

Safety Savvy  
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## **HITCH'EM LOW – PULL'EM SLOW**

By Dan West

Cutting firewood is a pretty common winter activity for farmers around here. The workload is a little lighter with no crops to plant, cultivate or harvest this time of the year, and money can be saved or made with firewood. Some cut their own fuel to dry for the next season while others sell wood to turn their time into money. Most farmers already have the necessary equipment – a chain saw to cut the trees and a tractor to skid them out of the woods. As with most things, there is more to this than meets the eye if you want to be able to do it for long.

If you stop to think, I would guess that you, too, can think of someone who has been seriously cut by a wayward saw chain, or has been injured trying to dislodge a hung-up tree or maybe even killed when a cut tree kicked back over the stump. Most of these deadly situations can be easily avoided by taking a moment to observe and plan your work, by using proper techniques, and personal protective equipment. You know you need to use the chain brake on your saw, and guard against kick-back. You need to wear chainsaw resistant chaps to protect your legs, safety glasses to protect your eyes and hearing protection for your ears. You know it is best to remove saplings before they become spring poles, and retreat from the stump at a 45° angle to the line of fall. These are basics.

The hazard I want to emphasize, though, has taken the life of a wood cutter nearly every winter for the past several years. It is not usually thought of as part of a wood cutting operation. It is tractor roll over while skidding a log.

Do you know that half of all agricultural work related deaths – including those occurring while cutting firewood – involve a tractor? Half of those tractor-related deaths result from a tractor roll-over. Most commonly, while skidding logs, the roll-over is to the rear. But why? What can be done to avoid this threat? It's simple physics (but who ever said physics was simple?). Let me try to explain.

It has to do with where you choose to attach the chain or cable to the tractor. The rear axle acts as a pivot point. A load attached above the axle is going to cause the tractor to try to rotate backward, while a load attached below the axle is going to cause the tractor to try to rotate forward, but it can't. Think of it this way. You want to pull an occupied kitchen chair backward across the floor with a rope; if you tied the rope up high to the back of the chair and pulled, the chair would likely tip over. On the other hand, if you tied the rope down low to the leg of the chair near the floor, you probably could pull the chair without it tipping.

I can hear the comments already. “But I have more traction when I hitch up high – I can’t pull the load if I hitch at drawbar height.” You know more about physics than you thought you did! But the bottom line is this; if you have to hitch high-up to pull the load, the load is too big for your farm tractor and you are asking for serious trouble. You can still take the weight off the butt of the log by lifting it slightly, but be sure you pull from below the level of the axle – that is what log arches are for. You never know when your log is going to catch on a rock or stump along the way and become an anchor that nothing could pull. If you are hitched low, your tractor will just spin or stall. If you are hitched high, your tractor will rear up and go over backward in 1 ½ second or less.

If your tractor doesn’t have a Roll-Over Protective Structure (ROPS) you only have a 20% chance of being thrown clear and surviving. If your tractor has a ROPS and you buckled your seat belt, you have better than a 99.9% chance of walking away from it. What a choice!

Whether you cut cords of firewood, or you just need to clear away a blown-down tree, remember these points to safely pull logs with a farm tractor:

- Hitch it low and pull it slow
  - Below rear axle-height, preferably at the drawbar
- Watch out for stumps and rocks that could snag the log while you are pulling it
- Don’t overload your tractor
  - Start with an easy load because slopes, mud, and debris can quickly and unexpectedly increase the load
- If at all possible, only use a ROPS equipped tractor, and don’t forget to fasten your seatbelt!
  - Don’t trust a homemade or modified structure – special steel and fasteners go into an engineered ROPS designed to absorb just the right amount of energy to keep you safe in a roll-over.

For more information on safely cutting and skidding firewood or doing other winter agricultural tasks, call the New York Center for Agricultural Medicine and Health (NYCAMH) at 1-800-343-7527.