

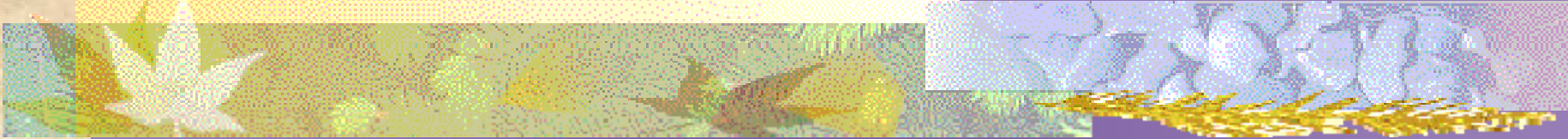
How to Operate Chain Saws Safely



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Institute of Food and Agricultural Sciences



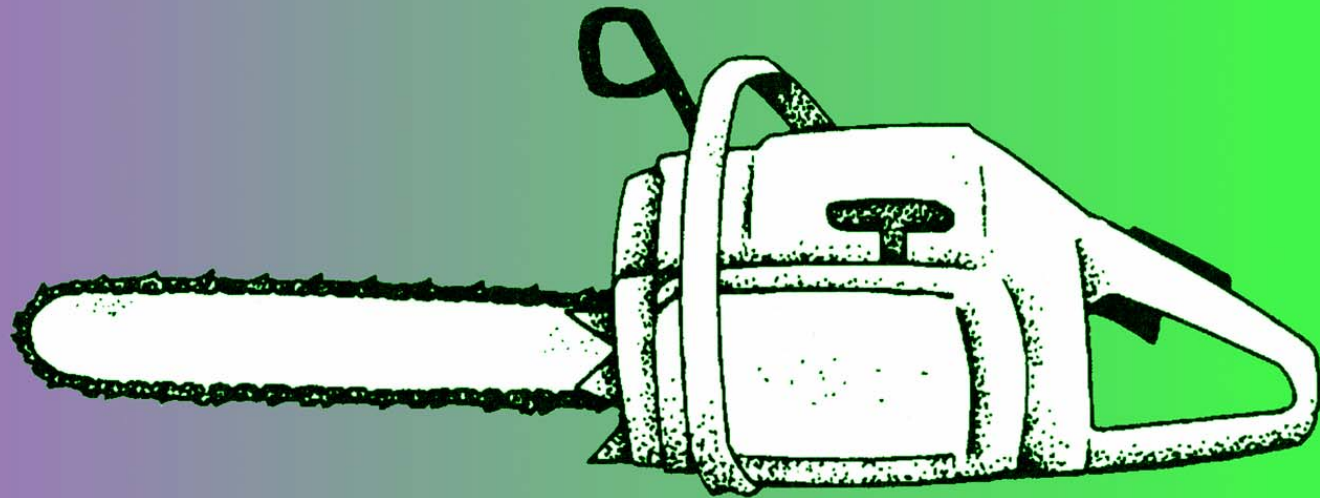
How to Operate Chain Saws Safely

Leanna Bass, Charles M. Brown,
and Carol J. Lehtola

April 2001



Over 40,000 people are
injured by chain saws
every year...

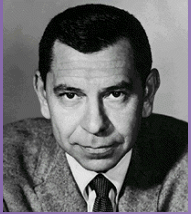


How not to be one of them!

Chain Saw Statistics



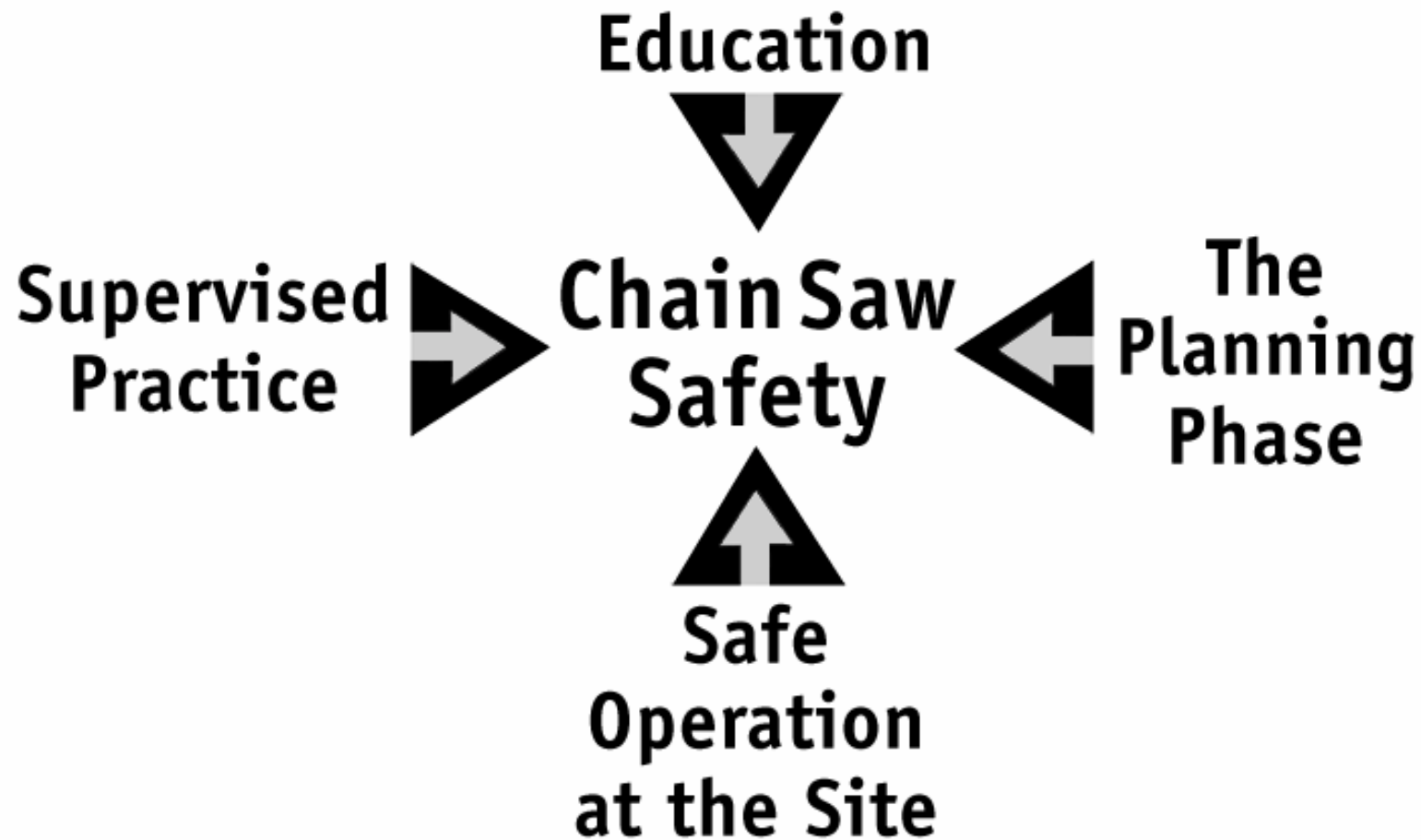
- More than 40,000 people are injured by chain saws each year.
- The two most common places for injuries are the front left thigh and the back of the left hand.



