

Rapid Lesson Sharing

Event Type: Dozer Fire

Date: September 7, 2018

Location: Tepee Fire, Oregon



Burned Dozer 230.

***“I’m just glad we get to do this—the RLS process—so others
can learn something from it.”***

Dozer Operator

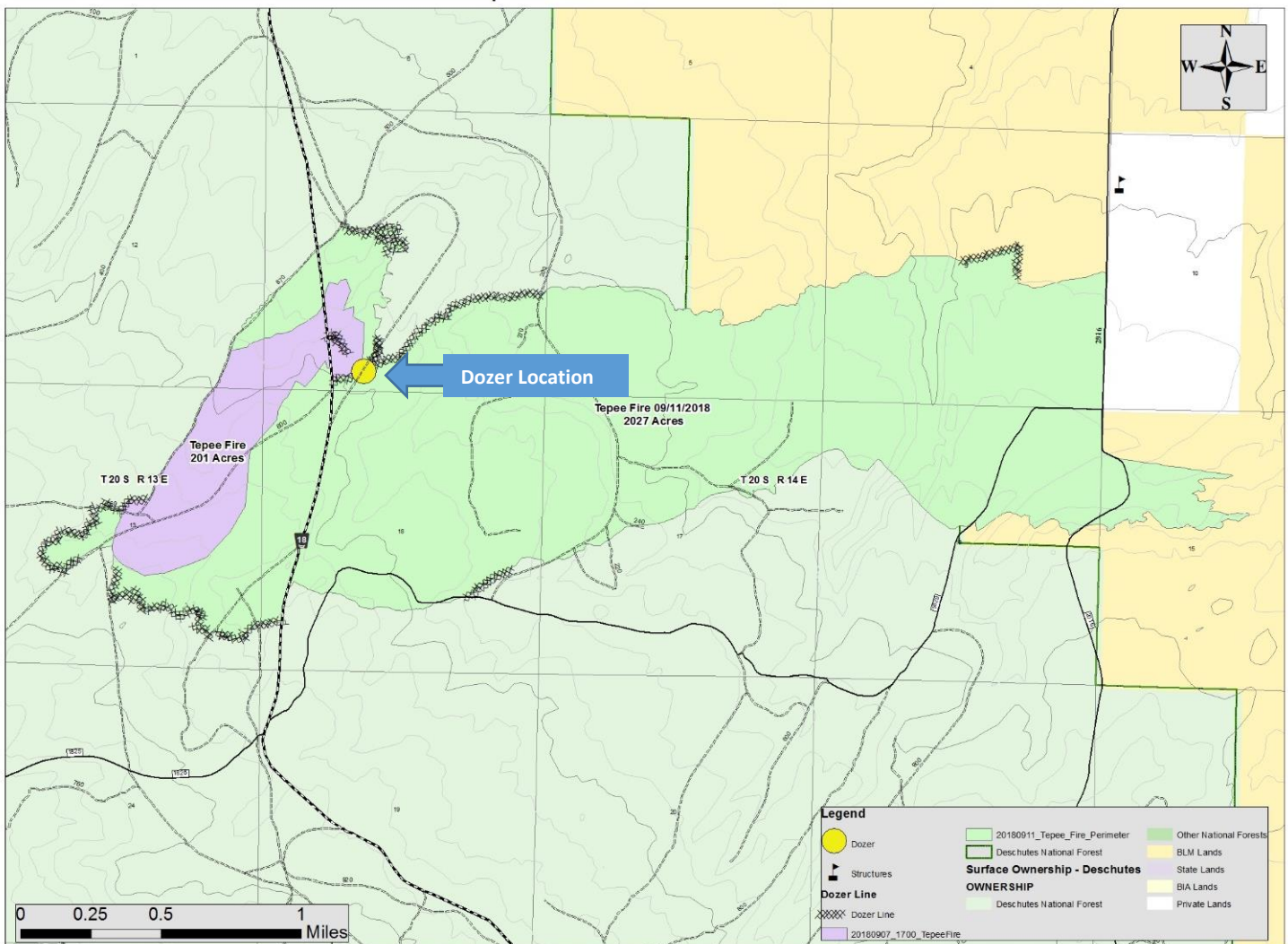
Background

On Friday September 7, a fire was reported on the Bend-Fort Rock Ranger District of the Deschutes National Forest. At the time of the incident, the Northwest Geographical Area was in a Planning Level 3 and was the priority region within the United States.

