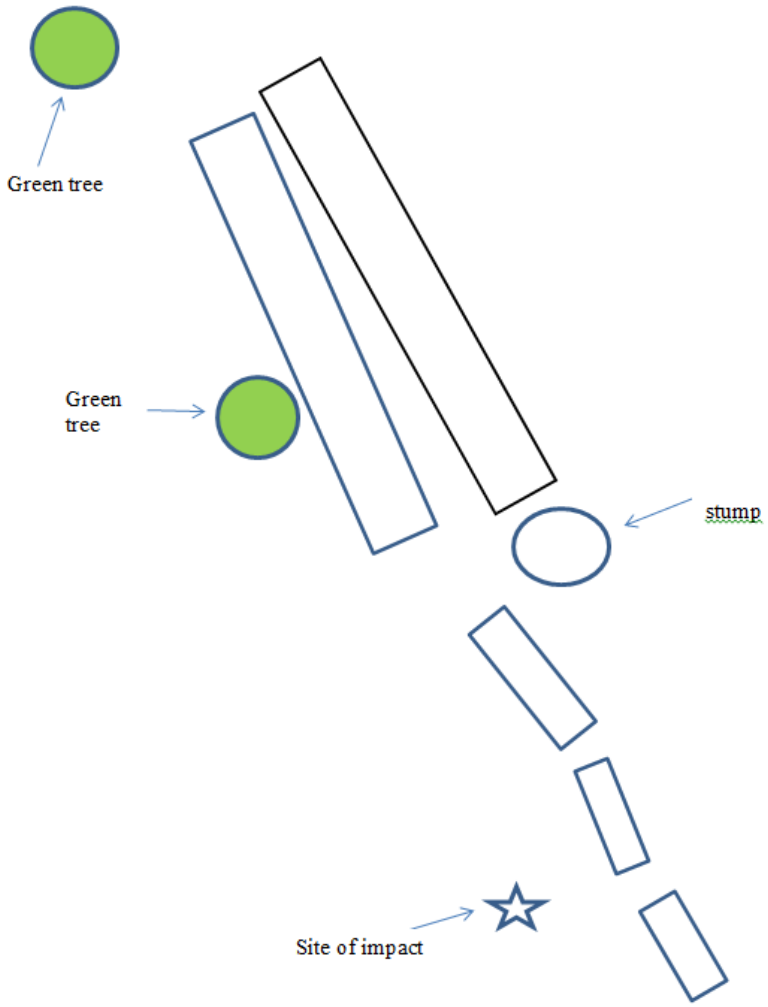
After Action Review of Chainsaw Personal Injury

From February 26, 2015

Kisatchie NF

February 29, 2015



Summary

On February 26, 2015, a module of four Smokejumpers were operating chainsaws in a burn unit on the Kisatchie National Forest. At 1510, a Smokejumper was struck in the head by a falling snag. On February 27, the Smokejumpers, District, and Forest personnel met to conduct an AAR of the incident.

Chain of Events of February 26

On February 26, 2015, eight Smokejumpers were "prepping" a burn unit on the Kisatchie National Forest. The Smokejumpers split in half and reported to two separate burn units. Prepping refers to a number of tasks needed to prepare a burn unit for ignitions. On this day, the Smokejumpers' mission was to mitigate hazard trees along a Forest Service road. Instructions from District personnel were to cut any tree that posed a threat to the Forest Service road that served as a control line.

The burn unit is composed primarily of 12-14 inch pine sawtimber approximately 80 feet in height. There are almost no midstory or understory stems. The unit was last burned three years ago. The spotty vegetation on the forest floor varied from 1-4 feet and is composed of grasses, some yaupon, bayberry, and other short, shrubby hardwoods as well as a moderate amount of greenbriar vines. Walking in the burn unit was not difficult overall, however the probability of entanglement was likely. When asked, the Smokejumper said he did not feel he was slowed down due to the vines.

Four Smokejumpers were working together in the same general area. The chase vehicle would drop a Smokejumper off to work a section of the road and go back to pick another Smokejumper up to work the next section of road. The fallers were working solo with no swamper, however, each sawyer was frequently in view of the other Smokejumpers as personnel were moving often.

After approximately two hours of cutting, a Smokejumper assessed a decayed snag. In his estimation the tree was a threat to the control line. Rotten pines can ignite during prescribed fire operations. This particular snag was not at risk of falling across the FS road, but could have ignited and thrown embers across the road. The snag was approximately a half to three-quarters mile from private land composed of pine plantation. The snag had been about 12-14 inches in diameter, but was in a very decayed state and most of the branches and top had been shed and was somewhere between 60 to 70 feet in height (exact height was difficult to determine as the top broke into pieces on impact). The stump was 66 feet from the edge of the FS road (the road itself was approximately 20 wide). A large amount of the sapwood was decayed, however there was still a solid core of heartwood.

After assessing the tree, the Smokejumper cut several hardwood stems (4-5 feet in height) to prepare his escape route. The Smokejumper identified the desire direction of fall. Just to the left of this indicated direction were two green sawtimber pines…one approximately 10-15 feet out and the other approximately 30-34 feet out.