Just the Facts...

- When a chain saw is at full speed, more than 600 teeth pass a given point per second.
- One in 5 chain saw injuries are from kickback.
- A muffler on a chain saw can reach as much as 900 degrees F.
- A chain saw chain can move up to 68 miles per hour.

Four Steps to Prevention

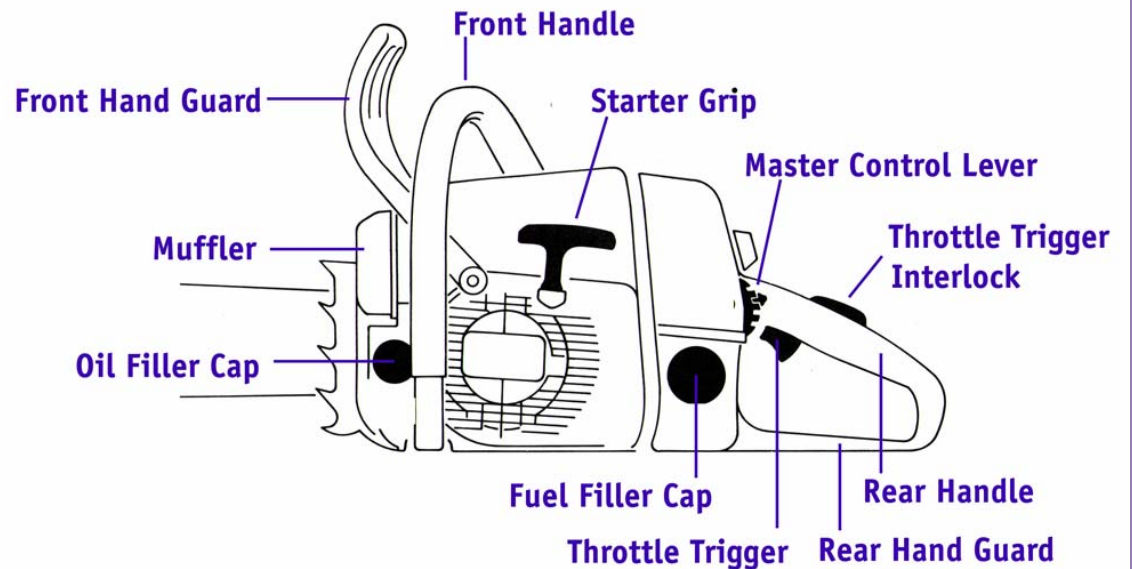
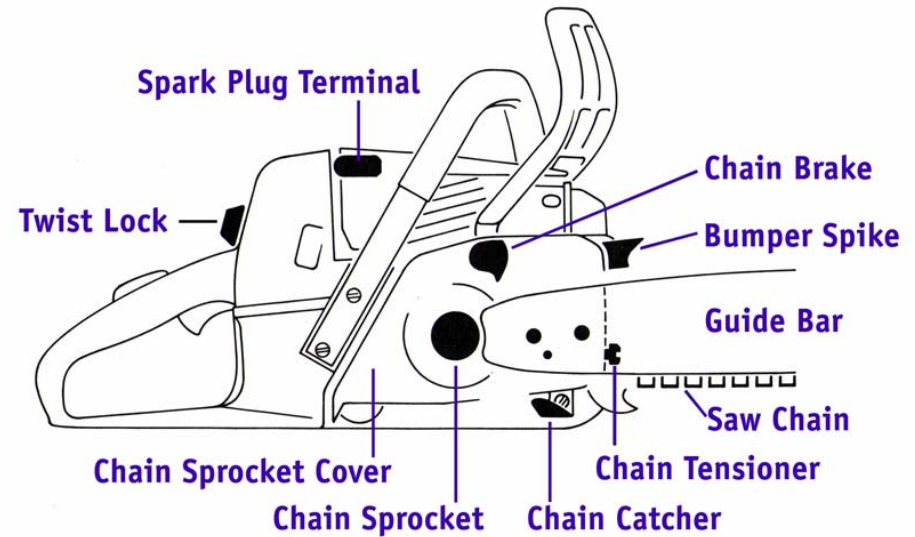




Don't Skip a Step

Take all four steps to
make operation of a chain
saw a safer experience.

