

Base Machine Pulled Over by Steep Slope Machine

Incident

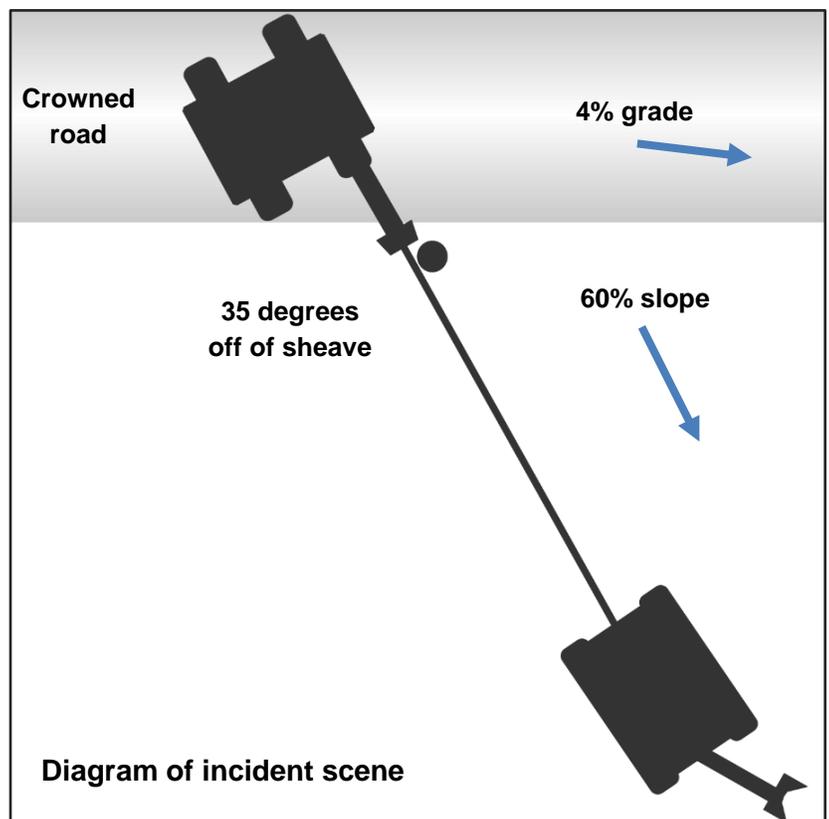
In January of 2018, an operator had a near miss when he pulled over a base machine tethered to a steep slope machine (SSM).

The operator had over 43 years of logging experience, including shovel logging, cutting, tower logging, and management. He located the base machine on a gravel road with a 4% grade. He buried the bucket to half its depth behind a stump. The tracks of the base machine were in line with the bucket. The road was crowned, which allowed for the base machine to rock. The sheave was at 35 degrees and the SSM was on a 60% slope. He only had six trees to fall, and in this location the trees could have been felled without the aid of the line. As he was working, the over-speed sensor was activated on the SSM. This indicated that one of the two drums on the base machine was releasing line quicker than the other, not in unison. On this machine at that time, when the over-speed alarm was initiated, the park break would engage, locking the drums. The alarm would have to be reset before the base machine could operate again. After the alarm was activated, the operator stopped to fell a tree. When he completed the cut, he began traveling downslope. He had forgotten to reset the over-speed alarm, so the park brake remained engaged. When the operator moved the SSM downslope, the back of the base machine was lifted, causing it to pivot and fall over on its side.

Root Causes

In this instance, the over-speed alarm was activated prior to the incident, and the park brake engaged, locking the drums. This was not by design, and there had been issues with this occurring previously on this machine. Although the operator was aware of the issue, he did not reset the alarm to disengage the park brake before traveling downslope to continue work.

With the base machine located on the crowned road and the park brake engaged, it took little force for the base machine to be pulled over when the SSM began to move.



Recommendations

- When first setting up the base machine:
 - Bury the bucket.
 - Extend the boom past 90 degrees.
 - Set up the base machine so the pull is as straight as possible.
- After repositioning the base machine, ensure it is stable prior to working. This can be accomplished by moving the SSM to a safe distance from the base machine, but where it is still visible. Travel the SSM back and forth a few times at higher tension. This will stabilize the position of the base machine.
- If the location for the base machine is not level, place cribbing on the low side and walk base machine on it to level out, or slightly elevate front of machine.
- Before operating the system ensure that all safety systems are functioning properly.
- Even very experienced feller buncher operators can be caught off guard by some aspects of tethered systems. The technology is new and industry best practices are being developed. Extra attention and caution should be used as operators familiarize themselves with the differences presented by tethered systems and SSMs.

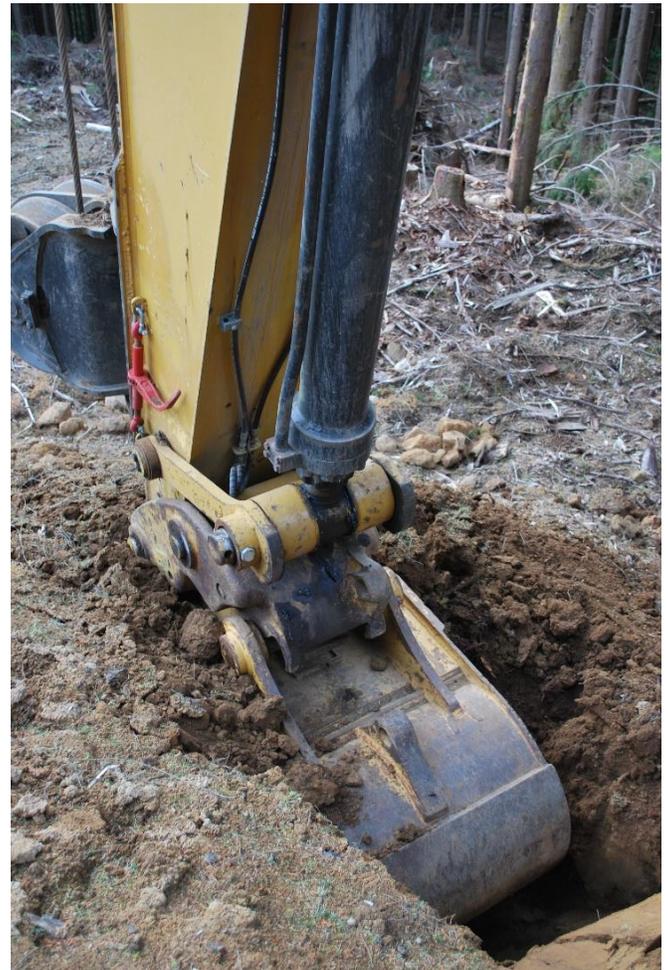


Photo 1. Bucket properly buried and a low angle off of the sheave.