Several Type 1 and Type 2 Incident Management Teams were in the area, with a large amount of personnel suppressing fires.

Forecasts for the day predicted a dry cold front with the possibility of shifting high wind events. At 1500, the Tepee Draw RAWs showed a temperature of 84, relative humidity of 12 percent, and winds at 19 miles per hour.

Tepee Fire 09/07/2018 1700



The Story

The Tepee Fire (Incident #1144) was called in by the East Butte Lookout around 1130 on September 7, reporting several acres of fire with black smoke. The column was nearly vertical at the onset.

This incident was responded to by: Dozer 230; four Engines (E-331, E-332, E-333, E-636); a Battalion Chief; and Water Tender 90. It was a Type 4 fire with a trainee Incident Commander and several overhead positions filled. Division Zulu was the most active flank of the fire, taking the majority of the resources, including Dozer 230.

Engines, having arrived on scene first, had already deployed several hose packs attempting to anchor and flank the fire. The fuels in the area are predominately ponderosa pine stands with sage, which presented an accumulation of dry, dead woody debris.

Dozer 230 anchored in off the road system and began direct line construction. After a short distance, an impassable rock ridge was encountered. Unable to cross this barrier, Dozer 230 withdrew and, upon request of fire personnel, began suppressing several spot fires.

***“It looked like a possible success. But then we had a wind shift.
Smoke laid over the road.”***

Task Force Leader

Shortly thereafter, all firefighters withdrew to allow for airtanker drops and to regroup while shifting into indirect line construction. At this point, Dozer 230 noted a significant increase in fire behavior and that the fire was making a run at the indirect section of line.

Concerned about the location of the transport being in the path of the fire, the Dozer Operator made the decision to line and then move his low-boy transport. It was driven to a safe area, well clear of the fire danger. Afterward, the Dozer Operator received a ride back to his dozer. Upon arrival back to his equipment, he noted that he had to sweep debris and needle litter clear from the hood of his machine.

***“We had about a one-eighth of a mile spotting distance.
Any gust would pick it up.”***

Engine Crewmember

Dozer Operator Supports Firing Operation – Helps Suppress Spots and Slop-Overs

Now the Dozer Operator was tasked with supporting the firing operation which was in progress on the road system and indirect line. At this point, weather in the fire area would support both large fire growth and erratic fire behavior. Winds had increased and shifted directions with the arrival of the predicted cold front.

ERCs (Energy Release Component) for the day were well above the seasonal average, leading to increased spot fire potential. All Division Zulu holding resources (two Engines and Dozer 230) were actively participating in suppressing several spots and slop-overs.

Ember Starts Small Fire on Dozer’s Back Portion; Engine 332 Suppresses This Fire

During line construction on one of the spot fires, an ember started a small fire on the back portion of the dozer—between the rear window and the mesh protective screen. It was acknowledged almost immediately by the Dozer Operator who called for assistance from a nearby Engine. The fire was in some pine needles and a couple small branches. Engine 332 suppressed the fire with several gallons of water and the dozer continued line construction.

By now, fire behavior increased and visibility had diminished. The original plan of constructing line from the north to south to suppress the slop-over was shifted to anchor in from the south. The Task Force Leader (TFLD) and DIV Z intended for Dozer 230 to walk the road south with an Engine and aerial support to accomplish this task.

Departing to his new anchor point, Dozer 230 was separated from the other resources on Div Z. The Engine that was assigned to follow was blocked by increased fire behavior on the road. The aerial resources were ineffective in the placement of their drops due to communication issues. At the same time, because several trigger points had been reached, the incoming ICT3 took command of the Tepee incident.

Dozer Operator Notes Strange Odors Inside His Environmental Cab

While working on his own from the southern anchor point, Dozer 230 noted strange odors inside his environmental cab. He continued with direct line construction before noticing the smell once again, but this time much stronger. He looked out the rear window and noticed smoke coming out from between the tank guard and the fuel tank.

