



SAFE FIREWOOD HARVESTING



NJ Department of Environmental Protection
Division of Parks and Forestry Bureau of Forest Management

Harvesting firewood can be an enjoyable experience but it is also one of the most dangerous avocations in which one can be involved.

Most people operating chain saws are not professional wood cutters and, therefore, not familiar with safe chain saw operation and safety precautions.

Each year approximately 100 people are killed as a result of chain saw related accidents and, over 15,000 are injured to some degree. The chain saw is a high speed wood cutting tool which demands constant attention from the operator. Careless or improper use can quickly cause serious or fatal injury. In addition to this pamphlet, please read your owners manual and follow all safety precautions.

General Guidelines

Always be aware of the conditions in which you will operate your saw. Dead limbs, wind and slippery ground conditions are hazards of the forest that make chain saw operation all the more dangerous. Make sure that all equipment, vehicles, and people are at safe distances. Use caution when handling the saw near other people. Be alert, work calmly and methodically and never be in a hurry. Take frequent rest breaks to insure maximum strength and never operate the saw when you are fatigued.

Protective Clothing

Injuries can be prevented if you wear proper clothing and safety equipment:

- Hard Hat and Ear Protection
- Safety Glasses or Goggles
- Work Gloves
- Heavy Boots with good soles and steel safety toes
- Close fitting, comfortable clothing that allows complete freedom of movement. Never wear baggy clothes or allow anything to hang free such as scarfs or drawstrings

Chain Saw

Before entering the forest make certain your saw is in top (well maintained) running condition. It should be clean and free from accumulated debris. The engine must be well tuned to accelerate and idle properly. The chain must be kept sharp and properly adjusted. It should rotate easily on the bar but not be too loose. The guide bar does wear and should be routinely checked for straightness and wear. Safety devices are designed to prevent the most common injuries, so be sure they are in place and working properly [The chain saw can kick-back 7 times faster than your brain can react, with the saw chain traveling up to 55 mph]. You never know when your life will depend on the saw's safety features.

- Use a chain saw and guide bar length suitable to the thickness of the tree. The bar should be at least as long as half the diameter of the tree.
- Place the chain saw on the ground when starting the engine. Make certain the area around the saw is clear of debris and small shrubs when starting.
- Keep the cutting teeth sharp and the chain properly adjusted during the day.
- Take precautions when refueling and make certain that dirt does not enter the fuel or lubrication systems.



Felling

Check the locations of all people and equipment near you. Be sure that an area at least 1 1/2 times the height of the tree is clear of people and equipment before starting to fell the tree.

Inspect trees carefully for loose or rotten limbs. Vibrations from the saw may cause limbs to fall.

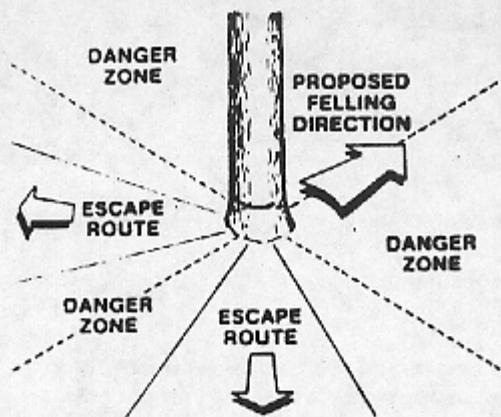
Check each tree for lean and balance. It is difficult to drop a tree in any other direction than the lean.

Be especially alert when there are windy conditions. The wind can push a tree in unexpected directions.

Examine the lower tree trunk for rot which could cause the tree to fall in the wrong direction.

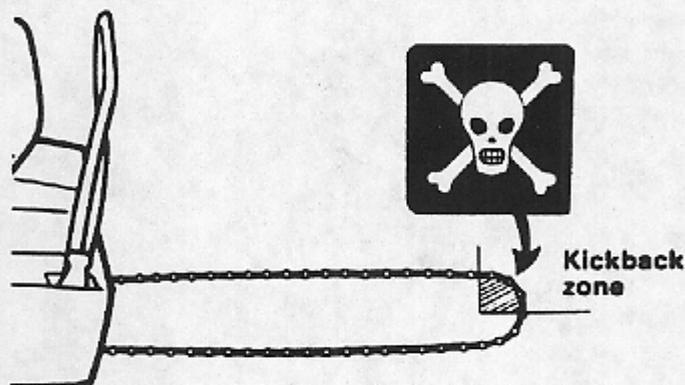
Clear work areas around the tree base of brush and debris for easy access and retreat.

