



Chainsaw Safety Tips

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The chainsaw is commonly used to fell, de-limb and buck (cut into sections) trees. Each of these three operations requires a different method of using the chainsaw. This publication gives some tips on the safe use of your chainsaw for these operations.

Shopping for a Chainsaw

The first and possibly most important step to safely operating a chainsaw is to select a saw that fits your needs and is quiet, balanced and equipped with the following safety features. (See the list below.) It is important to remember that these safety features do not replace proper training, safe operating practices and common sense.



Figure 1. Some basic chainsaw safety features include a hand guard and chain brake, bumper spikes and a stop switch.



When shopping for a chainsaw, look for these modern safety features:

 The **front hand guard** is a bar in front of the top handle designed to stop a slipping hand from coming in contact with the chain.

 The **chain brake (gasoline only)** is designed to stop a moving chain in a fraction of a second if kickback occurs, reducing the chances of severe injury. It may also function as the front hand guard. If available, see the operators' manual for proper adjustments.

 The **throttle trigger interlock** prevents the accidental opening of the throttle. The throttle trigger is locked in the idling position when the lockout is not engaged by the proper hand grip on the handle.

 A **stop switch** should be located so that it can be activated easily by your right thumb without losing your grip on the rear handle of the saw.

 The **rear hand guard** on the rear handle of the chainsaw is designed to protect the hand from a broken or jumping chain.

 A **chain catcher** is designed to catch a broken or jumping chain.

 An **adjustable oil pump** adjusts oil to the chain based on the blade length and type of wood being cut.

 **Vibration dampeners** (rubber bushings between the handle and saw body or on the engine mountings) help reduce the operator's exposure to vibration.

 The **muffler** is designed to decrease the noise level and direct hot exhaust gases away from the operator. This may be combined with the spark arrester.

 The **spark arrester** keeps sparks from being ejected by the exhaust. The sparks occur when carbon deposits in the cylinder break loose and are ignited by the exhaust gases. Spark arresters are required in many areas.

-  A **bumper spike** is used to rest the chain saw on wood as you are cutting to prevent kickback, especially when performing a buck cut.
-  An **anti-kickback chain** reduces the forces on the chain that cause kickback.
-  A **tip guard** at the end of the chainsaw bar helps prevent kickback.

The best saw is the one you can comfortably handle and is appropriate for the type of work you do most often.

Light-weight	good for occasional use: cutting limbs, firewood and small trees
Mid-weight	better for more frequent use
Heavy-weight	for PROFESSIONAL use only

Using a Chainsaw

-  **Start the Saw Carefully.** When starting the chainsaw, hold it firmly in place. Remove all loose debris and make sure the guide bar is not touching anything. Make sure the chain brake is engaged.
-  **Stretch and Strengthen Your Body.** Working with a chainsaw can put a strain on back muscles. Stretching and strengthening back muscles reduce strain.
-  **Wear the Right Clothes.** Choose clothing that is close-fitting but not confining. Wear steel-toe boots and a hard hat to protect you from falling branches. Use gloves to prevent cuts and burns and safety glasses to protect your eyes. **If you are going to be using a chainsaw for extended lengths of time, it is recommended that you also purchase a good pair of chainsaw safety chaps.**
-  **Have the Right Tools for Repairs and Maintenance.** Keep a wrench, screwdriver, sharpening file and a small sharpening gauge handy. You may also want to carry a wedge and a mall, sledge hammer or hatchet to help fell the tree in the right direction.
-  **If you are tired or under the influence of drugs or alcohol (including prescription medication), don't use your chainsaw.**
-  **Be Familiar with the Saw and All of Its Controls.** Be especially familiar with the cut-off switch. Know how to sharpen and lubricate the saw in the field and carry the correct gas-oil mixture for the saw engine. Read the user's manual if one is available; it is designed to help you learn about your saw and how to use it safely.

-  **Learn from Others.** The first time you use your saw try to pair up with an experienced chainsaw operator. Learn from experienced saw operators whenever possible.
-  **Never Use a Chainsaw By Yourself.** Make sure you are aware of the locations of all other people nearby, especially when felling a tree.
-  **Never Let a Child Operate a Chainsaw.** Never use a chainsaw in close proximity to a child. Keep all observers away from the work area when using the saw, especially when felling trees.
-  **Stay Low to the Ground.** Avoid using a chainsaw in a situation where it will be held higher than your waist during operation. It is much easier to get hurt when the chainsaw is held above your waist than when held below it.
-  **Avoid Cutting with the Tip of the Saw.** Kickback occurs when the tip of the saw bar contacts wood (or any other solid object) and is pushed away from the object when the chain hits at a certain angle (Figure 2). If your body gets in the way, the saw can cut into you. **Kickback is the leading cause of chainsaw injury.** Another way to minimize the danger is to keep your left elbow locked straight out when cutting. That way if the saw does kick back, your left arm will not bend and the saw will follow an arc that should miss your body.