“I radioed that: ‘Dozer 230 is on fire!’”

Dozer Operator



The Dozer Operator radioed that his dozer was on fire and that he would use a fire extinguisher to attempt to suppress it. He set his blade on the ground and retrieved his line pack, gloves, hand-held radio, and briefcase.

The cab was rapidly filling with smoke. The fire extinguisher had little noticeable effect.

The operator began rapidly walking back down his dozer line toward the road to retrieve another fire extinguisher from Engine 332. He maintained communications throughout, noting that the situation was not due to wildfire burnover, and that he was OK.

The operator, along with a member of Engine 332, returned to the dozer, which now had thick black smoke rolling from the cab and motor compartment.

The second attempt to suppress was ineffective. Although numerous ideas to apply water or retardant were discussed, both individuals agreed that the dozer was already fully involved and was a lost cause. They exited the area for safety reasons, due to the potential for smoke inhalation and fuel or hydraulic line combustion.

“By the time he could smell it, it was on fire, deep in the machine.”

Task Force Leader

Possible Contributing Factors

Direct Factors

Debris on Equipment

Woody debris were noticed several times both on and smashed into different compartments of Dozer 230. (See photo on next page.) One small fire was started by needles and branches on the rear of the dozer. These materials may have been what started the cab fire. Personnel on the fire noted the probability of ignition as being very high.



Woody debris that had been smashed into the side of Dozer 230 during operations on the Tepee Fire.

Mobile Radio Installation

Prior to this incident, a mobile radio was installed within Dozer 230. This radio unit was placed inside the dozer's environmental cab with wires extending out to the exterior battery compartment. Due to normal use, wire insulation may have been compromised, causing the fire. The operator noted that he had to re-set the unit several times during that shift.

***“Technically, there’s no need for a Dozer Boss with an IA Dozer,
but it’s good practice to have a partner with him.”***

Incident Commander

Indirect Factors

Dozer Operator Working Alone

Even though there was an attempt to maintain resources nearby the dozer, the Dozer Operator was alone during the second fire that ultimately burned down the equipment. It was noted that this had become the normal operation, due to lack of funding for several positions on the District, and that the qualified Initial Attack operator typically worked alone. These positions were previously filled at the District level but had gone vacant and unfilled.

Transition of Command

Although not directly correlated, the fire activity required a higher level of command that was dictated by trigger points reached by the Type 4 Incident Commander. Because of the associated cold front passage, coupled with numerous spot fires, resources may have become overextended. These factors that attribute to the need for an IC transition are traditionally a valuable moment to take a tactical pause to reorganize.

Conclusions and Lessons Learned

Though no single factor can be attributed to the cause of this dozer fire, several possible contributing factors can be looked at to minimize the potential for a recurring situation.

The lessons and thoughts from incident personnel that could aid in the future include:

- ❖ A regular maintenance schedule that includes the clearing of debris from all compartments in and around the equipment.
 - ✓ An early season and mid-season review of areas, emphasizing the oil pan and tank guards.
- ❖ Personnel to work directly with the Dozer Operator.
 - ✓ A Heavy Equipment Boss or Dozer Swamper working with equipment to maintain LCES and to assist the operator with other unforeseen circumstances.
- ❖ Annual inspection of electrical equipment.
 - ✓ Check wires for proper insulation coverings.
 - ✓ Check terminals for proper attachment.
- ❖ Tactical pause during Incident Command transitional period.
 - ✓ This tactical pause would provide an opportunity to reassess the success of the plan, reorganize, and share information.
- ❖ Inform all personnel to the extent of any Incident Within an Incident.
 - ✓ Suppress all rumors as to what may have happened.
 - ✓ Notify Dispatch to disseminate information as is necessary.
- ❖ Consider providing an in-cab suppression system in heavy equipment.
 - ✓ These systems already exist and are available from several sources for heavy equipment.
 - ✓ https://pyebarkerfire.com/products_services/vehicle_fire_suppression_systems/



This RLS was submitted by:
Chris Joosen, Matt Holmstrom,
and Tim Hart of the PNW RLS
Team, with support from the
Pacific Northwest Coordination
Group.

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

[Share](#)
[Your Lessons](#)