: 'What Do Your Doctors Say About Your Long-Term Prognosis? Is There Any Way of Telling if the Cord is Healing?'

The Docs don't want to create false hope. Nor do they want to create moroseness. “Everyone's different” they say. It can take up to two years for the spinal swelling to go down. I do have movement in the muscles of my legs, but not enough to do anything. If the cord is healing, I should get return of feeling and movement—which I am, very slowly. No way to tell how far it will go though.

### March 17, 2002 'See Things I May Never Touch Again'

I'm “home” [his parent's house in California]. Nearly five months of hospitals and rehabilitation and where am I? A cripple in a wheelchair. Unable to move or feel anything below my pecs. Stuck playing the close-quarters navigation game and unable to leave the house under my own power. OK, me going out on the deck doesn't count. From there I can see even more places I can't go. See things I may never touch again. Things I left up on the hill to dry in the sun, mark a spot, or just because that was a good place to drop it. The resting place of my Dane. The deer trap. My Manzanita bird perch thingies. The crossbow target. All out of reach.



Krs and his father—in the middle of summer 2000.

### **I Would Have to Be 100 Percent Recovered to Pack My Saw and Keep Up with the Guys**

I received a letter from a guy in the OWCP [Office of Worker's Compensation Programs] office. A form letter, probably sent out to all who have been injured. It stated that I would be paid a certain amount every 28 days until I could return to work. If my injury prevented me from returning, then I could be trained for another job. I wonder if he even knows who I am, what happened to me, and how much I would like to return to work. Why? Because I would have to be 100 percent recovered to pack my saw and keep up with the guys. I can't even lift 10 pounds now. My rib cage moves 1/4th of an inch from full expiration to full inhalation. (Read that as: "It's frozen solid folks.") I can't even say I'm half a man because 2/3rds of my body is motionless—beyond my control. I just get to drag it all around with me and when the spasms happen, hope they don't throw me out of the chair. So, to "that guy," thanks for the letter. I'll let you know when I'm over my stubbed toe and will be going back to work.

### **I Don't Believe I Will Ever Walk Again**

I'm sure you're wondering: Have I had any return of function. The answer is: No. Frankly, I don't believe I will ever walk again. Sure, I want to. But the odds are against me. The last step I ever took was to my doom under a tree on an arson fire. Do I wish I had died right there on the side of the hill? Yup. There are very few times any more that I am happy to be alive. I just try to stay occupied and try not to think about it too much. Am I going to "end it all"? No. The .45 is right over there in the drawer. Full of hollow-points. There's no safety on it. (It's a Sig, they figure you know how to use it.) Frankly, I'm mostly scared of missing—(how the hell that would be possible I don't know, but look where I am right now)—and not dying, making myself worse.

### **March 19, 2002 So Much Pain**

Had to spend the whole night on my back—unless I managed to sit up and did some drastic maneuvers with my legs so body mechanics made me roll. It sucked. I woke up this morning in so much pain I could do nothing but lay there and cry for about half an hour. What a bunch of crap. The 1/3rd of my body I'm supposed to feel hurts really bad most of the time. The other 2/3rds just hurts, or falls asleep, or tingles, or spasses. Are they good signs? I don't know or care. I don't need good signs like those.

### **April 15, 2002 Bad News, Kids**

Went to see Dr. Morgan today (neurosurgeon) . . . I asked him about spinal swelling. I have thought my cord is swollen and when the swelling goes down, I have a chance. Bad news, kids. It's not swollen. In fact, he pointed out (on one of the CT scans) where it's thinner in the break zone than everywhere else. So I'm pretty sure I'm gonna be like this for the rest of my life—which I, frankly, hope is short. I don't want to live like this very long . . . Today pretty much nailed the lid on me never walking again unless I get some kind of magical medical treatment. I have found I become a lot more emotional after Oct. 31, 2001. In fact, tears are hitting the keyboard right now.

### **May 7, 2002 An Old Lady Holds the Door for Me**

I have decided I don't really like using handicapped spots. Sure, I'm a gimp, but I'm not "handicapped" to the point I need to park right in front. I figure, save those spots for some poor bastard in a sip-n-puffer, you know, someone REALLY crippled up. Struck me as kinda funny, ironically, when an old (and I mean *old*) lady held the door for *me* today. The same kind of old lady who I would have hopped to hold the door for seven months ago. I am not one to refuse help when it's given (and I need it) by the bystander types. I hear some gimps yell at the AB's [Able Bodies] for that. Uncalled for.

