Rapid Lesson Sharing

Event Type: Tree Felling Mishap

Date: March 6, 2022

Location: Yellowpine Burn Unit, Angelina/Sabine National Forests, National Forests and Grasslands in Texas

Texas Highway 87, looking west. Truck and boat with damage in foreground, trees at cutting site in background.

Narrative

The Morning Of

On March 6th, a Type 6 engine module from U.S. Forest Service Region 2, with 3 personnel, was assigned to complete prescribed fire (RX) prep on the Angelina/Sabine National Forests of The National Forests and Grasslands in Texas. One crewmember was dropped off on the CCC Road to leaf blow an old dozer line,

while the Engine Captain and other crewmember were to work together prepping snags along Texas Highway 87 (TX-87).

At approximately 09:15, they encountered the first snag 0.3 miles west of the CCC Road along TX-87 on the north side of the highway. The crew pulled over and began a size-up of the snag. It was a dead pine, 31.5 inches diameter at breast height (DBH), with sound wood and a strong lean toward the highway. Because of the strong lean, it was determined not to be possible to fall the tree away from its lean toward the highway. The base of the tree was about 75 feet from the edge of the highway. The first 30 feet off the road shoulder was open grass before it becomes a forest of mature trees. The Engine Captain and crewmember discussed how the size of the tree would likely require a small double cut (as the diameter of the tree was just barely wider than one bar length). It was decided that the Engine Captain would perform the cut because the crewmember was not trained or experienced with double cutting, a cut that the Engine Captain had performed dozens of times and felt comfortable with.

Size-Up and Plan

In the size-up, the Engine Captain predicted the treetop would hit the near lane (north side of road) but not the far lane. He planned to use a boring back cut. During post-incident discussions, the Engine Captain stated that he chose to fall the tree using a boring back cut because it *"does not allow the tree to fall gradually, but rather suddenly so that I could control exactly when the tree fell. I considered handling it with another method like scraping, using a dozer, or calling more folks to help, but felt I had a workable plan"*.

Stump of primary cut.

He selected what he felt was a narrow but adequate lay for the tree, which would impact the road but only the near lane. He predicted his lay would hit a 12" oak about 15' in front of the primary tree, but believed it would clear the pine trees closer to the road and only brush or snap their small limbs. Because of the 30-foot grass buffer along the highway, he was not expecting those small limbs to impact the highway.

Due to the fact, the highway was open to traffic, and he only had one immediately available road guard, he came up with a plan to mitigate traffic impacts when the tree hit the road. The Engine Captain briefed the crewmember to position himself on the near shoulder where he could see both directions of traffic and signal when there was a clear window to drop the tree, then stop traffic while they quickly cleared the tree from the road. He also told the crewmember that before he made the last small cut that would release the tree into its fall, he would look to him for a thumbs-up that they had a clear window of traffic. The crewmember acknowledged this plan and the Engine Captain proceeded cutting the tree. It was his perception the road guard would have adequate visibility in both directions of traffic to identify a window long enough to drop the tree and be able to stop any traffic that approached while the tree was in the road.

The Outcome

The cut went as planned, and before the final cut was made to release the tree into its fall, the Engine Captain gestured to his road guard to see if he had a thumbs-up for a clear road. The crewmember checked the traffic for a few seconds then gave the thumbs-up.

The Engine Captain began the final cut at approximately 09:40 and the tree released after approximately 4 seconds of cutting. He cleared the stump and watched as the tree fell. It hit the oak tree as expected but also hit two green pine trees along the edge of the forest adjacent to the highway. The green pines broke off and fell across both lanes of the highway. As the primary tree hit the ground, the Engine Captain saw green needles from the broken pines appear to come very close to an unexpected red pickup pulling a boat traveling in the far lane at a high speed eastbound. He panicked, but felt the proximity of the fallen trees to the truck and boat as a very close call. However, he could not determine if the top of the green pines contacted the truck or boat.

Once the trees were on the road, he quickly looked at his road guard and, as he approached him, said "that was a close call". The Engine Captain initially thought the trees had missed the red pickup and boat. The road guard also told him that while he was watching and listening for traffic in both directions, he did not see or hear the red pickup and boat until they were very near the trees' lay. The road guard stated that it was traveling so fast he didn't have a chance to signal for the truck to stop. The truck returned to the site, and it was determined that the driver was not injured, however there was damage to the boat being towed by the truck.

Damage to boat motor.

The Engine Captain notified the District AFMO at 09:46, who said he would contact the District FMO. The FMO contacted the Engine Captain shortly after and was briefed on what happened. He directed the Engine Captain to start taking photos and documenting all details. The District FMO called his supervisors and requested the Forest Service Law Enforcement Officer (FS LEO), and a Trooper with the Texas Department of Public Safety to document the incident. Other resources working in the area were notified shortly after and were directed to return to the local work center. Lufkin Dispatch was notified at 10:46, Texas State Trooper arrived on scene at 11:10, and the FS LEO arrived around 12:05.

Lessons Learned

1. **When felling a tree, is the cut your greatest hazard?**
   In this instance, highway traffic was a factor. Controlling the cutting area should include posting appropriate road guards, and potentially stopping traffic during the cutting operation. When cutting a tree near other infrastructure, take into consideration the measures necessary to manage risk to firefighter and public safety. If maintaining control of the cutting area involves multiple personnel, ensure that those involved are briefed and understand the plan, and have clear communications.

2. **Does your size-up include the "big picture"?**
   When sizing-up a cut location, all factors should be considered. This includes surrounding factors including adjacent trees that may be affected by your primary cut and stand density that could impact the fall of the primary tree. Other hazards may be present in the area, including roadways or infrastructure that need to be mitigated. Take into consideration what resources are available and if they are sufficient to mitigate risk. Do not let a sense of urgency influence your risk management process.

3. **When working in an unfamiliar area, have you received an adequate briefing on local operations, available resources, and emergency procedures?**
   Briefings should include local operating procedures. These may include methods for mitigating risk that are not common practice in all areas. Alternate methods and equipment may be used, such as raking or clearing around a hazard tree to prevent fire from reaching it, or the use of heavy equipment to push or pull a tree against its lean in lieu of felling operations. Are resources and equipment readily available, and what is the procedure for acquiring those resources? Have you become familiar with local emergency procedures and points of contact in case an incident occurs?

4. **How is the claims process incorporated in such an event?**
   Knowing whom needs to be notified when such an event occurs can save valuable time and may help facilitate the process. A clear timeline of events as it relates to the claim process should be established. What photos and documentation at the time of the incident will be relevant to the claims process? Are witness statements from the time of the incident important? Which witnesses should statements be taken from? When and at what level does Forest Service Law Enforcement need to be involved if a claim against or in behalf of the government has the potential to be filed?

This RLS was submitted by:

Matthew Traynham
District AFMO

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

Share Your Lessons