

If a Tree Falls...

Cut a tree or clear storm damage. These are among the most dangerous jobs you do.

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PHOTOS BY ROB LAGERSTROM

When you cut down a tree you are doing work that even among professional loggers ranks as one of the most dangerous jobs in the country.

There is the chain saw. It is a valuable tool. With a chain running at up to 58 mph, it is also unforgiving. Chain saws cause 40,000 injuries and deaths a year. If you don't bleed to death, the average wound takes 110 stitches to close. Most injuries are to the left hand and left thigh. The head, neck and shoulders are also vulnerable.

Kickback is the worst. It occurs when the upper corner of the bar tip comes into contact with a log, branch, even brush. When it happens, you have a running chain saw that leaps back toward your face and shoulder. Uncontrolled, it will contact unprotected skin in less than the snap of your finger. If you're out of position—reaching over your shoulders, leaning over the saw or unbalanced—the chain break may not engage in time.

Then there are injuries from the tree. The most dangerous tree is 8 inches in diameter. When you are cutting down a tree, a common mistake is figuring the fall by the lean of the trunk. The fall is determined by the lean of the crown. Trees are heavy; a 24-inch-diameter oak weighs 5 tons. A cord of pine logs weighs 3 tons. A widow-maker—a falling branch—from only 2 inches away can kill you.

"Don't underestimate the risk," says Tim Ard (right). A nationally known chain-saw expert, he is president of Forest Applications Training Inc. and a demonstrator for Husqvarna, a manufacturer of chain saws. "Have a plan. A good plan keeps unplanned events from happening." A good plan also means hiring a professional if you are unsure about the job.

You will find loads of tree-cutting information by doing an Internet search on "chain-saw safety," "logging" and other terms. Ard also offers good information at his web site, www.forestapps.com. *Report from Boyd Kidwell*



How to cut a leaning tree

One of the most difficult challenges any tree cutter has is to cut a leaning tree, do it safely and make it fall where you want it. The following technique keeps the falling tree under control. The boring technique shown in step 2 must be done with extreme caution to avoid kickback. But cutting down a leaning tree this way makes the job as safe as it can be, and it gives you the most control over the fall.



1

The first step is making a notch. To start the notch, make your first cut on an angle of at least 70 degrees, as shown in the picture on the left. Cut the bottom portion of the notch slightly upward and to a point where both cuts meet exactly. The width of the notch should be about 80% of the tree's diameter.



2

Start the "bore" cut with the bottom tip of the chain bar. Push the saw through the trunk. The bore cut is made to create the all-important hinge. The width of the hinge equals 10% of the tree's diameter. With a 10-inch tree, the hinge should equal 1 inch. The bore cut is made parallel to the wedge. Do not cut all the way through the tree. The piece of trunk left between the bore cut and the back of the tree holds the tree in place.



3

Position yourself behind the tree. Make the final cut from the back side of the trunk through to the bore hole. As the tree begins to fall, move 25 feet away from it, on a 45-degree angle from the intended fall of the tree. Don't run.



4

The hinge for this tree was 8 inches in length and 1 inch in width, based on a 10-inch-wide trunk. The hinge prevents the trunk from kicking backward. It also controls the fall of the tree until it is almost or completely on the ground.

Get the tree on the ground

Clearing storm damage is a risky job. A tree that has fallen onto your home or onto another tree is unstable. It can suddenly fall to the ground, or it can roll on top of you.

The general strategy is this: Put the tree on the ground in sections (**No. 1, right**). Here are other good cutting tips.

▶ Look for hazards. Is the tree hanging in the branches of other trees or vines? Where are the power lines? Look too for seriously upset bees and hornets.

▶ Judge which way the tree might roll. Work on the opposite side.

