Rapid Lesson Sharing

Event Type: Engine Tire Fire

Date: June 18, 2016

Location: Deer Creek Fire, Wyoming

NARRATIVE

During initial response to the Deer Creek Fire, a Forest Service Type 4 Engine was positioned on a ridgeline supporting its crew with water. Another engine, a Forest Service Type 6 Engine, was one hundred yards farther upslope, parked in the black; awaiting further use.

A while later, the Type 4 was moved next to the Type 6 in the black and staged to be used later.

After an hour watching the fire back and spot in a drainage below the grassy rolling topography, a few spots started working upslope toward these two engines staged in the black.

The black where the Type 4 Engine was parked.

After the wind picked up and the fire activity increased slightly, both engines were moved approximately 100 yards farther up the line and placed into another cold black area to avoid ember wash. After approximately 20 minutes more had passed and fire activity had decreased, the crew then utilized the Type 6 to anchor and flank the fire from the cold black. They continued to hold the fireline to the drainage, awaiting arrival of a dozer.

The Type 4 was now used as a water tender in staging (limiting unnecessary wear and tear due to large rocks and unfavorable terrain features).

After about 30-45 minutes of using the Type 6, the fire temporarily checked-up. The engine crews were in a holding pattern monitoring plow and black line. Engine crewmembers continued to monitor the line and the Type 4 for any possible heat.

Burn effects on one of the dualies.

Dual Tires on Fire

A few minutes later, a call came over the radio of a smoke next to the Type 4. This smoke was then confirmed as coming from the Type 4's right rear dual tires.

The engine crewmembers looked up the slope to confirm the smoke. They saw flames shooting up the back right side of their engine. They ran to the engine, started the Type 4's pump, and began using two hard lines to put the fire out.

The Type 6 joined in and began using its hard line. A total of 3 hard lines were used to put the Type 4 fire out. From the start

They discovered a hole in the brake air line located approximately three to four feet in front of the right rear axle in the middle of the frame. (Arrow points to where they patched the damaged line with electrical tape and zip tie.)

of the smoke to putting the fire out approximately one minute had passed. After the fire was suppressed, more water was used to make sure there were no underlying embers that could cause more problems.

Next, the crewmembers began to assess the damage. They initially noticed cosmetic damage to the tires, wheel well, fender flares, and paint. After this initial assessment, they began mechanically assessing the Type 4. At first, they didn't notice anything obvious—until they started-up the Type 4's engine.

Leak in Brake Air Line Discovered

They heard a noise that resembled an air leak and decided to inspect the entire undercarriage. In doing so, they discovered a hole in the brake air line located approximately three to four feet in front of the right rear axle in the middle of the frame.

They made an attempt to patch the air line, which was initially unsuccessful. With this temporary fix, they realized that the air pressure was now sufficient enough to get the Type 4 off the hill onto flatter, safer terrain. They scouted out a route that was void of rocks, holes, or any other terrain hazards.

All crewmembers were briefed to ensure that everyone knew their roles and positions to avoid any other incidents while getting the Type 4 off of the hill.

Once they successfully moved the Type 4 into a safer, workable location, they began to assess the damage more thoroughly. At this time, they patched the air line using electrical tape, duct tape, and a large zip tie. This repair was adequate enough to build air pressure in the lines and allow them to safely drive the engine approximately three miles to a more suitable location on pavement where a tow truck could easily access and retrieve the Type 4.

SUCCESSES

- ✓ The crew monitored the Type 4 Engine even after it was parked in the black.
- ✓ The crew swiftly recognized the tire smoke, responded quickly, and successfully suppressed the tire fire on the engine. The dual tires, though permanently damaged, retained much of their integrity.
- ✓ After the tire fire suppression, the crew thoroughly surveyed the Type 4 for damages and discovered the leaking brake air line. The crew then formulated an action plan and route to move the engine to flatter terrain to try to repair the air line.
- ✓ The crew repaired the leaky brake line sufficiently to get the equipment off of the fire and to a road where a wrecker could hook up and tow to a repair shop.
- ✓ The crew recognized that their temporary repair couldn't be trusted as a safe enough fix to return the engine back to the station.

LESSONS

- ✓ The entire crew had an After Action Review where they discussed what they could have done differently. It was unanimous that they should have inspected and sprayed the tires with water after driving through burning sagebrush and other burning debris that may have become lodged into the dually or tire tread.
- ✓ Also, engine crew personnel didn't trust the tires or the air line patch. Therefore, it was not an option to drive the engine any farther than the crew needed to.
- ✓ The crew recognized that if they were to drive the engine on a public road, their health and safety would have been compromised—as well as the general public's. So, driving the engine at low speed to an area where the tow truck could safely retrieve it was their only option.

This RLS was submitted by:

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