

Incident Narrative

The sawyer approached the 95-foot, 33-inch DBH (diameter at breast height) ponderosa pine snag, his first tree of the day. As a FAL2/B sawyer with over ten years cutting experience, the tree was within his comfort level, and not unlike other trees he and his engine crew had been snagging during the previous three days on this prescribed burn unit in Eastern Oregon. His Engine Captain had already contacted Dispatch via Starlink with their specific plans, including what Project Medical Plan should be referenced if necessary. It was approximately 1000 hours.

The sawyer sized-up the snag with “a system that works for [him],” then fired up a Stihl 500i chainsaw with a 28-inch bar running a sharp, semi-skip chain. He placed his gunning cut almost four feet off the ground from where he would stand while placing his final backcut. After he completed the conventional undercut, he decided to add a second, sloping cut from the bottom, making an open-faced undercut.

Standing in front of the undercut, the sawyer plunged his bar through the center of the undercut. He pounded a 10-inch white/red plastic wedge into the kerf where this plunge cut emerged on the backside of the tree. Standing on what he had determined to be the “bad” side of the tree, the sawyer made his first quarter-cut backcut, with a stump shot 8-inches high above the hinge. He pounded a 10-inch “hammerhead” wedge (a wedge with a mechanical steel insert on its end) into the kerf.

Having moved to the “good” side of the tree, the sawyer aligned his final quarter-cut with this hammerhead wedge—resulting in the two quarter-cut backcuts being vertically offset by approximately 9 inches. (This second backcut was lower than the hingewood by about 1 inch, creating a negative stumpshot.) The sawyer placed another hard-head wedge in this second backcut and began to pound on all three wedges. “I was pounding and pounding and pounding,” he recalled. The tree failed to fall.

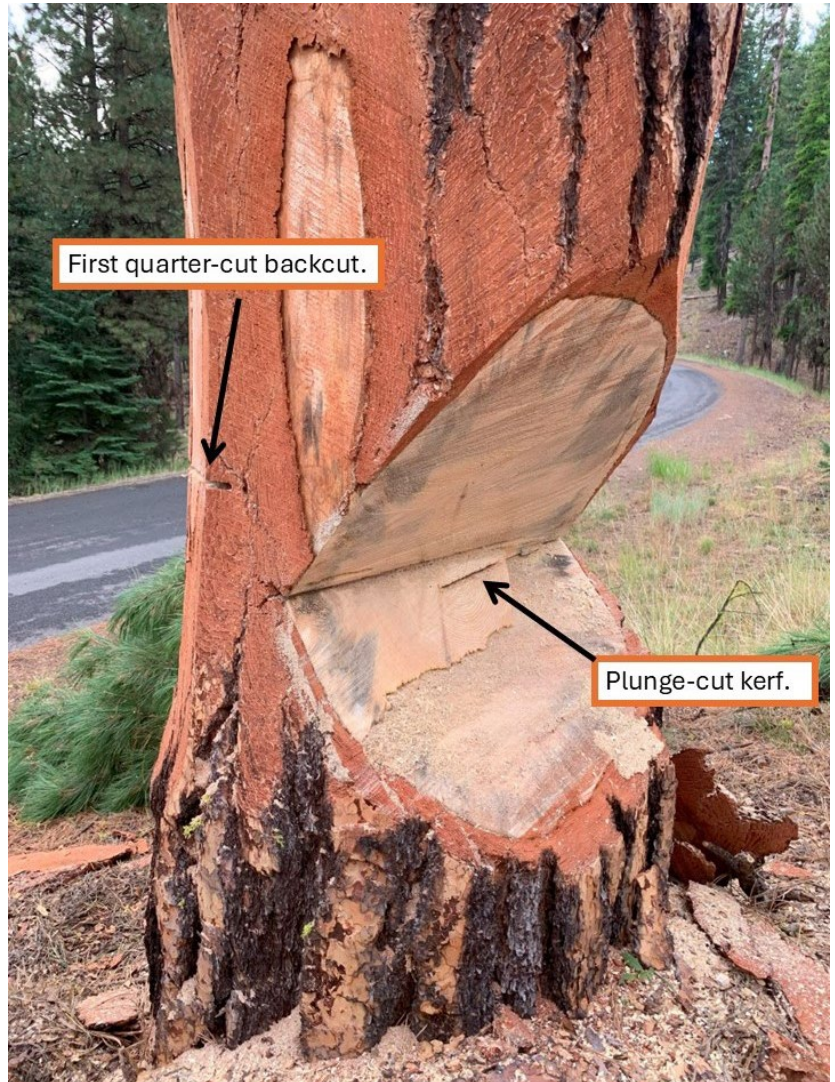


Figure 1. The open-faced undercut.