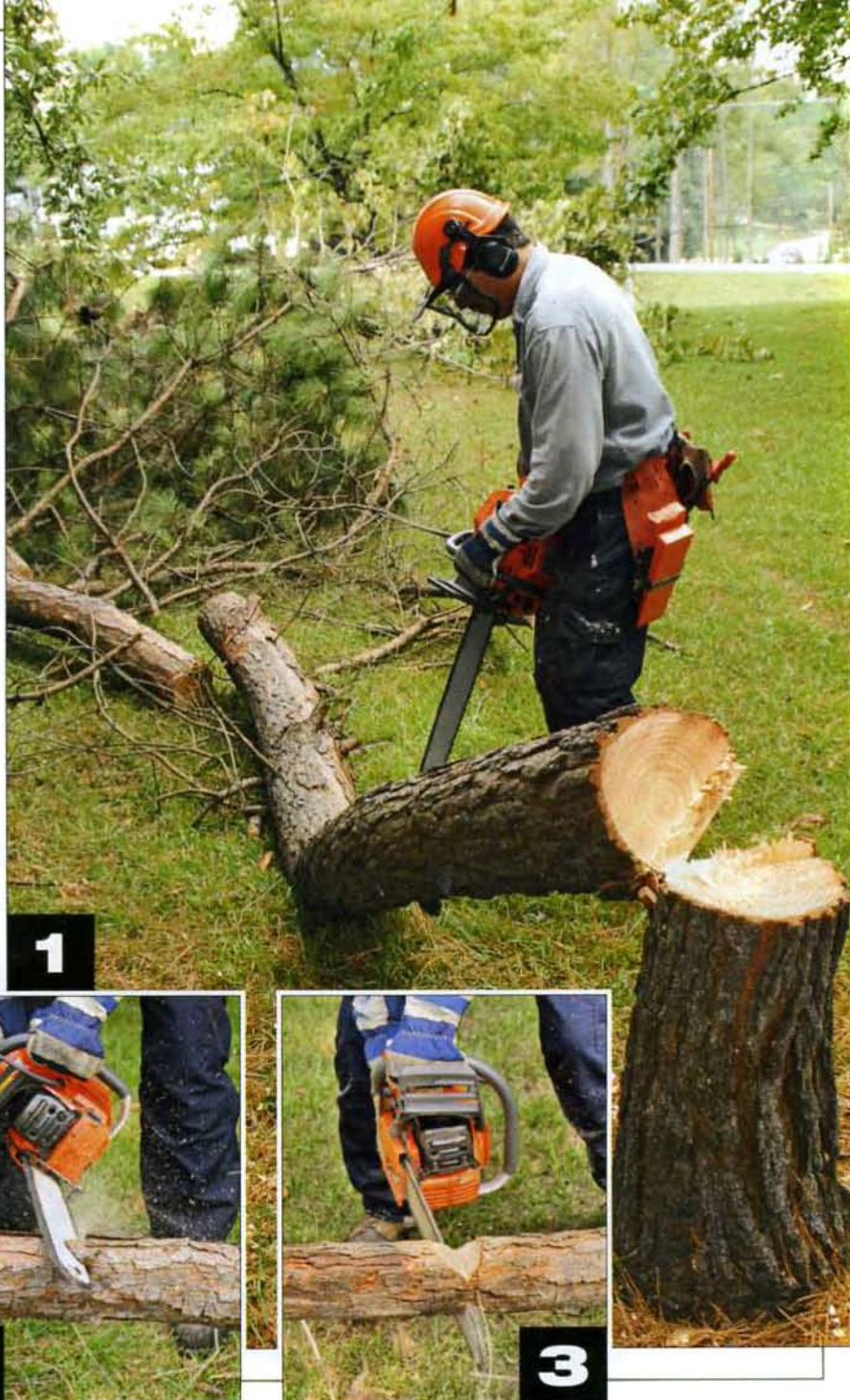
▶ Cut the trunk into sections. Begin at the stump and work toward the crown. Remove every branch along the way.

▶ Whether cutting the trunk or removing branches, understand the forces of compression (the side on which a branch or trunk will close) and tension (the side on which they break or tear).

▶ Assume all branches support weight.

▶ Use compression and tension to your advantage. On the compression side cut a notch (**No. 2**). On the side under tension, cut toward the notch, but offset it slightly from the notch's apex (**No. 3**).

▶ If the job makes you nervous, hire a professional.



Before the first cut

Here are four steps to create a safe work area.

1. Select a clear place for the tree to land. A tree hanging off the ground can be extremely dangerous.

2. Judge the lean of the tree by looking at the crown. If the lean angle won't allow you to drop the tree where it needs to land, don't start cutting. Be extremely wary of dead trees that can fall in unpredictable directions.

3. Identify all the hazards. These include wind, ice, snow, loose branches, power lines and buildings, bees and hornets.

4. Plan an escape route. This path should lead away from the tree at a 45-degree angle in relation to the tree's intended fall. Clear the route of clutter. Be prepared to move quickly for at least 25 feet before stopping. As you leave the falling tree, remember to engage your chain brake or shut off the saw.

The right gear

Without head protection, even a small branch falling from a tree is a spear that will put you on the ground—if not kill you. This is Husqvarna's Pro Forest Helmet (all equipment shown here is from Husqvarna). The helmet is UV-protected and features an adjustable six-point suspension system. It includes hearing protectors, a face screen and a rain neck protector. Even with the shield don't forget goggles. PRICE: \$43.95 (helmet); \$9.95 (goggles)

A heavy, long-sleeved shirt—this one is from Wal-Mart—helps protect the upper body from flying debris, but it provides no protection against a running chain saw. Shirts and jackets woven with ballistic nylon and Kevlar are designed to jam a moving chain (see products below). PRICE: \$10.99

These chain-saw protective mitts borrow from the design of mittens. The thumb and index finger have separate slots. The other fingers are grouped into one pocket. There is extra protective material added to the back of the left hand. The design improves the grip. PRICE: \$21.95

Leg injuries are the leading result of chain saw accidents. These Pro Forest Wrap Chaps have chain-saw protection on the front, sides and along the full calf. PRICE: \$69.95

A boot offers protection from the saw and from falling objects. At a minimum, boots should be leather, have a steel toe, thick rubber soles and instep protection. PRICE: Varies

More safety apparel



Pro Forest Jacket. Mesh ventilation; six layers of chain-saw protection in shoulders, upper back and chest areas. PRICE: \$89.95



Pro Forest Shirt. Protection in arms, upper chest, upper back and shoulders; mesh lower body. PRICE: \$64.95



Pro Forest Protective Pants. Chain-saw protection is a multiple-layer warp knit blend for the front, sides and calves. PRICE: \$89.95

