

# Tree Felling Accident – Learning Review



**Figure 1: End result to pump house and solar panels from tree felling incident.**

Site: Emigration Parking lot/Emigration Campground culinary water system/pump house, Montpelier Ranger District, Caribou-Targhee National Forest.

Date/Time: July 31, 2012, approximately 0930 hours.

Weather conditions: Clear, sunny and only a light, intermittent breeze.

Specifics: Three Forest Service crew members were waiting in the parking lot area, while another crew member was completing chainsaw certification training in an adjacent area, before the crew was to leave for another project. The Recreation Technician assigned to this recreational area and facility, drove into the parking lot, saw the crew waiting and asked if anyone would be willing to fall two, live, Lodgepole pine trees which were partially blocking the solar panels that power the campground water system, located upon the roof of the pump house.

One crew member, who is qualified as a B sawyer and has 8 seasons of fire crew experience, was willing to help while waiting for his other crew member. This sawyer had been on duty for approximately 8 days, and was rested and mentally and physically feeling up to the task. The Recreation Tech. did not go to the exact location with him, but he had clearly explained which trees needed to come down. The B sawyer located the trees, evaluated them for falling along with the surrounding area and the location. He felt comfortable with the task and techniques involved. He had all required PPE and equipment needed for the tree removal. He used an appropriate chainsaw that he was very familiar with, along with falling wedges and falling ax.

The trees being felled were 18”to 24” diameter Lodgepole pines, somewhat limby, approximately 50 feet tall with small amounts of lean towards the open area adjacent to the standing trees.

Tree falling techniques and concerns: The sawyer felled the first tree in the desired direction, using a conventional face cut and then back cut. There was a dutchmen in the face cut on the sawyer’s off side, and feeling that the dutchmen would not compromise the direction of lay, the sawyer completed the cut.

On the second tree the sawyer had a procedure in place, felling the tree upslope and away from the pump house, similar to that of the first tree. All the cutting was done from the uphill/ opposite side of the pump house. The tree had a slight lean in the desired direction although the majority of the limb weight was towards the pump house. With the tree being alive and green this added more weight than anticipated. Using the gunning sights, a face cut was put in facing roughly 90° away from the pump house. Unlike the first tree there wasn't a dutchman. The back cut was done in whole, dogging in on the upslope side of the tree, behind the holding wood and then pivoted. The sawyer anticipated that the tree would begin to start falling, which didn't happen since the weight of the limbs was pulling in a different direction. The sawyer continued cutting through the back cut and eventually through the majority of the holding wood. Once the holding wood was severed the weight of the limbs broke the remainder of the holding wood and the tree fell towards the pump house and solar panels on top.



**Figure 2: Reconstructed stump of tree which was felled partially onto pump house.**

What Went Well: A Fire crew member, who was on site, was willing to assist another program area, while waiting and available to help out.

The first tree was cut and felled just as planned away from the pump house building. Sawyer started on the second tree using the same technique as with the first tree.

Accident was reported immediately and appropriately.

There were no campers or any others in danger in a fairly open space.

Communication throughout the incident was very good.

No one was injured.

The sawyer evaluated his own actions and was able to see where he had gone wrong.

There was a greater concern for how to keep water flowing to the campground(s) than to place blame or to "chew someone out".

Lessons Learned: Tree felling is a dynamic situation. Each tree needs to be sized up and a planned procedural approach needs to be in place. Using a different cutting procedure may be needed even on similar trees.

Reviewing the situation with the sawyer, discussion included multiple cutting procedures ( ¼ cutting the back cut so wedges will be in the tree early and often).

Always check your cuts.

Don't cut your holding wood.

Use wedges.

There were two other certified sawyers available that could have gone with him to act as spotters and/or give advice.

The Recreation Tech. could have easily walked to the area and discussed the project with him.

Perhaps take a bit more time for the entire operation as there were costly infrastructures involved in the falling area.

Sawyer spent some time after the incident re-checking and reviewing his skills with a C sawyer and felled trees as planned. He feels it is a "lessons remembered" experience, as there are lots of little things to learn in the beginning which can sometimes be taken for granted.