Rapid Lesson Sharing

Event Type: Chainsaw incident – Laceration to abdomen resulting from kickback.

Date: November 20th, 2018

Location: Coconino NF, Long Park #1 Rx Fire Block

What Happened?

A Forest Service sawyer sustained an injury during a felling operation that resulted in a self-evacuation and trip to the hospital. During the back cut, the kickback zone came into contact with a placed wedge, resulting in a violent kickback that ultimately struck the sawyer in the abdomen, breaking skin. Fortunately the injury was superficial and did not require stitches. However, the potential for a much worse outcome was there. The following document attempts to provide a narrative around the incident and identify some lessons learned that agency sawyers and saw program managers can benefit from in the future.

Sawyer's shirt after the saw strike.

Stihl 460 chainsaw used and tree where incident occurred.

Incident narrative:

On November 20th, 2018 a Forest Service Fuels crew was prepping a 3,200 acre block identified in a burn plan to receive prescribed fire. Past experience told the crew that standing dead snags (near the perimeter) were the primary concern for being able to manage and keep fire in these blocks. As such, the Fuels crew focused the majority of their time and energy identifying and mitigating standing dead timber that has the potential to spot over a line or present a risk to firefighters holding/ patrolling a line. The day of the incident there were five employees working on the Long Park #1 Rx Fire block. For efficiency sake, the crew of five split into two teams and were working on opposite ends of the block from each other.

The crew of three departed in a UTV and headed to the north end of the block. The crew of two worked near their parked FS vehicle identifying and falling snags that presented a hazard. The crew of two was comprised of a C faller (advanced) and an A faller (novice). The C faller had 10+ years of professional cutting in government and non-government jobs. The A sawyer had 2 years working on a conservation corps saw team and "a lot of trigger time on a saw this summer with the Forest Service Fuels crew." In an effort to avoid fatigue and treat each tree as a learning opportunity for the less experienced sawyer, the two were cutting 'tree for tree'. The C sawyer was directly overseeing the felling operations,

working one on one and providing feedback on each tree for the novice sawyer. They discussed body positioning in relation to the powerhead and hand positioning on the previous tree. Each sawyer had cut about five trees when the incident occurred.

The A sawyer sized up a ~12" dbh ponderosa pine hazard tree, identified the lean and chose a desired direction of fall. The sawyer established an undercut in direction of desired lay and proceeded with the back cut. During the back cut the sawyer placed a small lifting wedge, as is standard. Upon setting the wedge to its full depth, the tree did not fall. The sawyer recognized the hinge was too thick and positioned the saw (leading with the tip) to remove some hinge thickness. The sawyer was "feathering" the throttle while reducing the hinge thickness resulting in the saw having a lower RPM and chain speed reduction. During this action the chain came into contact with the placed wedge, initiating the kickback. The chainsaw bar came out of the open kerf striking the sawyer in the abdomen.

Kickback *is a term used to describe the sudden upward motion of a chainsaw's guide bar. Kickback is one of the most common causes of chainsaw accidents and injuries.*

The sawyer was using a Stihl 460 chainsaw equipped with full wrap handle bar and maintaining proper thumb wrap on the RIGHT SIDE of the full wrap handle bar. The chain break was NOT activated when the kickback occurred because the sawyer's left hand was on the right side of the full wrap handle. See photos below.

Hand position that WOULD activate chain brake during reactive force or kickback.

Hand position that would NOT activate the chain brake during reactive force or kickback, as was the case in this incident

Response narrative:

Though neither of the two sawyers had current medical qualifications (expired EMT and expired WFR) beyond First Aid/ CPR they stayed calm and acted with purpose. The wound was assessed immediately

Sawyers view of buried wedge and hinge wood.

and it was determined they could egress the ~1/4 mile back to the vehicle via UTV where they had a basic life support (BLS) medical kit. The wound was dressed with gauze and pressure applied to slow any bleeding once at the truck. Simultaneously the uninjured sawyer initiated a Medical Incident Report (MIR) with the Flagstaff Dispatch Center (FDC) via a cell phone call. It was determined an ambulance was not needed and that the crew of two would self-evacuate to Flagstaff Medical Center (Level 1 Trauma Center) ~33 miles away. The team of two established radio communication with the team of three on the far side of the block and informed them of the injury and transport plan. FDC notified both the Forest and District Duty Officers of the situation and plan for evacuation. A Hospital Liaison (HL) was summoned to meet the injured party at the hospital ASAP but given the relatively small cadre of HL's nobody was immediately available. Eventually a trained HL was able to tie in with the injured employee post treatment and prior to employee being discharged.