Parts of a Chain Saw

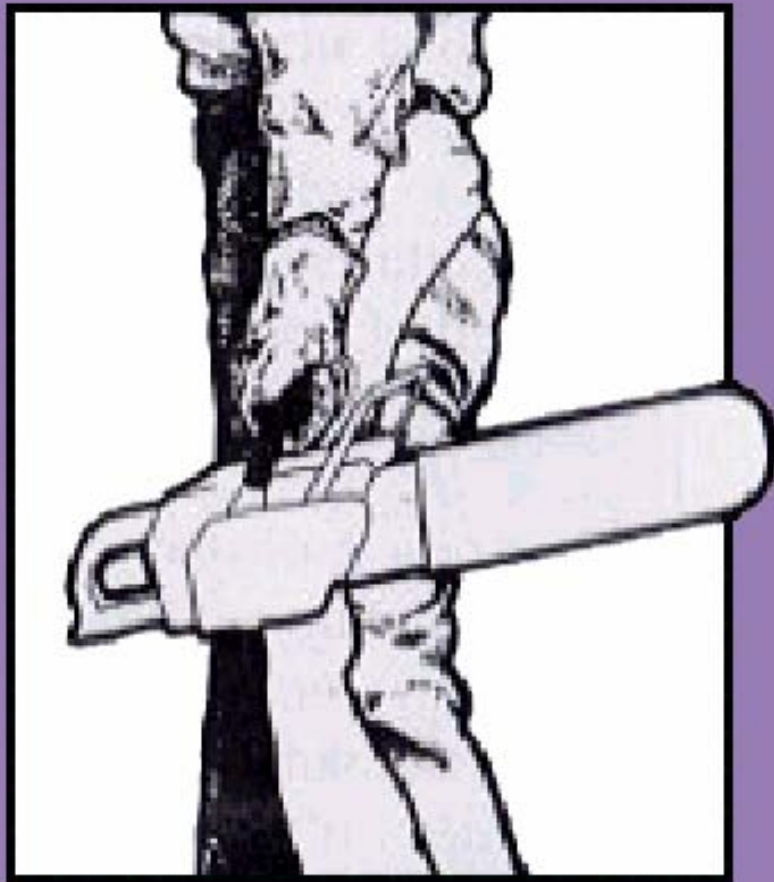




Look for these safety features

- Low kickback saw chain
- Hand guard
- Safety tip
- Chain brake
- Vibration reduction system
- Spark arrestor on gasoline models
- Trigger or throttle lockout
- Chain catcher
- Bumper spikes

How to Carry a Chain Saw

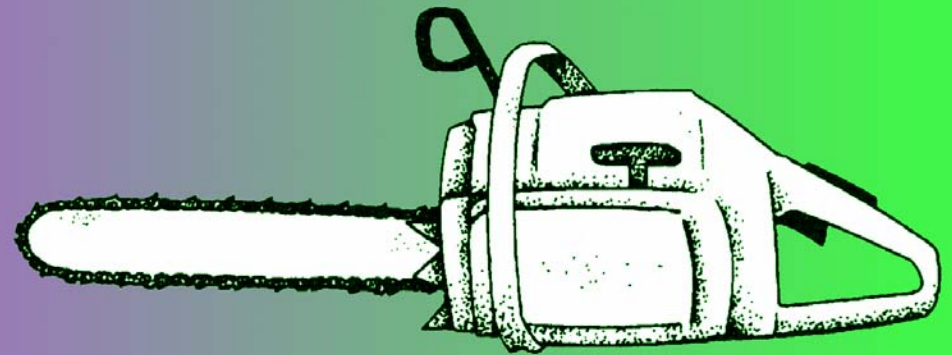


- The engine should be shut off.
- The chain brake should be engaged.
- The scabbard is covering the guide bar to prevent cuts.
- The chain saw is carried backward.
- The muffler is carried away from the body to prevent burns.