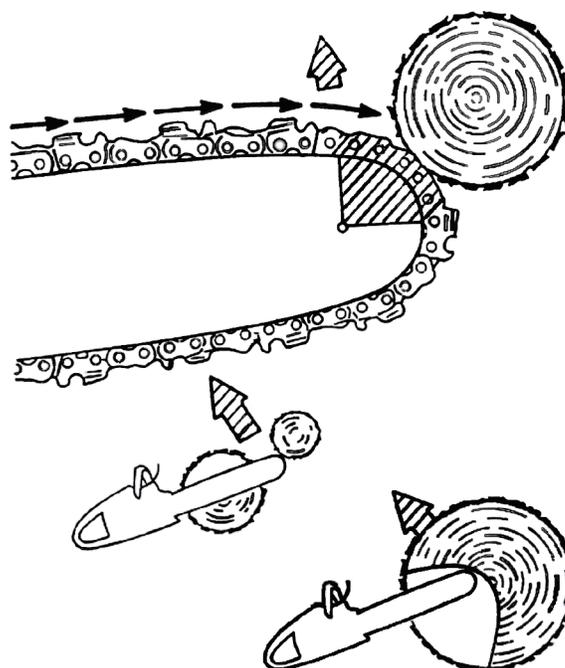


Figure 2. Kickback occurs when the tip of the chainsaw comes in contact with a solid object at the wrong angle.

Felling

If you own a chainsaw, you may eventually face the prospect of felling a standing tree to the ground. The following tips should help you drop the tree safely:

Before doing anything else, try to predict where the tree will fall. Note the direction in which the tree leans, the presence of any obstacles (other trees, fences, power lines, etc.), the amount and direction of wind (**Don't fell trees on a windy day!**) and the presence of dead limbs that might drop on your head when the tree is being felled. Make sure there are no other people near the tree who could get hurt.

Clear away brush or other obstacles from around the tree. **Make sure you have at least two paths away from the tree for an emergency exit before you start to cut.**

Start the first cut about 6 inches above the ground line. If the tree is large, make a V cut (also called the felling notch) about a third of the way into the tree on the side that the tree will most likely fall (Figure 3). After the first cut is made, start your felling cut directly behind the notch on the opposite side of the tree. Leave a hinge between the two cuts to slow the tree's fall and give you time to get out of the way. This is the most critical time because the tree may not fall in the direction you picked out. If this happens, be sure you are safe – broken chainsaws can be repaired.

Try to be several feet to the rear or one side of the tree as it falls to avoid being hurt if the trunk bounces off the stump. **Be careful of "stump jump," which can occur if the hinge is cut or breaks while the tree is falling.**

If the tree hangs up in another tree and will not drop, do not use your chainsaw to free the tree. The safest method of freeing a hung tree is to use a cable winch attached to a tractor to pull the tree down from a safe distance away. You can also use a block and tackle for this purpose. If you must leave the tree hanging, mark off the area with flagging tape so that others will be aware of the danger.

Another felling method is to make the hinge and felling cuts above the swell of the butt of the tree, then remove the remaining 12 to 24 inches after the tree is down and off the stump (i.e., a stick of firewood length above the ground level for felling).



If there is any question as to the safety of cutting down a tree, consult a professional. Tree felling can become dangerous around buildings, power lines and highways or when it becomes necessary to use ropes to control the tree felling.

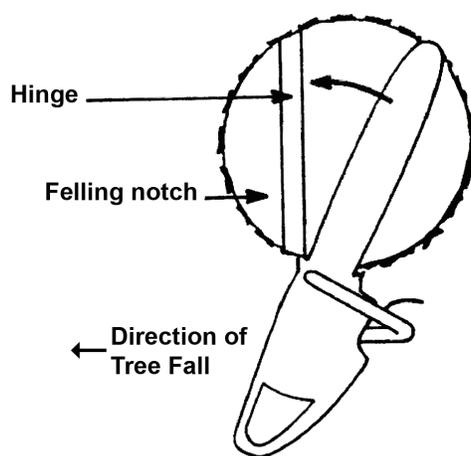
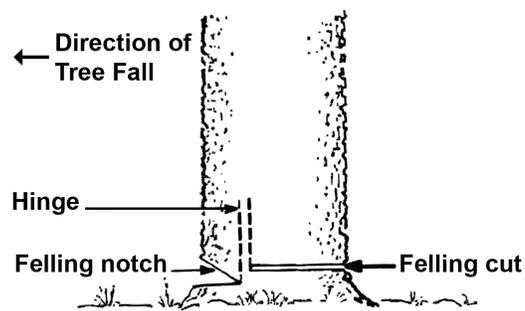


Figure 3. How to use a chainsaw to fell a tree.