## **2004 – Two Years Later**

### **May 22, 2004 'Snag Awareness' Poster Boy**

I'm going up the hill tomorrow to see the [Plumas Hotshot] crew and give the "Lookout for Snags and Stuff" spiel I've been runnin' around with this year. Did it for Ron Marley's fire class at Shasta College twice already, then to the Redding IHC and Tahoe Hotshots this year. I haven't seen most of the guys on Plumas since the morning of Oct. 31, 2001. So tomorrow might be a little weird. After I went over to see Tahoe, their Sup, Rick Cowell, sent this out to (damn near all) of the crews:

**"On May 7th We had Krs Evans from the Plumas Hotshots give a presentation on snag awareness. It was good. You could hear a pin drop. I wrote him a \$100 Govt. check, charged it off to training. Krs is willing to come to your station. His presentation takes about 1.5 hrs. It's a strong message. It will make you and your cutters more aware. Krs has a van that he drives around, he doesn't ask for anything except gas money." Rick Cowell, Tahoe Hotshot Superintendent**

It's been all good so far. I never intended to be the "snag awareness" poster-boy, even after the injury. I guess it started with Ron Marley (Fire Chief/instructor, Shasta College) asking me to come up and talk to his students two years ago or so. He wanted to raise their awareness of [what] can happen out there on the line.

## EPILOGUE

### Krstofer Evans 2011 Updates

#### 'Don't Be That Guy' Speaking Tour

To contact Krs Evans for speaking presentations, he can be reached at:

<http://www.krstofer.org/speaking.htm>

The past several years, Krstofer Evans has presented his "Don't Be That Guy" snag and hazard tree awareness and prevention program presentation to a myriad of hotshot crews and wildland firefighters across California, Oregon, Washington, Idaho, Arizona, and New Mexico. "I'm willing to talk to anyone," Krs explains on his website. "I don't care who you are. If you spend time in the woods you know things fall out there. You can be the most alert person there and still get whacked."

So far this year, to spread the word on his unique hazard tree awareness safety presentation, Krs has flown to Salt Lake City and driven to Sacramento, Calif., and John Day, Ore.

Besides going to school full time—Oregon State University—Krs also continues to support the wildland firefighting effort by crafting and producing adapters, rollers, clamps, and nozzles. His products include the **Evans Hose Clamp Tool** ("Manufactured of aircraft grade aluminum and steel, this Leatherman-sized 'Toy Hose' clamp folds up and fits in your pocket. In use, it locks just like the big clamps so you don't have to climb to the wye. The bright colors make it easier to find when dropped in the bushes."); and the **Evans Charger/Adapter Power Source** ("Designed and developed by a Hotshot, this clever invention enables you to recharge cell phones using a King radio 'clamshell' battery pack. Never again suffer the frustration or danger of a dead cell phone on the fireline. Charge your phone, run your civilian radio or GPS. Anything that plugs into a dashboard 'charging port' can now be powered in the field.").

#### Still Enduring His Ongoing Battle with Physical Pain

At OSU, Krs is studying fermentation science with a chemistry and business double minor. He just bought a house. And, yes, when asked, he informs that, unfortunately, he's still enduring his ongoing battle with physical pain.

"The half of me that can't feel is consistently sitting in a vat of boiling oil and there's a cramp," Krs informed this July. "Take your left arm and put it behind your back as if you're trying to scratch an itch just under your right shoulder blade (or the cops have it in a 'pay attention' hold). Now reach up as far as you can and it should be right under your thumb. This thing is always there. Some days it gets bad enough to disarticulate that rib joint. I get massage twice a week and the girls tell me it's like working on a creek bed. Helps for a day or two, then the thing is back. It's just because the ribs healed weird and now it's part of life. So I've learned to ignore pain, most days."

Were his various hassles with the OWCP [Office of Worker's Compensation Programs] office ever resolved?

"Yes. Their Seattle office rocks. Pretty much anything I've needed, I call them and they're on the ball—even calling the pharmacy within five minutes and giving verbal authorization for pills."

#### Krs Updates Include Cutting Gemstones Professionally

Other Krstofer Evans updates include how he learned to cut gemstones a couple years ago.

"Whenever I get the chance, I travel out to southeast Oregon to get sunstone. I'm trying to break into selling to the local jewelers."

"Umm, what else? I'm single; a Taurus; like long walks on the beach, sunsets; favorite color is blue."



