

Cutting Down Chainsaw Mishaps

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From trimming trees to clearing fallen branches, there is no quicker way to get the job done than with a chainsaw. Unfortunately, there's also almost no quicker way to get injured. Chainsaws rank among the most dangerous power tools on the market. The potential risk of injury increases after tornadoes, hurricanes and other natural disasters, when those unfamiliar with safe chainsaw operation fire one up to clear storm damage. A chainsaw's chain moves anywhere from 50-80 mph at full throttle, cutting through the thickest branches with ease. Just imagine what it can do to fingers or toes following a moment of distraction.

According to the Centers for Disease Control and Prevention, about 36,000 people are treated annually in hospital emergency rooms for chainsaw-related injuries. The legs and knees account for about 36% of those injuries. An additional 36% of injuries occurred to hands, 10% to the head, 9% percent to the upper body and 7% to feet. The average chainsaw injury requires 110 stitches, and total medical costs exceed \$350 million annually. To comprehend

how these mishaps occur, one must understand the basic procedures to follow during chainsaw operations.

Felling

Felling is the act of cutting down (or dropping) a tree. Before even starting your chainsaw, look at what you plan to cut and evaluate where it will fall. Plan for a safe place to stand as the tree falls and make sure others are outside the danger zone. A good rule of thumb is to keep everyone at a distance of twice the height of the tree you intend to fell. Plan a clear avenue to escape, removing any obstacles or debris that may block a quick retreat. In the event things don't go as planned, move away from the trunk at an angle, as falling trees tend to kick straight back.

Limbing and bucking

Limbing and bucking is the process of cutting a tree into workable pieces once it is on the ground. Just because the tree is down, however, don't let your guard down. Taking off the limbs (limbing) and cutting the tree into manageable pieces (bucking) still require caution. Always work on the uphill side when cutting. Also determine how the tree is balanced and anticipate its movement prior to removing a supporting branch.

Binding, kickback, pushback and pull-in

Binding, kickback, pushback and pull-in are dangerous situations you face when cutting. In any of these situations, the operator loses control of the saw, vastly increasing the chance of injury. Binding (or pinching) occurs when the material you're cutting clamps down and stalls the chain inside the cut. Binding can lead to kickback, pushback and pull-in. Be aware how the weight of the branch or log can shift and bind the saw when you are cutting. Learn cutting techniques that help avoid binding. The proper use of an appropriate felling and bucking wedge can also help prevent binding.

Kickback occurs when the saw tip touches an object or when the branch or log you're cutting pinches the blade. This causes the reverse action of the guide bar, throwing the saw up and back toward the user. A saw cutting at full throttle can kick back in one-tenth of a second — faster than the average human can react. To minimize kickback, never cut with the saw's tip. Always make

sure you know the position of the saw tip. The upper part of the tip is the area most prone to creating kickback. Also consider how cutting the branch or log can cause the weight to shift, potentially pinching the saw.

Pushback occurs when the chain at the top of the bar stops suddenly due to pinching or contacting a foreign object while cutting. Pushback instantly sends the saw back toward the user, sometimes violently. Minimize pushback by being aware of possible shifts in weight of the material you're cutting that can bind the saw. Cut only one branch or log at a time. When undercutting, draw the blade out of the cut without twisting it.

Pull-in occurs when the chain at the bottom of the bar stops suddenly due to pinching or striking a foreign object, immediately drawing the saw — and possibility the operator — forward. To help minimize pull-in, set bumper spikes against the branch or log you're cutting and make sure you cut only when the saw is up to full speed. Be aware of weight shifts or situations that can bind the saw.

Other tips

It's also a good idea to be aware of the effects of gravity on the wood you are cutting. Gravity will cause a log to bend when it is being cut, resulting in compression and tension in the cut area. Compression can lead to binding of the saw, and tension can cause the wood to spring out when released. Always follow the manufacturer's instructions for use, maintenance and safety, including safety gear. In addition, consider taking a course in chainsaw use and safety.

Personal protective equipment

Before even thinking about cranking a chainsaw, ensure you have the proper protective equipment, including:

- Leg protection such as chaps or cut-resistant pants
- Safety helmet/hardhat to protect against kickback injury and flying debris
- Protective eyewear such as safety goggles or a face shield (Goggles are the minimum eye protection you should wear. However, a full-face shield is even better to protect the rest of the face from flying objects.)
- Heavy-duty gloves (Thick gloves are essential in protecting the hands from injury and debris in case of a slip or chain break. A good set of gloves will also give you a better grip on the chainsaw.)
- Hearing protection such as earplugs or earmuffs
- Heavy-duty work boots (Rigid and heavy work boots are critical when using a chainsaw because things tend to fall when you cut them. If you drop a log on your foot, that is going to hurt! Hard, rigid boots can also protect your feet in the event you lose control and drop the chainsaw. Steel-toed boots are the best and offer excellent protection.)

It's also crucial you read the owner's manual carefully before operating a chainsaw. The following list is not all-inclusive, merely a reminder to keep safety first in your mind at all times.

Do

- Keep the cutting area clear of spectators and pets.
- Work with a partner if possible.
- Avoid overhead hazards such as dead, hanging limbs that may fall and utility lines.
- Keep the chain clean, sharp and lubricated with the correct oil.
- Make sure the chain oil supply is full before starting the saw.
- Be careful of inclines and uneven ground.
- Stand to the side of what you're cutting.
- Cut at full throttle; bring the saw up to speed before starting cuts.
- Use a suitable cord when operating an electric saw. Follow the saw manufacturer's instructions for selecting a compatible cord.
- Keep both hands on the saw handles.
- Cut branches as close to the base of the blade as possible.

- Watch the wood as you're cutting. If you see the cut start to pinch the chain, stop cutting and rotate around the wood or rotate the wood itself. A pinched chain can cause kickback.
- Let the saw come to a complete stop before reaching for the chain or bar.
- Turn off the saw or activate the chain brake when carrying the saw.
- Carry the saw so that the bar is pointing behind you.

Don't

- Wear loose clothing.
- Use an electric chainsaw in rain or a wet or damp area.
- Use the tip to cut. This can cause a kickback of the blade and may strike your face or body.
- Take your eyes off the chain while cutting.
- Let the chain touch the ground or hit dirt while sawing. It will dull the chain and won't cut very well.
- Cut with a chainsaw above shoulder height.
- Refuel a hot saw.

If a storm, whether it be a hurricane, tornado or blizzard, causes damage to trees in your area, keep the safety tips above in mind. Safe operations will help cut down chainsaw mishaps!