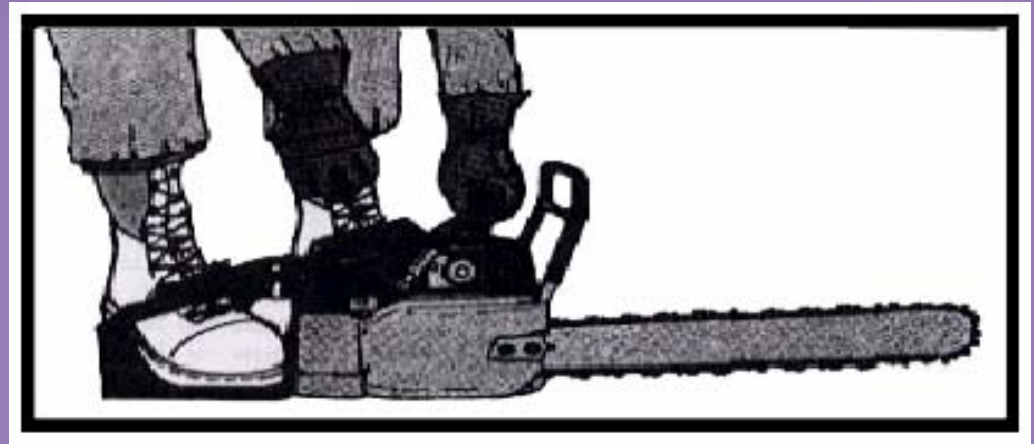
Chain Saw Operations

- Starting
- Limbing and Bucking
- Felling



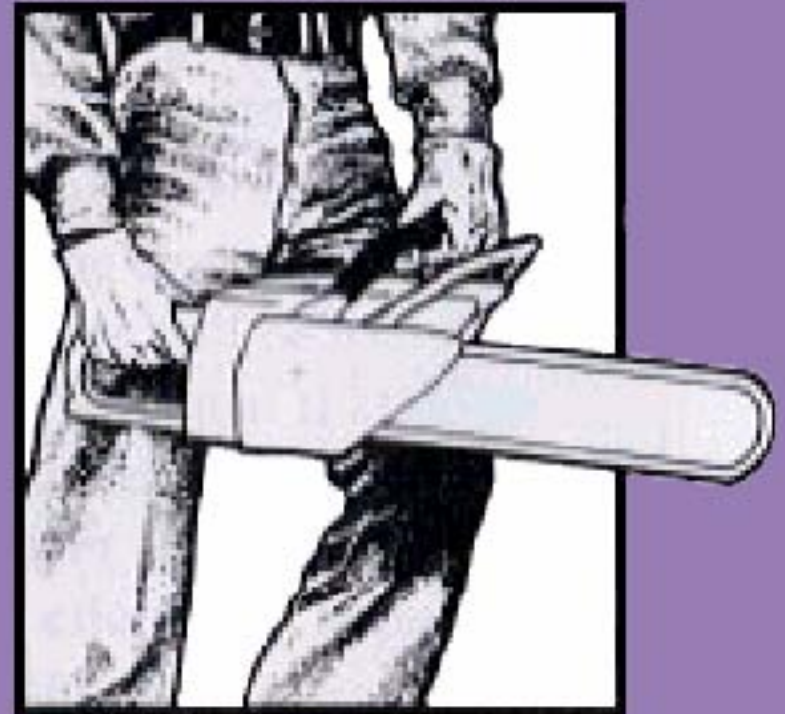
Correct Starting

1. Hold the chain saw firmly in place.
2. Remove all loose debris and make sure the guide bar is not touching anything.
3. Make sure the chain brake is engaged.
4. Grip the front handle with left hand.
5. Depress the throttle for one second with the right hand.
6. The chain should not creep forward because the brake is engaged.



How to Hold a Chain Saw

1. Keep your thumb under the bar.
2. The right hand should be firmly on the rear handle, so that the operator can reach the throttle latch and the stop switch.

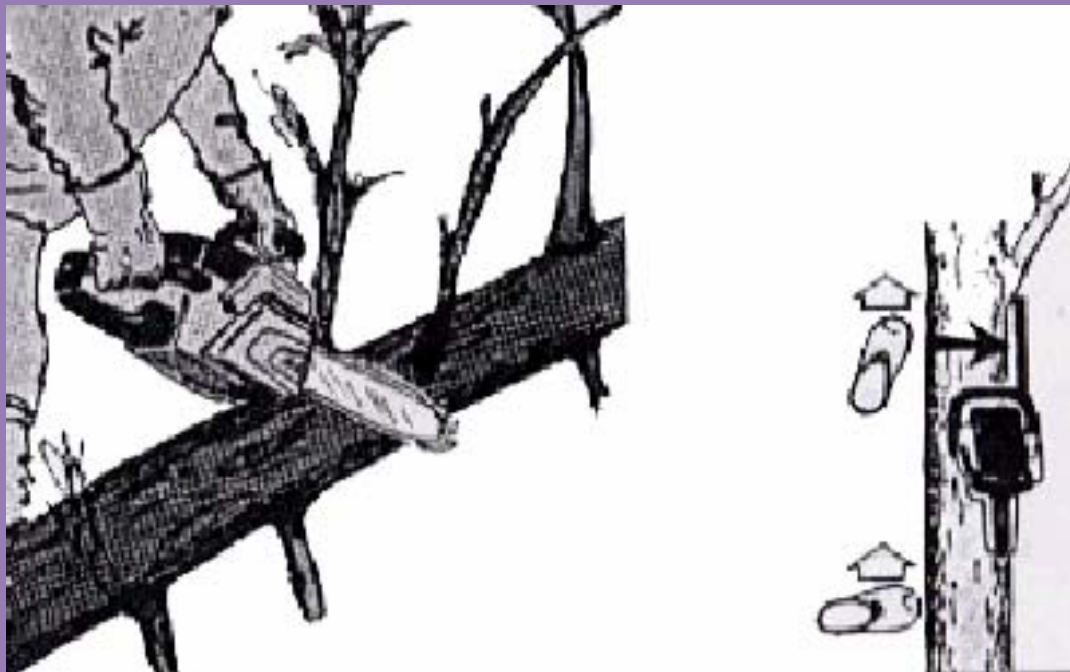


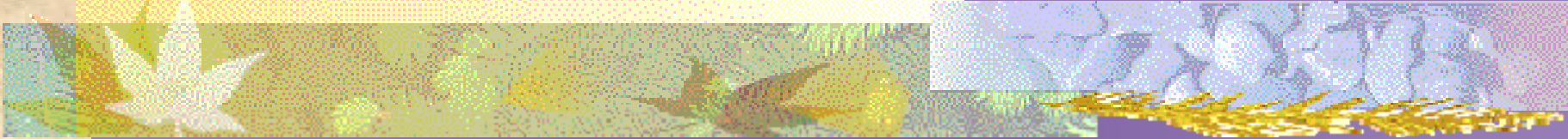
Quick Fact: Eighty percent of chain saw injuries are to the legs and hands.



