

Safety Lessons Learned—Stump Pulling

“Lessons Learned” is a proven method of sharing important safety messages. Based upon real-life incidents, Lessons Learned examines root causes of why an accident or injury happened and identifies corrective actions or mitigation to reduce the chance of future accidents. Lessons Learned does not identify people by name, nor is it finger-pointing or a way to place blame. It is an honest assessment of a chain of events that helps us find proactive ways to keep us all safer, healthier, and out on the Trail.

The Activity: Trail construction or reroutes often involve pulling stumps left over by chainsaw felling crews. Typically, it’s a low-risk operation: remove soil with hand tools from around the stump to expose roots, sever the roots with a pulaski and/or pick mattock, and gradually pull the stump free with aid of a “come-along” rope and anchor system.

What Happened: This near miss accident happened at a work event where stump pulling was a day-long task: the last stump of the day. The come-along operator applied excessive tension on the rope attached to the stump, which was bent over horizontally but still attached by its roots. The grubbing crew made the final root cut, and the stump became a high-speed projectile that struck the come-along operator squarely between the shoulder blades (*at a distance of 50 feet from stump site to operator!*) with enough force to knock the operator to his knees. The operator was wearing a day pack that contained a water bottle inside, which likely saved the operator from injury.

The Lessons Learned:

- This was the last stump of the day. The crew had been removing stumps without incident all day long. They knew the proper procedure. We can assume that fatigue played a role in the risk assessment portion of this final task, where the temptation to keep adding tension to the rope for “easier” stump removal was the (no pun intended) *root cause* of the near miss. Ropes stretch under tension, and excessive rope tension in this incident turned a tree stump into a dangerous missile. The proper purpose of a come-along is to gradually move and expose tree roots for safer cutting access with hand tools; it is not a tool to forcibly rip a tree stump from the ground under increasing levels of tension and rope stretch.

Lesson 5 of *Trail Safe!* discusses “Stress & Performance,” and how fatigue can impact our decision making and performance.

Lesson 7 of *Trail Safe!* discusses “Decision Making.” This near miss accident is likely a prime example of the Minimizing Strategy we sometimes catch ourselves doing, where we are prone (especially when fatigued) to use an improper tool or technique to accomplish a task—in this instance using a come-along to pull a stump free by excessive force and tension. Lesson 7 concludes by reminding us of the best practice 7-Step Operational Risk Management Process of decision making—the Optimizing Strategy.

- The crew reported that the positioning of the come-along system contributed to the physics of what happened. The come-along and anchor tree were downslope from the stump being removed, and the anchor was more than 20 inches above the root flare of the anchor tree. These mechanics only increased the risk that the stump could become a flight path hazard for others in the area. Again, *Trail Safe!* Lesson 7 reminds us to use the 7-Step ORM Process of decision making when looking for the best solution to any task. Anchoring near the anchor tree root flare, and avoiding downslope anchors, are best practices to follow. An added safety measure could be selecting an anchor site farther away from the stump being pulled—distance increases friction and slows a moving object.

Thank you to everyone for not only building and caring for the Ice Age National Scenic Trail, but for also working together to keep each other safe and healthy along the way. Be Trail Safe!