

# Rapid Lesson Sharing

**Event Type:** Tree Strikes Parked Engine

**Date:** October 18, 2017

**Location:** Nuns Fire, California

## A Matter of Inches . . .

On the Nuns Fire on the morning of October 18 at approximately 1145, during mop up operations, a large (60-inch DBH) fire-weakened, green Douglas fir tree fell from upslope, at a 90 degree angle, and landed across the hood of an engine that was parked on the road below with two people inside.

The five-person engine crew had been assigned to evaluate and identify hazards for the MM Division Supervisor.

In addition to patrolling, as the engine crew moved through the burned area, they were also mopping up hotspots along the roadside.

The crew had scouted the road to the end and were working their way back, suppressing hotspots.



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***“Our leadership did a really great job, they were super calm and collected—amazingly so the whole time. I was in shock. But these guys immediately established communication, making sure everyone was OK. Pretty amazing that we are standing here today. It was a matter of inches.”***

**Engine Crewmember**

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The Engine Boss stopped the engine directly below a large green tree with fire and smoke coming from its base—which was obscured by unburned brush. One crewmember dragged hose from the live reel toward the base of the tree while another crewmember helped with hose deployment from the back of the engine. Another crewmember stood on the road as a lookout behind the engine.

The Engine Boss and Engine Boss Trainee remained in the engine’s front seats writing intel information for the Division Supervisor that had been gathered from their scouting mission.

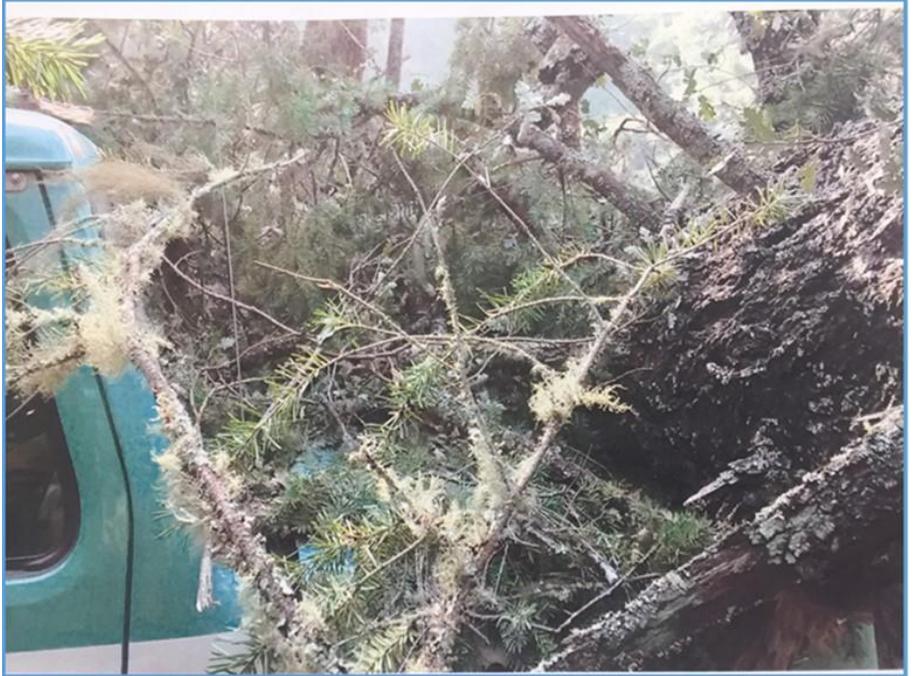
The Engine Boss would later explain: *“Intel for the Division Supervisor had not been passed forward and he (the Division Supervisor) had not sent anyone into the area for three days. We knew there were hazard trees in there*

***“You just don't look at a green tree with smoke at the base with green stuff all around it and think to yourself that this thing's coming down any second. That's just another smoke for the rest of the crew to knock out. We had knocked out half a dozen smokes before going down that road.”***

### **Engine Boss**

*and had received a good briefing. You just don't look at a green tree with smoke at the base with green stuff all around it and think to yourself that this thing's coming down any second. That's just another smoke for the rest of the crew to knock out. We had knocked out half a dozen smokes before going down that road.”*

Approximately 90 seconds after assessing the base of the tree and spraying it with water, crewmembers outside of the engine began yelling that the tree was starting to fall. Crewmembers on the road moved quickly down the road. The Engine Boss didn't put the engine into reverse because he couldn't see if any of the crew was behind the engine. He attempted to move forward, but the tree had already fallen and hit a large oak tree across the road from the engine.



**The 60-inch wide and 120-foot tall green Douglas fir caused major damage to the engine. It was determined that this fir had root rot.**

### **Oak Tree Reduces Impact onto Engine**

The full impact of the falling tree split the large oak in half. The oak tree was located approximately 40 feet in front of the engine. The oak reduced the impact and possibly the location of impact to the engine. Ultimately, the 60-inch wide and 120-foot tall fir landed across the hood of the engine.

The impact caused major damage to the engine, impaling a branch in the hood and shattering the windshield. While all crewmembers were stunned, everyone was physically OK.

Afterwards, one of the crewmembers said: *“We were making the area safe for someone, we were doing our job.”*

The engine crew was on their eighth day on this fire and had been assigned to four different Divisions. The crew was frustrated by lack of assignment continuity. The area that the crew was working in appeared to have had chainsaw work prior to their assignment.

A brief defusing was conducted at ICP by PEER staff assigned to the incident.

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## **What To Do About Green Trees?**

- ✓ Green trees fall for all sorts of reasons. How do we account for this when working in a sea of green trees? Some people like to say: *"If it's predictable it's preventable!"* But it is rather difficult to *predict* which green trees will fall.
  - Are we prepared to admit this situation is NOT preventable?
  - What action are we left with if we admit a deadly situation we commonly face is NOT preventable?
- ✓ Take time to consider root rot commonly found in certain species of trees. In this case it was determined that the Douglas fir tree's root system had been affected by root rot. However, because most of the root system had burned, it was difficult to determine the extent of this root rot.
- ✓ We all perform some sort of initial and continued "Risk Analysis" of our assigned work areas.
  - Does your typical risk analysis include scanning for situations that might lead to green trees falling? (Smoke coming from the base of a species known for root rot.)
- ✓ It's always nice if fallers have an opportunity to assess and fell hazard trees in an area prior to other firefighters coming in. This is not always available or convenient.
  - When receiving your assignment, do you always ask if fallers have been through the area?
  - What specific scenarios will trigger you to not work in an area until a full hazard tree assessment has been done?
- ✓ What if you do identify a tree or a group of trees with compromised root systems or a high likelihood of compromised root systems but there is still work to do in the area?
  - What are typical mitigations?
  - What unconventional mitigations can you imagine?
- ✓ Lookouts are good.
  - What are the limitations of a lookout in this situation?

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***This RLS was submitted by:***

**The Safety Officer**

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