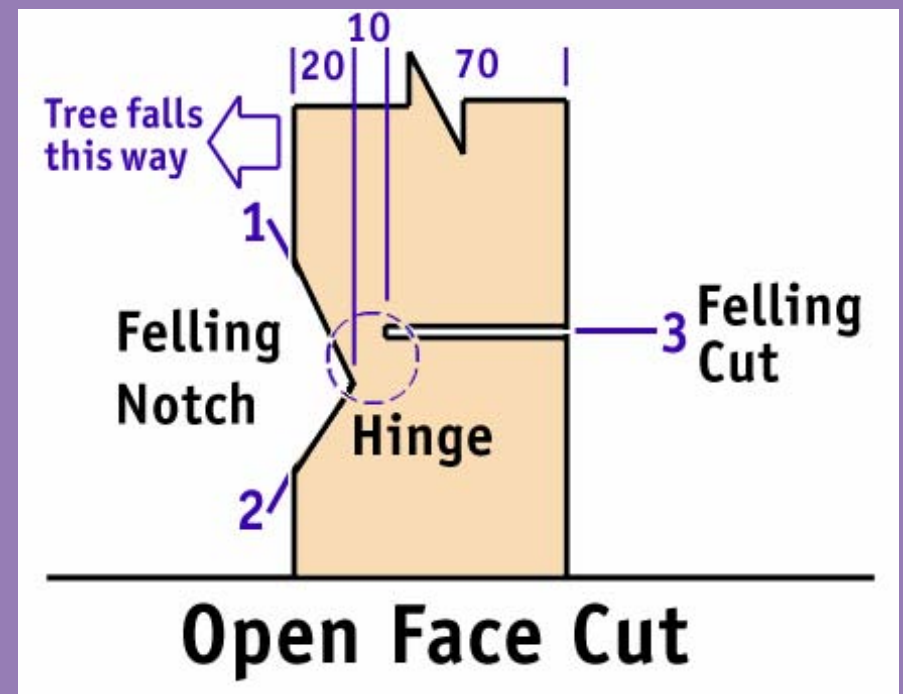
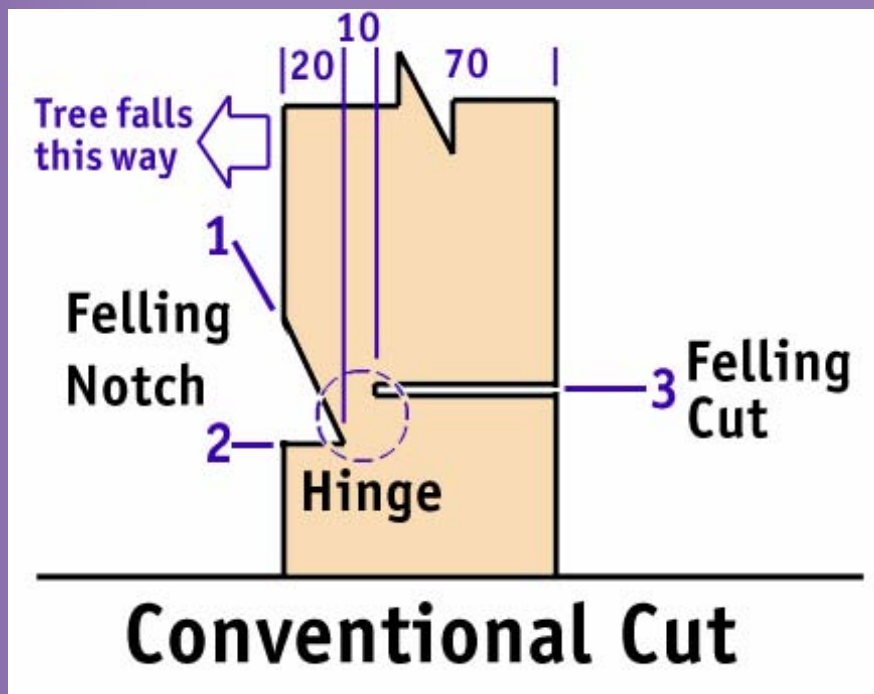
Limbing and Bucking

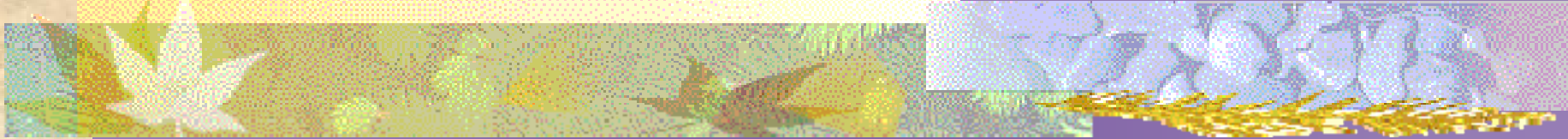
- Limbing is removing branches from fallen tree.
- Bucking is cutting a log into sections.





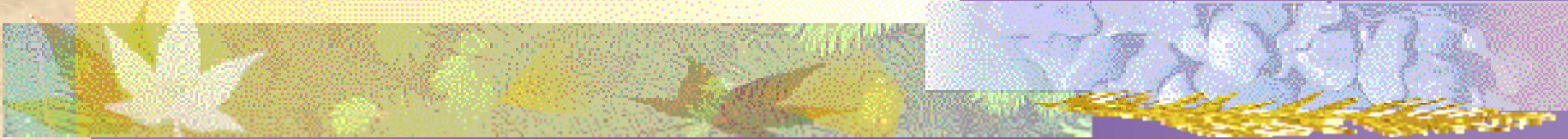
Felling 101: Types of Cuts





Make a Correct Cut

- A Felling Notch does not exceed 20 percent of the tree's diameter at breast height. This cut is made first.
- The Hinge is the 10 percent that is left uncut for the operator's safety.
- The Felling Cut is made last. It occurs on the opposite side of the tree from the felling notch, but it does not go all the way through the tree. The notch and the cut are staggered, so they don't meet.



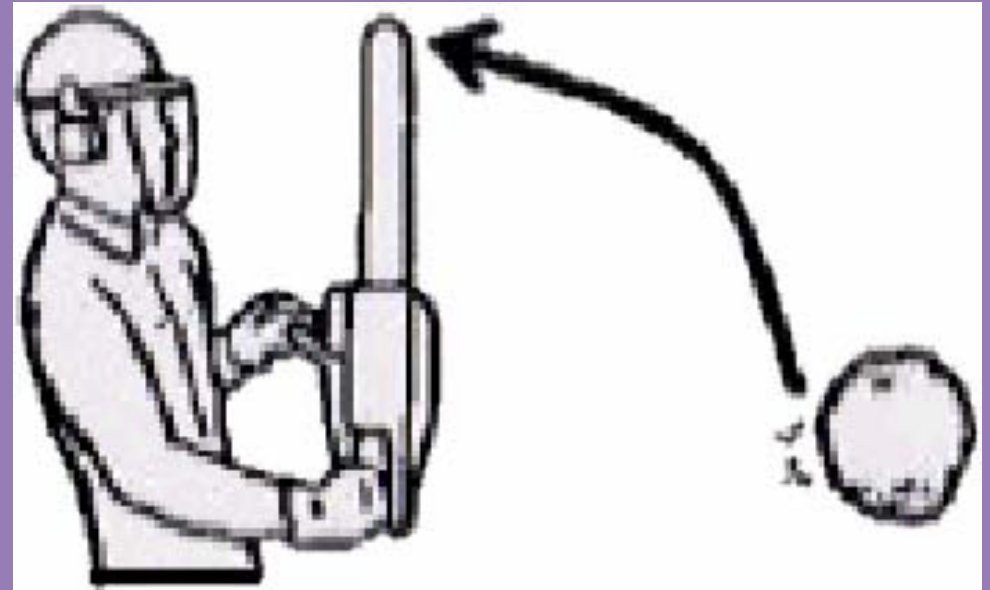
Types of Injuries

- Kickback
- Vibration Syndrome
- Widowmaker
- Entanglement
- Stump Jump
- Setback
- Crown Shatter
- Barber Chair
- Moving Tree
- Springpole