Once the backcut was started, the Smokejumper used a wedge to push the snag over. The top of the snag cleared the closest green tree but encountered the branches from the second green tree. The snag broke approximately 25 feet above the stump. The top portion of the snag slingshot back towards the stump. The Smokejumper, after wedging the snag over, moved nearly straight back from the stump and watched the snag. As the snag broke and the top came back at the Smokejumper, he moved further away and roughly 45 degrees from the stump. The Smokejumper was struck by the top of the snag. The site of impact was approximately 12-15 feet from the stump and approximately 45 degrees from the angle of fall. The snag inflicted a glancing blow sliding down the right side of the Smokjumper's head, knocking off his hard hat and glasses. Smokejumper stated that as he watched the snag break, he didn't think it could come back that far and that he was surprise at the speed the top came back

Following impact, the Smokejumper assessed his condition, applied a bandana to the wound and immediately walked to the road. The chase vehicle was in the process of driving up and saw him walking out of the unit. An EMT on the module (Basic EMT with endorsements) immediately assessed the patient. The EMT attempted to clean the wound and realized it was severe. In the estimation of the EMT, the patient was coherent, did not lose consciousness, and did not sustain neck or back injuries needing immobilization. Evidence indicated that the patient had been "hit hard". The decision was made to transport the patient to the nearest hospital in the chase vehicle. While en route to the hospital, the patient was constantly evaluated by the EMT.

The Smokejumpers began making notifications immediately. They made cell phone calls to the module leader and to Pineville Dispatch. Pineville Dispatch notified the Forest FMO who was with the District Ranger for that unit. After discussions with the Forest Supervisor, the District Ranger departed to the hospital to function as a Liaison Officer.

After departing the burn unit, the Smokejumpers met their leader at the Ranger District office, reorganized personnel, and then continued to the hospital. The Smokejumpers continued to make notifications. The Base Manager for the crew was notified. Albuquerque Service Center was contacted. The Smokejumpers used the Emergency option at ASC to quickly get service. By the time the patient arrived at the hospital, ASC had faxed a case number and the emergency room staff was waiting and ready. Dispatch was kept informed throughout….information was quickly given to the Forest FMO which was then given to the Forest Supervisor, RO Fire and Aviation staff, and the Region Occupational Health and Safety Manager.

The patient was treated, given an MRI and released that night. The patient received cuts and abrasions over most of the right side of his head. Stitches were required to close two cuts. No other injuries are known to exist.

Findings

District personnel gave a clear mission statement to mitigate hazard trees. The snags along the road needed to be prepped to ensure the prescribed fire remained in the burn unit. The trees could have been cut, or raked, or pushed with a dozer. To be clear, when asked if that particular snag needed some form of mitigation, the District Assistant Fire Management Officer and the Smokejumper answered that indeed, that particular tree did in fact need to be mitigated. The Smokejumper did a Risk Assessment, and decided that he could safely fall the tree. Cutting hazard trees is the quickest and surest method to mitigate the risk. The Smokejumpers utilized Risk Management to assess each tree and were more than prepared to walk away from a tree deemed too hazardous to cut. The Smokejumpers stated they felt no pressure to cut all the hazard trees, they were aware of the options available to mitigate the hazard trees.

According to the Forest Chainsaw Coordinator, the facecut, holding wood, and backcut were appropriate.

Appropriate PPE was in use.

Smokejumper appears to be current in his saw qualifications.

In the words of the Smokejumper, the escape route "good enough". The stand is frequently burned, so there is no midstory or understory to impede escape. There was a layer of short shrubs mixed with vines that could have slowed the Smokejumpers escape and could have factored into this incident.

The Smokejumpers regularly discuss and practice what their actions would be in case injuries occur. They recognized cutting the trees was hazardous and discussed emergency actions.

The Smokejumpers employed Risk Management in making the decision to transport the patient to the nearest hospital in the chase vehicle. The patient was ambulatory and coherent. The EMT was trained, qualified, and equipped for the injury. An ambulance could have taken up to an hour to arrive, then another hour potentially to get to the hospital. The drive to the hospital took approximately an hour (incident occurred 1510, patient walked into hospital 1620). The EMT conducted constant assessment on the patient. The Smokejumpers evaluated the risks versus benefits of ground transport, ambulance transport, and med flight.

The contacts made by the Smokejumpers, Dispatch, and District personnel ensured all persons were well informed. ASC was notified early and responded quickly. The District Ranger was instrumental in his role as liaison.

There was room to the right of direction of fall. The selected direction of fall crowded the two green trees.

The smokejumper was surprised at the speed the top had when it came back at him.

A comment was made that trees in the south decay differently than in the west. Decay patterns, like fuel conditions and fire behavior can vary region to region.

Photo 1: Close-up of the stump.

Photo 2: View sighting across the stump and down the direction of fall.

Photo 3: View standing at the break mid-bole looking back at stump. There are pink flags marking the site of impact barely visible behind and to the right of the stump.

Photo 4: View showing space available to the right side of the direction of fall.