



OPEN FACE TREE FELLING METHOD

Improving Production, Safety and Quality

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As a professional tree faller, would you be willing to change the way you cut down trees if it was faster, safer, and resulted in a better quality log? If you are not currently using the open face tree felling technique, then you can probably improve in all three of these areas.

Safety Guidelines

Follow all safety guidelines for any tree felling job. Safety begins with wearing the proper clothing and using proper equipment. Proper personal safety clothing and equipment include:

- 1) Chaps or safety pants that cover from the upper thigh to and overlapping the top of the boot.
- 2) Safety boots.
- 3) Hard hats or safety helmets.
- 4) Eye protection and face protection.
- 5) Ear protection.
- 6) First-aid kit and snakebite kit.
- 7) Chainsaw in good operating condition and equipped with a chain break, throttle lock, and chain catcher.
- 8) All professional fallers should carry wedges to aid in proper directional felling. Wedges should be made of plastic or wood and never metal. As wedges become misshapen, they should be reshaped to their original form.

The Open Face Tree Felling Method

The following steps outline the open face tree felling method. Every tree and felling situation is different. It is through careful experience that you can learn to use this method, and variations of it, to improve production, safety, and quality.

Step 1. Look before you cut. Check the surrounding area for any potential dangers. Look up into the tree you are about to cut and into any surrounding trees that may be in the falling tree's path. Are there grapevines that connect this tree to another? Can these alter the path of the tree's fall? Are there dead snags or "widowmakers" in the cutting vicinity? Are people and equipment at least **two and one-half** tree lengths away?

Step 2. Plan your escape route. It should be at a 45-degree angle back and away from the direction of fall. Cut and clear away any brush or vegetation that may impede your escape route. Keep equipment and other items out of your escape

route.

Step 3. The top cut is the cut that determines direction. It should be made at a 50- to 60-degree angle off the horizontal. However, the top cut can be more than 60 degrees if the tree flares at the butt (see Figure 1). More sawable wood can be saved when making this type of cut. Make the cut so that the stump height is as low as possible. Cut should be approximately 1/5 to 1/4 into the diameter of the trunk.

Step 4. The bottom cut should be made at a 30- to 40-degree angle off the horizontal. Look into the top cut to see when the two cuts meet. The top and bottom cuts should meet perfectly. If not, redo the bottom cut until they do meet. **If necessary to redo the top cut, be sure to recheck for direction.** When cut properly, the wedge of wood makes an approximate 90-degree angle. This angle allows the tree to hit the ground before the notch closes. Therefore, trees being felled downhill may require a larger notch size. This reduces the chance of pulling wood fibers from the butt log.

Remember: *If the top and bottom notch cuts do not meet exactly, the tree may barberchair. This can result in the following hazards: the tree can jump backwards off the stump, the butt log can split, and you can lose control in the direction of the fall. Never cut a tree without an undercut for these same reasons.*

Step 5. Back cut (felling cut) should be started 1 to 2 inches above the center of the felling notch. Leave approximately 1/10 the diameter of the trunk as uncut wood to act as a hinge.

How does the hinge work? Wood is very strong in tension. You can snap a small stick in the middle fairly easily. But you cannot pull a stick apart by grasping both ends and pulling. It takes only a relatively small amount of wood to act as a hinge and hold a tree upright.

Insert wedge(s) when they are necessary for directional felling. The placement of wedge(s) will also keep the tree from sitting back on your saw. Eliminating pinched saws and ensuring proper direction in felling trees increase production.

Step 6. Be sure others are not within two and one-half tree lengths' distance. Drive the wedge(s) until the tree starts to fall. Walk rapidly away along your escape route, then turn and watch as the tree falls, being especially careful of any flying debris.

Advantages to This Method

The advantages of using this felling technique include:

- 1) **Improved quality.** A wide notch of 90 degrees allows the tree to hit the ground before the notch closes, reducing the chance of pulled fibers and split logs.
- 2) **Better escape plan.** A correct hinge allows the faller time to double-check the escape route and to

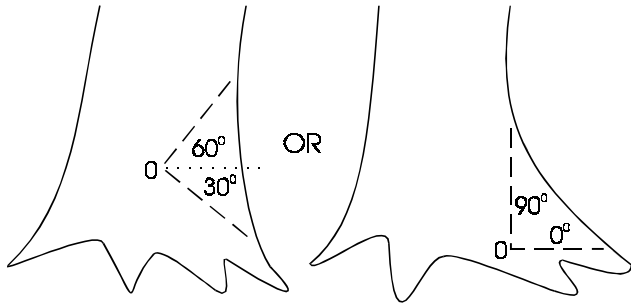


Figure 1. The top cut can be more than 60 degrees if the tree flares at the butt. This prevents the notch from entering the grade area of the log.

double-check that others are not within two and one-half tree lengths of the tree.

- 3) **Greater productivity.** Using wedges will greatly decrease the likelihood of pinching a saw. This benefit alone increases productivity in the woods. It also helps prevent damage to your saw.
- 4) **Better control of fall direction.** As long as the hinge is intact, it will control the direction of the tree fall. A properly cut hinge will not completely break until the tree hits the ground.

Other Considerations

Every tree is different, and every cutting site is different. As a tree faller, take into account these factors:

- the natural lean of the tree,
- whether the canopy is heavy to one side, and
- the amount and direction of the wind.

Sound trees are cut differently than rotten trees. All hinge wood should be sound because rotten wood has very little holding capacity.



Figure 2. A Tennessee Valley Authority harvesting specialist demonstrates how the open face hinge should operate.

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