Quick Fact: Kickback is the single greatest cause of injury to chain saw users.

What is Kickback?

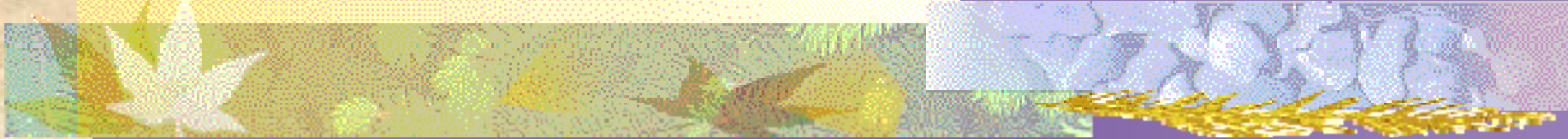
- Kickback is caused by a spinning chain coming in contact with resistance.
- It causes the chain saw to “kick back” toward your face.
- It is very common and can cause serious injury.





How can Kickback be Prevented?

- NEVER cut with the tip of the chain saw!
- Lock your front elbow.
- Be careful not to cut through nails or knots in the wood.
- Stand to the side.
- Use a low kickback chain.
- Use a chain brake.



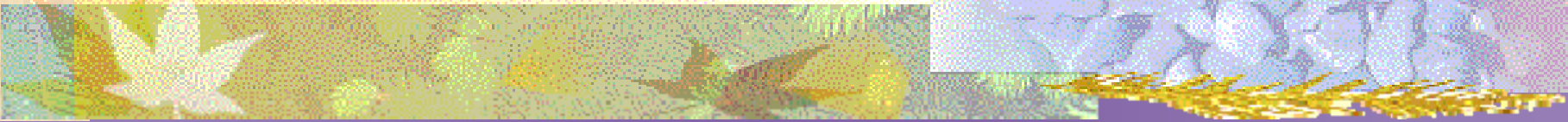
Vibration Syndrome

- Vibration syndrome causes frequent users of chain saws to get white knuckles and a loss of feeling in their fingers from the vibrations of the chain saw.
- It is not very common presently, due to better working conditions and safer chain saws.

Widowmaker

- Widowmaker is caused by loose branches falling from the tree due to vibrations from the chain saw.

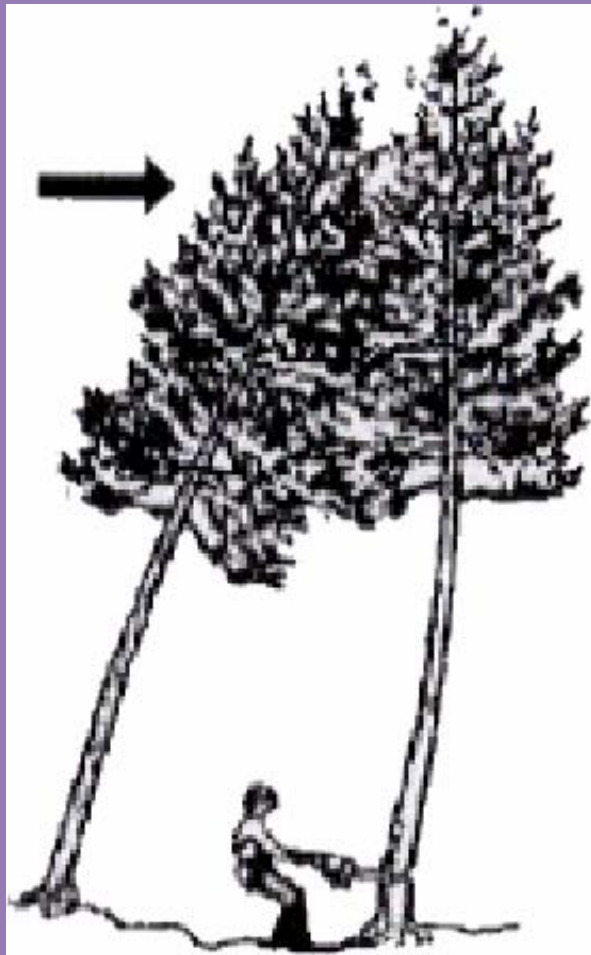




You can prevent a widowmaker injury

- ALWAYS WEAR A HARDHAT!!!!
- Remember that a branch falling on you from less than 2 inches away can have enough force to kill you.