De-Limbing

De-limbing (removing tree limbs with the chainsaw) is one of the most dangerous operations for a chainsaw user because the limbs are small and close together, the working area is confined and the operator is working with the saw close to his or her legs. To make de-limbing a safe operation, keep in mind the following suggestions:



Start at the butt or bottom end of the tree where there is more room to maneuver and work your way up to the top of the tree. This will increase your working space while de-limbing.



Keep both feet to one side of the tree as you work — preferably the uphill side in hilly terrain. Don't straddle the tree and don't over-extend your reach as you move up the tree. Keep the chainsaw in line with the side of your body as you cut.

 In firewood operations, trim the smaller limbs off and clear the path of brush. Then work from the top of the limb towards the juncture with the trunk. Limbs may be “lowered to reach” by making partial cuts. This also helps the operator keep the saw chain out of dirt and rocks.

Bucking

After the tree has been felled and de-limbed, it must be bucked or cut into sections. Consider the following suggestions when bucking timber:

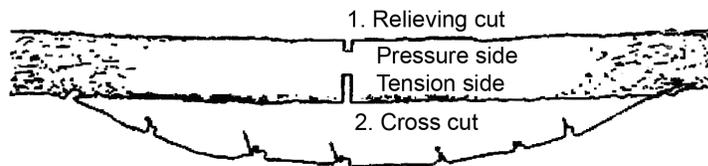
 When bucking the tree for sawlogs or pulpwood, you must cut the tree into specific lengths that are dependent on the type of product (pulpwood, chip’n’saw or sawlog dimensions) and particular requirements of the mill where the wood is to be marketed.

 When bucking for firewood, cut the tree into lengths that can be easily handled by one or two people.

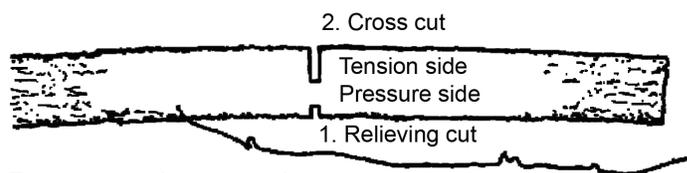
 Be sure to stand on the uphill side of the tree when bucking, since logs tend to roll downhill and can hurt you when you get in the way.

 To avoid pinching the saw when bucking, make two cuts. Where the tree is supported at both ends, make the first cut at the top (pressure side) about a quarter of the way through the trunk (Figure 4). Then make the second cut from below (tension side) directly in line with the first cut. When the tree is supported only on one side, reverse the procedure. Make the first cut from below (pressure side) about a quarter of the way into the tree. The second and final cut should be made from the top (tension side), directly above the first cut.

 When bucking wood into short lengths for firewood, use a sawhorse to support the wood (Figure 5). With a sawhorse, you don’t cut into the dirt with the saw and you reduce the danger of kickback. Using a sawhorse places you and the saw in a safe working position.



Tree supported on both ends.



Tree supported on one end.

Figure 4. How to avoid pinching your saw when bucking a tree.

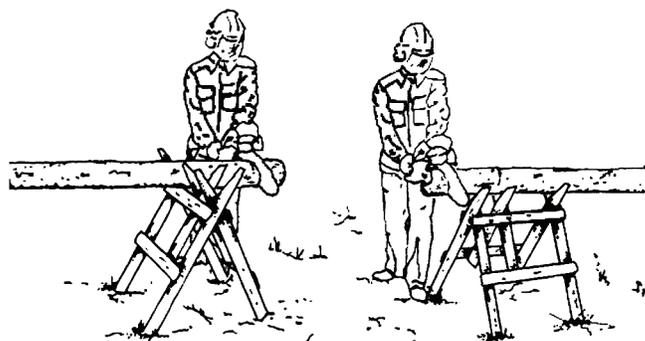


Figure 5. How to use a sawhorse to buck wood.

Learning *for* Life

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