Plan escape path away from the direction of the fall. Watch for the butt end of the tree which may kick-back as the tree falls.



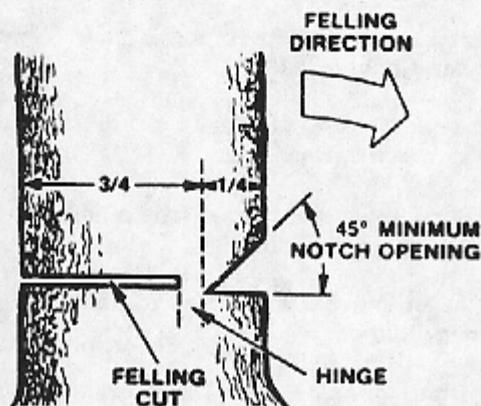
Make sure the saw is running at top speed before beginning to cut.

It is always best to cut using the bottom portion of the chain saw bar. Avoid sawing with the tip of the saw. This is the critical "kick-back" zone.



The first cut (undercut) is made on the side of the tree which faces the direction of fall. It should go at least 1/4 of the diameter into the tree, but no more than 1/2 way. A second cut (topcut) should be started one inch above the undercut and sloped so that it meets the undercut exactly allowing a wedge of wood to be removed.

The third cut (felling cut) should be started on the opposite side and about one inch above the undercut. Make your cut level and leave a break off allowance of an inch to act as a "hinge". This "hinge" guides the tree during the fall and helps prevent the butt from kicking out. Plastic wedges can be hammered into the felling cut to help prevent backlean and encourage the tree to fall properly.



Remember to keep your stumps as low as possible, 8" to 10" is a good guideline. This part of the tree contains the largest and densest pieces of wood (the best firewood). Low stumps make it easier for foresters to prepare areas for planting and to provide better fire protection.

Avoid cutting with the chain saw above your waist height, and never attempt to use a chain saw above your head.

If you hang up a tree in another, the safest way to get the tree down is to pull it away with a tractor or winch. DO NOT try to attempt to cut the tree in which the felled tree is lodged and DO NOT try to climb either tree.

Limbing

When limbing, always keep the tree trunk between you and the saw.

Concentrate on keeping the tip of the guide bar away from branches and limbs. The risk of a kick-back is greatest during limbing, when the guide bar tip accidentally hits a branch.

Cut branches flush with the trunk of the tree.

When tree branches are bent and wedged tightly against rocks, other logs, or the ground, great stresses result. Special attention should be directed towards these branches under stress, as they can cause binding of the saw, and upon release, can snap back with sufficient speed and power to cause injuries.

Bucking

Make sure the log is firmly in place.

Stand on the uphill side when working in uneven terrain.

If the log is supported on both ends by rocks or other logs, begin with a shallow cut on the top of the log and complete the cut from below. This will prevent the saw from binding.

If the log is supported on only one end, and the other end hangs freely off the ground, begin with a shallow cut from below and finish cutting through the log from above.

FIREWOOD FACTS

A standard cord of stacked firewood measures 4' x 4' x 8'. Of this 128 cubic foot volume, the average cord contains only 80 cubic feet of wood.

All trees vary in density and therefore weight, but a good estimate of weight for a cubic foot of green wood is 50 lbs (40-70 lbs) and 40 lbs (30-50 lbs) for dried firewood.

Sources

Bissell, Lewis - Hints for the Safe Harvest of Fuelwood, University of Maine, Cooperative Extension Service Forestry Notes, October 1975.

Husqvarna - Work Technique for the Occasional Chain Saw User.

Stihl - Chain Saw Safety Manual.