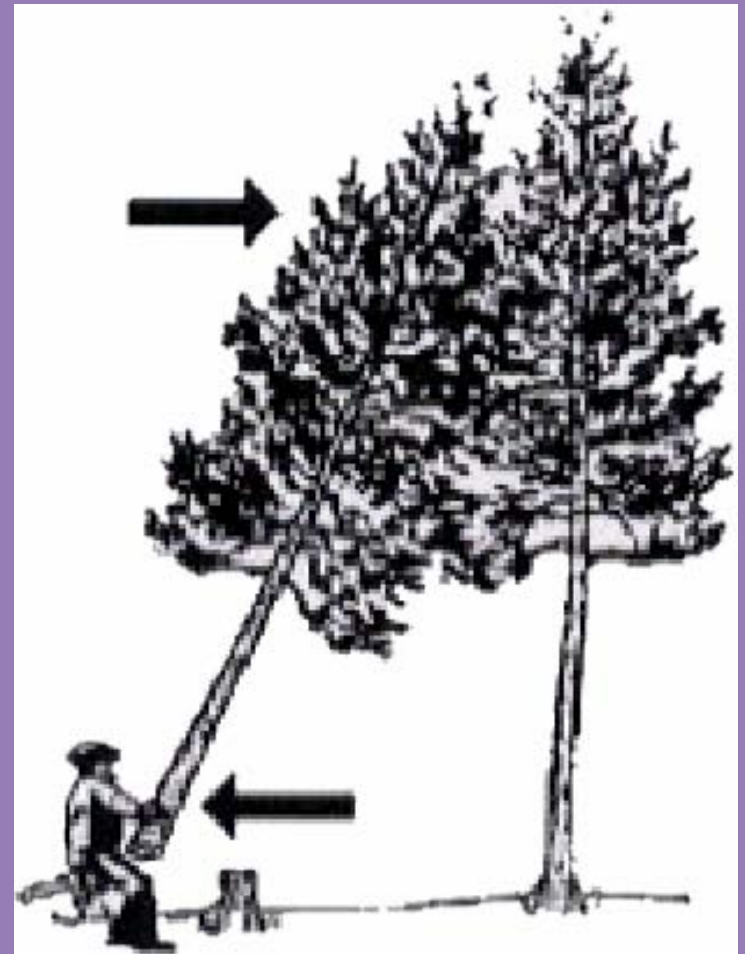
Entanglement



- Trees that are being cut down may sometimes drag or snap other trees.
- Free the branches of the tree you are cutting before starting to cut to prevent this from occurring.

Stump Jump

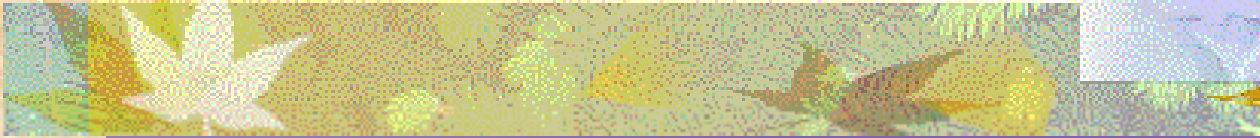
- This is caused by the hinge being cut or breaking when the tree is falling.
- The tree can jump or roll, or hit other trees in any direction.





Have an Escape Plan... and Use it!

1. Plan an escape route to prevent injuries due to stump jump.
2. When the tree begins to move, turn off the chain saw and escape.

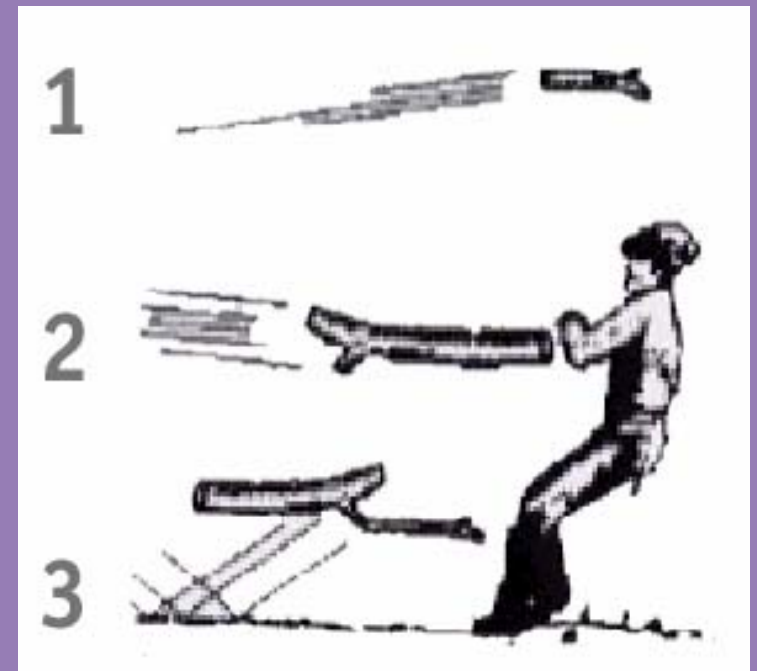


What Is Setback?

- Sometimes a tree may tilt backward and clamp onto the bar of the saw.
- If the hinge breaks, then the tree can fall backward.
- You can use wedges to make sure the tree will fall over in the right direction.
- You can tie a cable or rope in the top of the tree and apply steady pressure.

Crown Shatter

- This occurs when the crown of the tree that has been felled or a nearby tree snaps or shatters.
- This causes hurling branches and can cause serious injury or death.
- Notice three ways to be struck.



