

Rapid Lesson Sharing

Event Type: Excavator Tip-Over

Date: June 15, 2021

Location: East Troublesome Fire – Suppression Repair,
Kremmling Field Office,
Bureau of Land Management, Colorado

Lessons and Insights from this Excavator Tip-Over

On June 15, a John Deere 160G Excavator tipped over onto its side while navigating a steep section of dozer line on the East Troublesome Fire.

The operator was unharmed and was able to safely exit the excavator after the tip-over. Damage to the excavator was minor and the equipment was fully operational once recovered from the site.

*“I want all my operators
to learn from this incident.”*

Equipment Owner

Prior to this tip-over incident, the Heavy Equipment Boss (HEQB) and the operator had been working together for 13 days on suppression repair of dozer lines.

On the morning of this tip-over incident, after discussing the plans for that day with the HEQB, the operator proceeded to complete the suppression repair on the ridge, working from the south to the north and back to the dozer line location above the accident site.

*“I wish I would have had the time to say:
‘No, don’t go’.”*

Heavy Equipment Boss

Once the ridgetop line was complete, the operator started down the steep 70-80% slope when the excavator’s tracks started to slide approximately 35 feet down the slope before the machine tipped over onto its side.

The operator had been working other steep slopes on previous days without any problems. The operator reported that: *“I felt I could safely proceed down the hill to a large spruce tree and work back to the top from that point. I feel like the rocks were the difference.”*



The HEQB had concerns with the steepness of this slope, but it is unclear if this concern was understood by the operator.

The HEQB and company transport operator were located at the vehicle staging area across the drainage to the west, approximately 1/4 mile away, when the accident occurred. The HEQB saw the operator at the top of the hill just as he was beginning to navigate his way down. He did not have time to radio him and stop him before he committed to going down the dozer line.

*“The need to take more time
looking for alternative paths down the hill is critical.”*

Equipment Operator

Contributing Factors

- ❖ The estimated slope at the accident site was approximately 70-80%.
- ❖ The steepest portion of the dozer line had large amounts of rock scree and loose materials on the dozer line.

What was Done Well

- ❖ The operator’s reactions of using the bucket and boom to slow his decent, and later, his decision to pull the boom in, may have prevented the excavator from rolling down the slope rather than tipping over and sliding.
- ❖ Reporting of the accident by the Heavy Equipment Boss.
- ❖ The efforts made by the contractor to upright the excavator without creating additional resource damage.

“Notifications to Agency Administrators went well. This was really smooth.”

Field Manager

Lessons

- ❖ Limit the use of heavy equipment for fire suppression repair to slopes that are recommended in the Fire Suppression Repair Plan.
- ❖ Consider using hand crews on slopes that exceed the equipment limitations that are identified in the repair plan.
- ❖ Adequately brief operators on the right to refuse an assignment due to safety concerns, operator, or equipment limitations.
- ❖ Ensure that orders are clear and understood. Consider face-to-face communications where there are areas of concern.
- ❖ Heavy Equipment Bosses should understand that while many heavy equipment operators are experts in construction operations—their experience on the fireline may be limited.
- ❖ Heavy Equipment Bosses and operators should understand the rehab plan objectives, standards, and specifications.
- ❖ Daily tailgate safety meetings should include hazards, access/egress, and any agency restrictions for the area.

Discussion Questions

- ❖ We work in remote areas. We should therefore factor in the availability of other resources should an accident happen. Also, is there another piece of nearby equipment better suited for the job?
- ❖ How can an agency representative ensure that local guidance on suppression and repair standards are adhered to and addressed?
- ❖ When an equipment operator has the potential to work in areas of concern, what can be done to help mitigate that concern?
- ❖ If the Heavy Equipment Boss is unable to be present at the area of concern, what are some methods we have to block off these areas?
- ❖ As a Heavy Equipment Boss, Incident Commander, or Duty Officer do you have a good understanding of what is in the contract for your contractors?

**This RLS
was submitted by:**

**Toni Toelle, Supervisory Fire Management
Specialist**

**Charles Portell, Fire Management
Specialist**

David Wall, Equipment Operator

Bryan Yeager, Safety Specialist

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

**Share
Your Lessons**