What went well?

The crew of two responded efficently and appropriately post-incident assessing the injury, initiating a MIR and wasting no time with an evacuation. Flagstaff Dispatch Centers response was appropriate and timely to ensure the injured employee was transported to the highest level of medical care in a safe and efficent manner. FDC's notification of staff and implementaion of the HL program was prompt and appropriate. Though much was done well, there are lessons to be learned from an incident such as this.

Lessons:

The right tool for the job: Why do we as an agency have the propensity to use long bars and big saws? Often the answer is standardization. But is that it or is there a cultural bravado to using big saws with big bars when we know a smaller (lighter) saw is available and easier to manage/ handle? Chainsaw program managers, supervisors and crew leads can help ensure we maintain a wide suite of differing sized saws that can be matched to appropriate tasks and objectives. Prior to engaging in an assignment, discussions should take into consideration the sawyers abilities, the task and then matching the appropriate piece of equipment objectively. This will allow us to dismiss any cultural bravado, minimize risk and ultimately set our sawyers up for success.

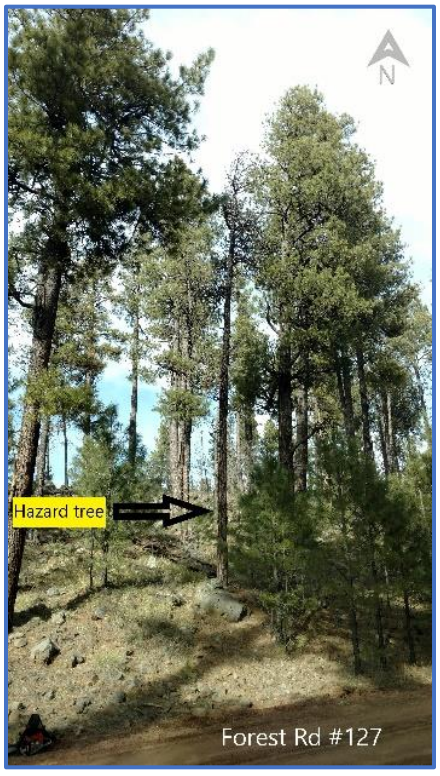
As early as S-212, novice sawyers should familiarize with smaller, lighter saws (without a full wrap handle) to learn proper body positioning and hand placement (in relation to the chain brake) while having an easier ability to maintain the saw in the event of an unexpected reactive force such as a kickback.

Develop medical kits for chainsaw injuries: Though the sawyers were able to self-evacuate from incident location to their vehicle and a medical kit, there was a realization that a medical kit specific to

chainsaw injuries should be developed and accompany saw teams at all times while engaged in cutting operations. Ideally these kits will be standardized across the agency and available as a Forest Service Supply (FSS) item.

Lack of qualified first responders and Hospital Liaisons: Both sawyers on this incident had expired medical qualifications. Having employees trained and certified as EMT's or Wilderness First Responders (WFR) is critical in providing prompt patient care during medical incidents in the field. Presently, some certified individuals within the agency feel under supported and find it difficult to maintain their certification. Fortunately the FS has recognized this and is currently developing an Emergency Medical Services (EMS) program and working with the National Park Service to develop a policy. This policy will establish guidelines as well as see to the provision of a medical director to oversee initial emergency medical training and recertification.

As the Hospital Liaison program is relatively new on the Coconino NF, there is not a large cadre of trained HL's. As such, it was difficult to get a HL dispatched to the Medical Center in a timely manner (ideally ahead of the patient's arrival). Through increased training and shadowing existing HL's, the Forest can build this program to support our employees in these critical times. The Forest continues to make strides with this program and learn best practices each time it is implemented.



This RLS was submitted by:
Graham Predeger
(Acting Safety and Health Manager, Coconino NF)
&
Luke Abell
(Region 3 Chainsaw Program Manager)

Do you have a Rapid Lesson to share?
Click this button:

Share Your Lessons