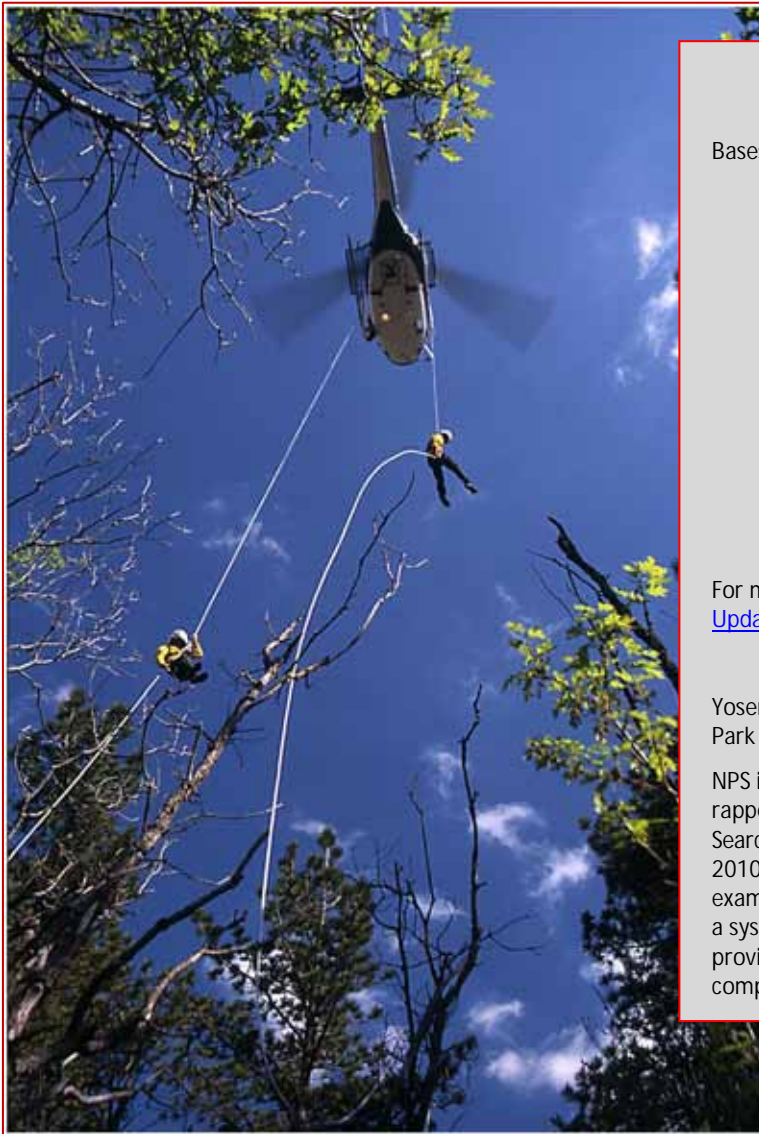
From Krs' "Snag and Hazard Tree Awareness and Prevention" pamphlet.



Today Krs attends Oregon State University, builds and sells wildland fire tools, and—among other interests and activities—has become a professional gemstone cutter.

#### 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, [pkeller@fs.fed.us](mailto:pkeller@fs.fed.us), 503-622-4861.



## What's the Latest Word on Rappellers?

### U.S. Forest Service

Bases now approved for national rappel operations:

**Northern Region** – Gallatin.

**Intermountain Region** – Boise; Payette 1 & 2; and Salmon 1 & 2.

**Pacific Southwest Region** – Scott Valley (Klamath NF) and Trimmer (Sierra NF).

**Pacific Northwest Region** – Frazier (Umatilla NF); John Day (Malheur NF); Prineville (Ochoco NF); Siskiyou; Sled Springs (Wallowa-Whitman NF); and Wenatchee.

These helicopter rappel crews are fully functional for initial attack, extended attack, and large fire support.

To help standardize the helicopter rappel program, only Type II Medium helicopters are approved for rappel operations for the foreseeable future.

For more detailed information: [Rappel May Update](#) [Rappel July Update](#) [Interagency Helicopter Rappel Guide](#) .

### National Park Service

Yosemite National Park is rappelling this season. The National Park Service (NPS) is the only DOI agency that is rappelling.

NPS is in the final phase of testing new helicopter all-hazard rappel equipment that will allow all-hazard deployment of Fire, Search and Rescue, and Law Enforcement personnel. During the 2010 rappel stand down, the National Park Service elected to examine all available and approved rappel equipment to provide a system that can be used for all-hazard missions. NPS will provide an update once the final rappel testing phase is completed and the NPS rappel program is approved.

*Helitack rappellers on a training exercise in Monument, Colo., in 2005. Photo by Kari Greer, National Interagency Fire Center.*

## After Official Stand Down, Forest Service National Rappel Program is Resuming

As pointed out in the box above, the U.S. Forest Service National Rappel Program is resuming after a comprehensive official “stand down” for a nationwide rappel program evaluation mandated by the Chief of the Forest Service in February 2010.

Seven months prior, In July 2009, the Lassen National Forest’s Helitack Crew member Thomas “T.J.” Marovich, Jr., died from a fall during a rappel proficiency training exercise in Willow Creek, Calif. This tragic fatality helped spotlight the need to—among other actions—establish standardization within the national rappel program’s training protocols, operational procedures, and helicopter platforms.

An Accident Review Board (ARB) was convened to review the safety investigation of the Willow Helibase Rappel Accident Fatality Report. To prevent similar mishaps in the future, the ARB developed a Safety Action Plan.

