

Rapid Lesson Sharing

Event Type: Dozer Rollover

Date: March 9, 2021

Location: Shooting Range Prescribed Fire,
Talladega Ranger District,
Alabama

Lessons from a Dozer Rollover on a Prescribed Fire Assignment

Narrative

The dozer operator, operating a 2016 John Deere 550K XL Dozer, was asked to assist with snag removal on a dozer line across three steep drainages on the Shooting Range Prescribed Fire. The plan was to walk the dozer down an existing dozer line on a ridge to where the snags were located. Due to earlier ignitions, this area was 80 percent black.

As the dozer operator moved across a slight slope (less than 15 percent), dark smoke from down drainage obscured his vision. In addition, two storage boxes located on the back of this dozer's blade obstructs the operator's view of the bottom of the blade. At this time, the operator's blade was more than 14 inches off the ground—when the dozer's left track engaged a 13-inch DBH downed oak tree.

If the operator could have seen how high the blade was, it could have been lowered and struck this downed tree rather than climb up onto it.

As the operator attempted to ease the dozer off this log, he encountered another unseen 14-inch DBH oak log located on top of the first log, positioned up on the bank. As the dozer continued to rise on the left—uphill side—a branch broke off.

The falling branch tilted the machine to the right—downhill side—and the dozer began to roll slowly over and onto the ground, coming to rest on its right side.

Both Operator and Dozer Seem Unharmed

After assessing the situation, the operator shut down the dozer's engine. Because his seat belt was located under his right side, the operator had some difficulty unbuckling the seat belt. After freeing himself, the operator exited the machine out the left door.

Both the dozer and operator seemed unharmed. The dozer operator called the Prescribed Fire Burn Boss (RXB2) and informed him of this incident. The dozer operator also called his supervisor.



RXB2 radioed the second dozer operator (DZIA) who brought their dozer (a John Deere 450J XL) to assist with up-righting the dozer.

They used two chains into D rings to slowly right the dozer. Next, to ensure that all the fluids were able to drain down, they let the machine sit for one hour. After this time period, the dozer was started. It appeared to be undamaged. They therefore walked the dozer to its transport.

Conditions

- ❖ The original mission and plan was proper and common for this dozer operator and the ranger district.
- ❖ The dozer operator had the previous day off and was physically and mentally ready for the day's work. He was wearing a seat belt that helped prevent injury. The dozer's slow roll also minimized injury.
- ❖ The dozer operator said the engine indicated an operation speed of 2.1 which appeared acceptable for the conditions.
- ❖ The dark smoke appeared to come from a small area of unburned fuel below the dozer. Terrain was relatively gentle and the firefighter who requested the dozer suggested the route based on his knowledge of the burn.
- ❖ The lack of sight on the logs was the causal agent, a momentary change in conditions—the smoke that blew in front of the operator, blocking the operator's vision.

Lessons

After this incident, conversations were held with multiple safety officers, fire managers, and dozer operators. The following was concluded:

- ❖ After walking the machine from one side of the fire to the other and encountering thick smoke, the dozer operator could have simply halted the mission and let the smoke pass.
- ❖ The smoke was upon the operator very quickly. This could have been expected in the prescribed burn environment.
- ❖ The route picked was the best option, but the urgency was not of that magnitude that would justify going through thick smoke to get to the snags. Waiting to let the smoke pass would have saved the dozer and operator from the rollover.
- ❖ The operator was aware that his blade was not high in the air. But, as it turned out, the blade was also not low enough to have struck the downed logs instead of climbing up onto them. On this machine, the two storage boxes on the blade obscures the view of the bottom of the blade. This can cause the operator to think the blade is lower than it actually is.
- ❖ Know your equipment and adapt to the configurations so you can safely operate the machine.

This RLS was submitted by:

The Dozer Operator

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