Major miscalculations

When felling trees with an excavator, make sure you know when and where to dig

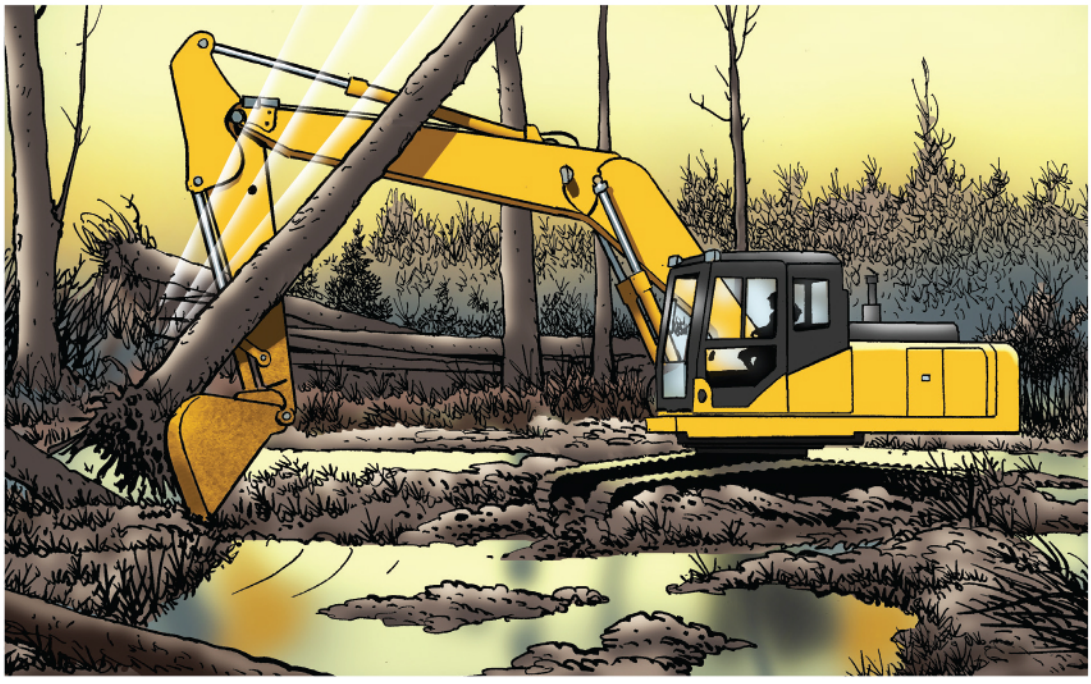

Illustration by Don Lomax

The accident: A site development contractor on a parking lot project had assigned three workers to clear the site. A worker began using a hydraulic excavator to remove trees, using the bucket to both dig away from the base of the tree and then to push the trunk of the tree over. A tree fell onto the cab of the excavator, pinning him inside. He was pronounced dead at the scene from mechanical asphyxia as a result of being pinned in a contorted position.

The bottom line: A post-accident investigation determined the tree that fell onto the cab was approximately 60 feet tall, with an 18-inch diameter, and had a shallow root system that made the tree unstable. Furthermore, the area the worker was clearing was muddy with shallow ponds. The investigation determined the area was not conducive to heavy equipment stability, and land-clearing applications such as tree felling should have been postponed until conditions improved. The company also did not have a felling plan in place to familiarize operators with the hazards of the process.

Landclearing lessons

When clearing land, using a purpose-built carrier such as a forestry machine is the safest method for felling trees. If no forestry machine is available, make sure you use best practices when using an excavator to knock down trees:

Be wary around water. Not only must the water level be no deeper than the top of the excavator's tracks, the bottom of the stream or pond where you are working must be able to support the weight of the machine. Wet, unstable soil combined with potentially shallow root systems could cause you to lose control of the tree.

Don't work in high winds. Whatever hazardous conditions you may encounter will be worsened by gusting winds. Once the tree is free of the ground, changing wind directions and speeds will limit your ability to control the direction in which the tree will fall.

Get the proper training. Experience is your friend when taking down trees. Understanding what type of material you're dealing with and how to best remove it is key, and training will help you to understand how wind direction and tree lean can impact the direction of the tree's fall. Knowing where to make the first dig is important in securing your safety and the safety of your crew. EW

Information for this Safety Watch is from an accident report, the Center for Disease Control's NIOSH Fatality Assessment and Control Evaluation program, and OSHA standard 29 CFR 1910.266. It is meant for general information only.

Date of safety talk:_____ Leader:_____
Attending:_____