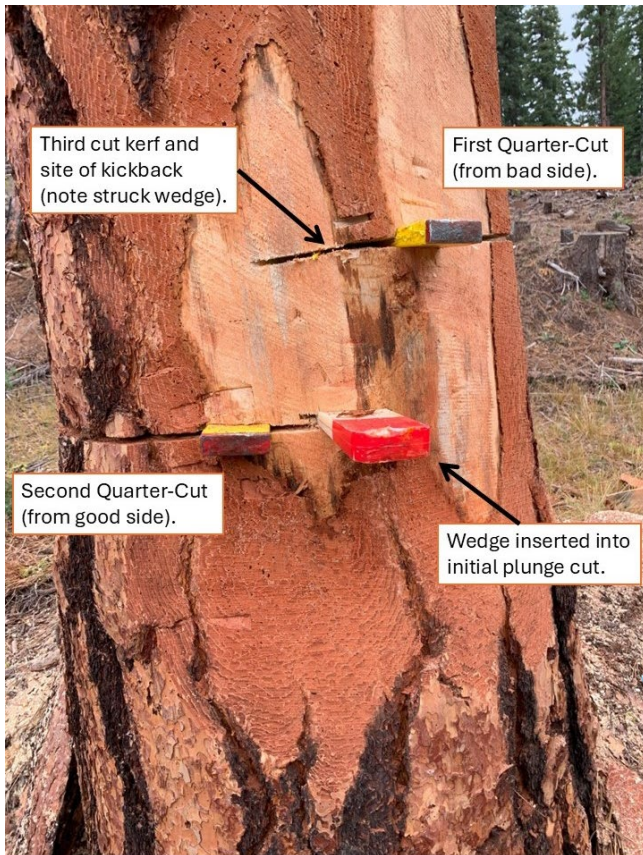


Figure 2. Photo showing the components of the backcut and wedge placement.

and began initiating the 8-Line Medical Incident Report protocol with Dispatch. Dispatch alerted the County 911, which immediately deployed an ambulance to the proposed evacuation intersection.

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 Quick Clot pressure dressing and sling to his wound.

Within approximately 10 minutes of the chainsaw strike, the crew was ready to transport the injured sawyer. The Engine Captain—

now the Medical Incident IC—alerted Dispatch to have the responding ambulance meet them for patient transfer at the junction of a state route and a Forest Service road. While this was the quickest evacuation route along a much better road, it was not the route detailed in the Project Medical Plan. Therefore, this was not the route the responding ambulance—by that time already out of cell service and unable to receive comms—was following. Finding no waiting ambulance at the rendezvous site, the Medical IC proceeded along their evacuation route. Upon reaching the nearest town, Dispatch informed them to proceed directly to the nearest hospital. The crew and patient arrived at the hospital approximately one hour after the first report of the injury, where the hospital staff treated the wound and released the patient the same day.



Figure 4. The sawyer's stitched-up upper right shoulder.

Hearing the pounding from a safe distance down the road, his Engine Captain grabbed a bag of wedges and approached the tree. Assessing the situation, he suggested “flushing” the first quartercut across the remaining length of the bole. However, because of the slope and the height of his first quarter-cut, this kerf was now at the height of the sawyer’s shoulder. Because he was on the left side of the tree (if facing the intended lay), the sawyer decided to switch to his “offhand”: his left hand on the throttle, his right hand cupped on the bend of the full-wrap handle. This altered body positioning meant that, were his saw to kick back, his hand would not activate the chain brake.

With the powerhead at shoulder height, the sawyer placed the bottom tip of the bar near the existing kerf and fully throttled the saw. He was inches away from the embedded, metal-tipped wedge when he inadvertently hit it with the top tip of his bar. This kicked the bar and spinning chain back into his upper right shoulder, opening a 5-inch long, 1.5-inch wide, and 1-inch deep laceration—narrowly missing a direct impact with his neck. The force of the blow “rocked [him] sideways.” He dropped the saw and grabbed his arm.

The Engine Captain immediately yelled to the engine for the trauma bag. The bag was so tightly placed in the box that the Engine Captain had to run back to help free it. He then radioed a nearby engine crew to respond to the accident scene, cleared all radio traffic with the announcement of a Yellow/Red Incident,



Figure 3. The sawyer's wound at the hospital as it was being prepped to be stitched closed.

