

Chain Saw Safety

The cutting power that makes chain saws so useful also makes them dangerous. The saw can cut the human body with the same ease that it cuts wood. That is why the most important safety factor in chain saw use is the attitude of the user. This fact sheet summarizes chain saw safety precautions, but the effectiveness of these precautions will depend on the user's commitment to safety.

Manufacturers' manuals provide more specific safety information than this fact sheet. Therefore, the first precaution is to learn, and follow, the manufacturer's instructions.

Equipment

The frequency and severity of chain saw accidents has led to development of equipment safety features. The following features of state-of-the-art chain saws could protect you from serious injury.

- **Hand Guard.** Bar in front of forward handle to keep left hand from slipping onto the chain.
- **Chain Brake.** Designed to stop the chain in a fraction of a second if a kickback occurs. The brake can also serve as a hand guard.
- **Safety Tip.** Covers the chain as it passes around the nose of the bar, reducing the chance of kickback by keeping the chain from contacting anything at the guide bar tip.
- **Special Saw Chains and Guide Bars.** Designed to reduce kickback.
- **Trigger or Throttle Lockout.** Guards against inadvertent saw chain motion.
- **Chain Catcher.** Guards against injury in case the saw chain breaks.
- **Spark Arrester.** Keeps sparks from being ejected by the exhaust.



Photo credit: Karen Dodge

Tim Trask, of J & L Tree Service, Greenfield, MA

These safety features reduce the danger of accident, but do not eliminate it. Most accidents are still caused by "pilot error."

Protective clothing can be decisive in preventing injuries or reducing their severity. The following are essential to safety:

Clothing

- Hard Hat
- Face Shield or goggles
- Heavy duty gloves
- Steel-toed shoes
- Earmuffs or earplugs
- Ballistic nylon or protective shields worn over lower leg and knees

In general, clothing should be trim and close-fitting. Shirts should be long-sleeved and buttoned in the

front and at cuffs. Pants should have a smooth finish and no cuffs. No loose jewelry or scarf should be worn and no exposed key chains or tools should hang from the belt.

Insect repellent helps prevent infectious bites and permits full concentration without distraction by insects. Do not spray insect repellent on hard hats or goggles because it may weaken the shell or melt plastic.

Keeping a chain saw in tip-top condition increases safety both by preventing dangerous equipment failure and by ensuring efficient cutting.

Maintenance

The more efficiently the saw cuts the wood, the less likely it is to cut the operator. If the operator has to struggle with the saw, he or she will be more prone to accidents.

(Over)



To maintain the saw for safe operation:

- Follow the manufacturer's instructions to keep the saw sharpened with teeth set at proper depth and angle. Dull or improperly sharpened teeth can make the saw more difficult to control.
- Keep the chain adjusted with proper tension.
- Set the chain brake to proper adjustment.
- Make sure all bolts, nuts and screws (which are easily loosened by operation) are tight.
- Set the idle speed so that the chain does not move when the saw is idling.
- Turn off the saw when making adjustments.
- Periodically clean sawdust from the saw, especially prior to fueling.
- Constantly check to see if the chain is properly oiled.
- Never operate a saw without a muffler.

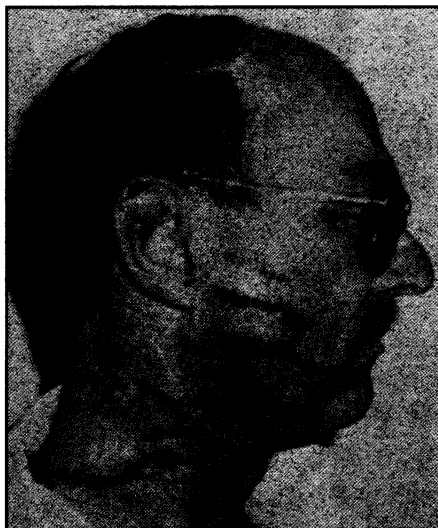
Transportation

- Keep chain guard on saw when it is not in use, especially when transporting.
- Shut off the saw before carrying long distances. For moving at cutting site, make sure the chain does not move while the saw is idling.
- When carrying, hold the saw firmly at your side, cutting bar to the rear. Keep hot muffler to the outside.
- Never transport a chain saw in the passenger area of a vehicle.
- To avoid vaporization and reduce fire hazard when transporting a chain saw, it should be either completely drained or completely filled.
- Saws not in use for extended periods should be drained into an approved container and run until residual fuel is used up.

Fueling

- Fill the fuel tank on the ground, away from combustible materials, with engine shut off.
- Let the saw cool before refueling.
- Use funnel or flexible nozzle to prevent spilling.
- If fuel is spilled, thoroughly clean

Please Be Careful!



This injury, which required more than 100 stitches, was caused by chain saw kickback.

the engine before starting.

- Never smoke while handling gasoline.

Starting

- Move well clear of fueling area (minimum 10 feet).
- Place saw on cleared, debris-free area.
- Firmly grip the handle at the top of the saw with the thumb wrapped under the handle and pull the cord with the other hand. (Some models may be further steadied by placing a foot through the rear hand grip.)
- Never start the saw while it is balanced on your leg or knee.
- While small chain saws can be drop-started (holding the saw with one hand and the starter cord with the other, then suddenly lowering the saw), this method is dangerous and is not recommended.
- Never allow another person to assist in starting; if either person slips or lets go, injury may result.

This publication has been reprinted with permission from The Bridge Fact Sheet, Summer 1991. The information was drawn from a wide variety of publications. The Bridge is a publication of the Transportation Technology Transfer Center at Michigan Technological University.

Kickback

Chain saw kickback can result in death or severe injury. The force of the saw chain striking an object throws the saw violently back toward the operator, sometimes with disastrous results.

Kickback can occur when the saw chain around the tip of the guide bar touches any object, such as a nearby log or branch. Striking a hard section of wood or an object (nail, bolt, stone) can also cause kickback.

Kickback can also occur when the wood being cut closes in and pinches the saw chain in the cut.

To avoid kickback:

Select chains and guide-bars designed to minimize kickback.

Don't touch the tip of the bar to any object while the chain saw is running. Make certain there are no obstructions with which the nose of the bar will come into contact during cutting operations.

Always hold the chain firmly with both hands in the proper grips.

Used a well-balanced stance.

Avoid cutting limbs above your mid-chest height.

Avoid boring cuts if possible. If a boring cut is necessary, take a very firm grip and use extreme caution to counteract any kickback reaction.

Use wedges to avoid pinching the bar when cutting larger pieces.