In October 2010, the National Rappel Program Reactivation Process Report was released that directed a “partial” stand up of the Forest Service National Rappel Program. At that time, the Pacific Northwest Region was the only region to request—and receive—a reactivation of its rappel program. As the information in the box (above) indicates, other regions have since reactivated their rappel programs.



*Thomas “T.J.” Marovich, Jr., died from a fall during a rappel proficiency training in July 2009.*

# Your *FEEDBACK*



[After our inaugural spring issue, in which we took a stab at explaining the wildland firefighters' use of the phrase "Two More Chains", we received the following feedback that provides some of the history behind this popular wildland firefighting expression:]

### **Ben Charley: Possible Originator of 'Two More Chains'**

The phrase "Two More Chains" was often spoken by Ben Charley, Superintendent of the Horseshoe Meadow Hotshots back in the '70s. To the best of my knowledge, Ben was the originator, but there may be others who know a different origin. At least, that's how I remember it. Ben always said that—and you knew it was a long way to go, but that's how he boosted spirits on a long shift.

**Tim Swedberg**, Communication Director  
Joint Fire Science Program

From today's Horseshoe Meadow Interagency  
Hotshot Crew website:

**"Ben Charley retired in 1989, but his famous line of 'Only Two More Chains! We're Almost Tied In', is still spoken as a motivational tool on Horseshoe to this day."**

"Two More Chains" and "Steak and Eggs Boys" (at daybreak on night shifts) were Ben Charley's classic things to say. Ben was the superintendent for the Horseshoe Meadow Hotshots from 1974 till 1989, when I took over the crew.

Ben would tell us this all the time and we would laugh and keep cutting line. It would always get us jacked-up and we would cut more line with smiles on our faces. Good motivation, good leader, the best.

After 15 years as superintendent for the crew, Ben retired at 62-years-old—which, I think, is a record. Ben got to stay that long because he retired from the Marine Corps and then started to work for the Forest Service, and was able to work until he got his 20 years in. Ben was one tough man. Up until he retired, he PT'd with the crew and led the crew on the line, on every shift.

### **Robert J. "Horseshoe Bob" Bennett**

Superintendent Horseshoe Meadow Interagency Hotshot Crew  
1989-2006

*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, [pkeller@fs.fed.us](mailto:pkeller@fs.fed.us), 503-622-4861.

[Some useful follow-up info sent to us after our "Shop Talk" section in our last issue that focused on improving radio coverage with your handheld:]

### **More Handheld Radio Information**

When narrow banding was coming on, I searched for information on radios and how they work better or not. This doc has a very good couple of pages on radio position and abilities:

[http://wildfirelessons.net/documents/ARNF\\_radio\\_users\\_guide.pdf](http://wildfirelessons.net/documents/ARNF_radio_users_guide.pdf)

Starting on page 7 ("Basic VHF Radio Theory") through page 14, you'll find some very interesting info on how position works for or against you.

**Casey Jones**, Fire Prevention Technician  
Region Four, U.S. Forest Service

[A sincere thank you to all of you who have taken the time to contact us to express how much you appreciate *Two More Chains*. We have heard—much appreciated!—kudos from readers from across the country, as well as from firefighters in Australia and New Zealand. Speaking of the name "Two More Chains"—here's a fun twist from one of our readers up north:]

### **How 'Bout a Canadian Take on 'Two More Chains'?**

I suppose the Canadian version of "Two More Chains" would be "37.8 More Meters, Eh!" (Just doesn't have the same ring to it.)

**Sandy McKinnon**, Wildfire Training Coordinator,  
New Brunswick Department of Natural Resources

### **We've Sent Out More Than 33 Thousand IRPG Stickers**

In our Spring Issue of *Two More Chains*, to help firefighters report medical incidents from the field—as part of the Dutch Creek Protocol—we provided a pink colored box to be inserted on page 49 of your 2010 Incident Response Pocket Guide (IRPG).

At press time for this Summer Issue, we had received requests for 33,000 additional (actual) stickers. Our mailroom has been busy. Sticker orders have ranged from Bureau of Indian Affairs offices, entire national forests, national parks, BLM offices, U.S. Fish and Wildlife refuges, as well as several state agencies and volunteer fire departments. The LLC has filled orders from five-person engine crews to Incident Management Teams on fires with more than 1,000 firefighters. Hotshot crews, smokejumper bases, training centers, and hundreds of individual firefighters have requested—and received—the sticker.

For those of you who would still like to order these IRPG stickers, please forward your request to:

[lessonslearnedcenter@gmail.com](mailto:lessonslearnedcenter@gmail.com)

*"Your FEEDBACK" photo (above): Briefing on the 2002 Pines Fire in California.  
Photo by Kern Valley Hotshots.*