Commendations

Though RLSs are usually in the context of learning from *negative* unintended outcomes, the RLS Team believes that readers could learn from the many exemplary, proactive, and adaptive individual and collective actions and strengths referenced in this RLS.

- 1) The Engine Captain and associated crew members on scene did an excellent job of managing the medical emergency. This included assumed roles, the Medical Incident Report communications, and the command decisions to proceed the quickest way to the hospital and not wait for the missing ambulance.
- 2) The injured sawyer was instrumental in guiding those with less medical training in treating his own wound. The hospital staff praised the field dressing of the wound.
- 3) The Interagency Dispatch Center staff played an integral role in this incident's positive outcome and has already collaborated with local EMS and 911 personnel to enhance future medical incident communication via WildCad notification texts.
- 4) The Forest should be commended for their efforts to create and sustain a culture where risk management is of the utmost importance. They've fostered a culture where field-going resources are required to submit Project Medical Plans to Dispatch, and where District fire staff places an emphasis on Medical Incident Reports training.

Lessons Learned

Individual Sawyer Skills

- ❖ It is equally important for individual sawyers to honor their craft and safety by carefully studying every tree, creating solid cut plans, and making the most perfect cuts they can.
- ❖ No matter the conditions of tree, terrain, or environment, the cutting fundamentals should remain the same: Take the proper time to evaluate leans and wood fiber.
- ❖ Clear out escape paths.
- ❖ Anticipate how topographical differentials will influence your cuts.
- ❖ Keep it simple; minimize complexities.
- ❖ Clean-up undercuts corner to corner.
- ❖ Practice tip awareness and control.
- ❖ Don't use saws left-handed.
- ❖ Be extremely wary of using saws near shoulder height; do not use them above shoulder height.
- ❖ Engage your chain brake frequently.
- ❖ Be willing to offer or consider constructive criticism, particularly when you see something risky or sloppy.
- ❖ Annually review Critical Incident Response Plans (CIRP), Accident Notification Guides, Risk Assessment Worksheets, and Project Specific Medical Plans.

Observations

Formal and Ongoing Mid-Level Saw Training

While the need for training of novice sawyers is generally well-recognized and supported by agency leadership (and supported by curriculum such as S-112 and Developing Thinking Sawyers), continued formal training for mid-level and advanced sawyers may be lacking in consistency and availability. Field crews are left to develop and hone their craft on an ad-hoc basis during active fires or project work. Certainly, active saw use is valuable to proficiency. However, in the absence of constructive mentorship, bad habits or technical blind spots may develop and even proliferate.

While the development of S-312 is an important step in terms of curriculum, the intentional, active, and annual field-based training for mid-level and advanced sawyers should be of paramount importance.

Cumulative Fatigue

More training and better cutting are particularly important at a time when agency crews, particularly on the District level, are stretched thin. There are fewer and fewer non-fire sawyer crews. Wildland-fire modules, in addition to the fatigue incurred by the intensity and longevity of recent fire seasons, are increasingly called on to cover other programmatic work: burn preparation, range fencing, facility hazard tree abatement, etc. A shortage of sawyers places high demand on existing sawyers, potentially leading to fatigue, burnout, and resultant injury.

The Need for EMTs and/or Wilderness First Responders

It is an unfortunate situation when the patient is the one with the highest level of medical certification. It is also notable that this level was that of an expired Wilderness First Responder. The Forest Service has developed an Emergency Medical Services (EMS) program to ensure employees receive prompt and trained emergency medical care when necessary. However, it is contingent upon Forest and District leadership to identify, support, and sustain individuals who may be interested in EMS credentialing. Critical to this support is the tracking and planning for necessary recertifications. Ideally, crews would have more than one certified first-aid trained resource, including EMS level personnel.

Improve Communications, Collaborations, and Plan Reviews

The missed rendezvous with the ambulance could have been a significantly more dire mishap. As commended above, the Interagency Dispatch Center Manager has collaborated with local EMS and 911 personnel on a plan to enhance future medical incident communication via WildCad notification texts. Further opportunities to invite police, fire, ambulance districts, and first responders to participate in exercises of emergency response plans should be investigated. To be possible, this must have senior leader support and backing.

This RLS was submitted by:

Justin Adams

Forest Safety Manager

Adrian Villegas

Assistant Fire Management Officer

Nathaniel Brodie

Trails Manager

Do you have a Rapid Lesson to share?

Click this button:

[Share Your Lessons](https://lessons.wildfire.gov/submit-a-lesson)

<https://lessons.wildfire.gov/submit-a-lesson>