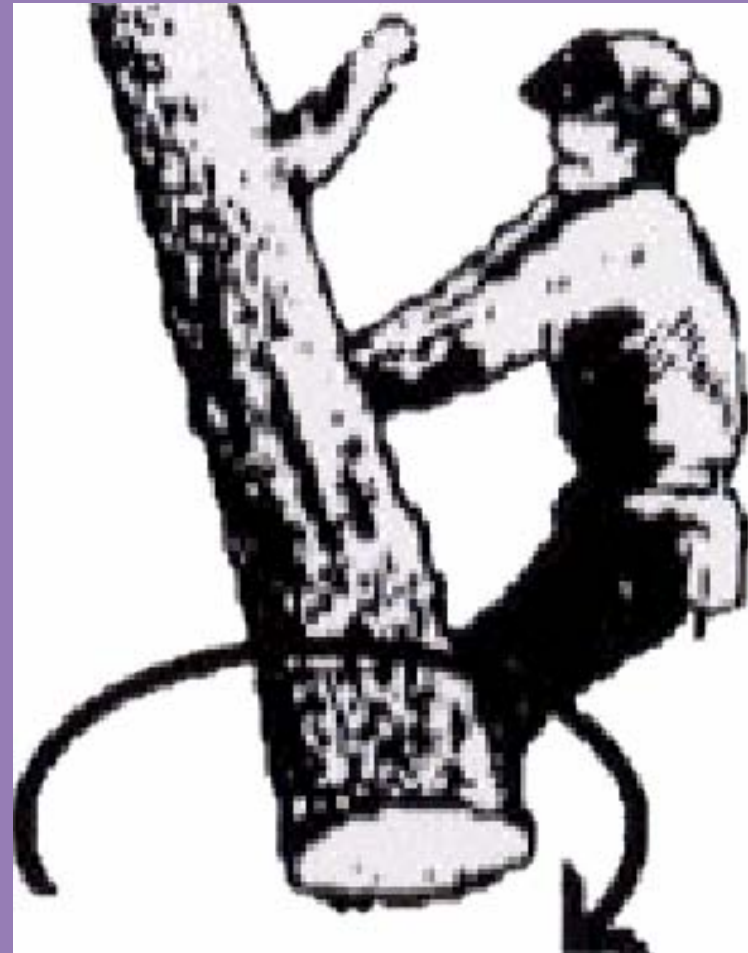
Barber Chair

- When the backcut has been made, if the tree leans too far, the butt of the tree can kick backward.
- This happens much faster than a normal reaction time.
- Never stand in the back of the tree as you are cutting.
- Seek professional help.



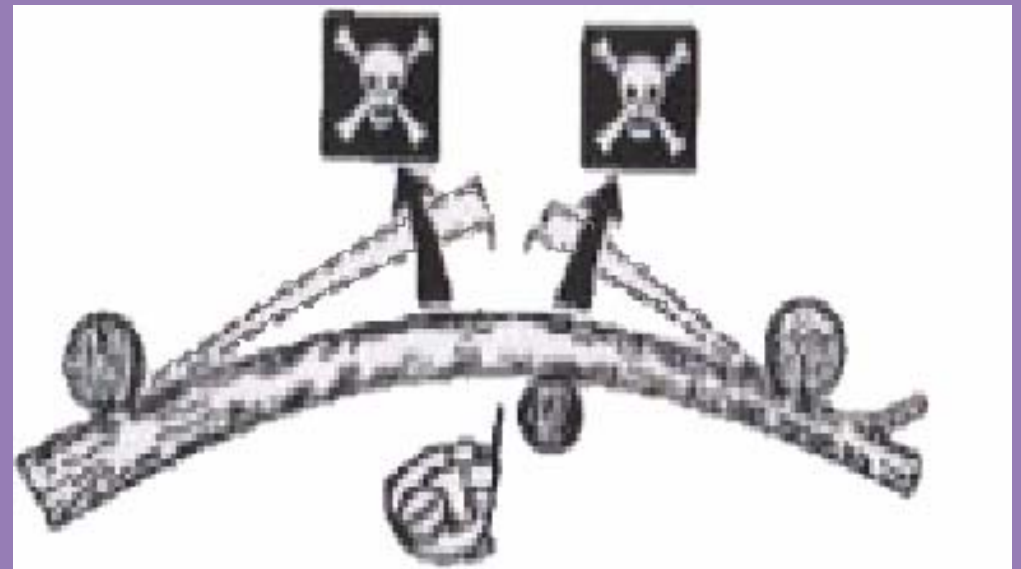
Moving Tree

- A rolling or moving tree can catch your leg or crush you.
- This can occur when limbs or restraints are removed.
- Prevent this by staying uphill from a tree on a slope.



Springpole

- A tree can become arched as it is felled or if another tree falls on it. When cut, it can violently strike out at anything in its path.
- Always stay inside the "bow" of a springpole.



Escaping From Danger

- Always plan an escape route that is a path at a 45-degree angle away from the line of the tree's fall.



Preventing Injuries



- Personal protective equipment (PPE) MUST be worn at all times.
- This can greatly reduce injuries and prevent death from chain saw injuries.
- Keep both hands on the chain saw handles.



Safety Tips

- Keep the chain saw handle clean and dry.
- Make sure that the handle is free from oil or fuel.
- Keep your chain saw properly maintained.
- Follow the manufacturer's suggestions for sharpening and maintaining the equipment.
- **Never use a chain saw to cut anything other than wood!!!**



How Can You Eliminate Some Hazards in the Area?

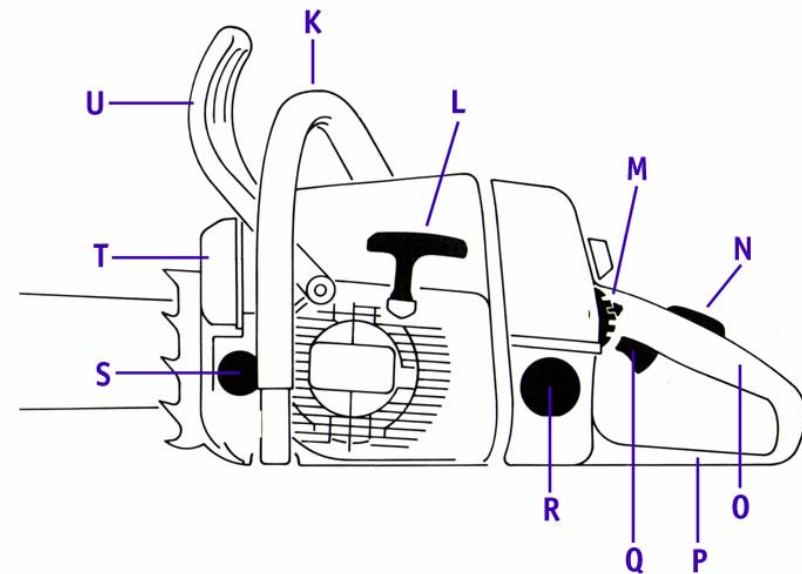
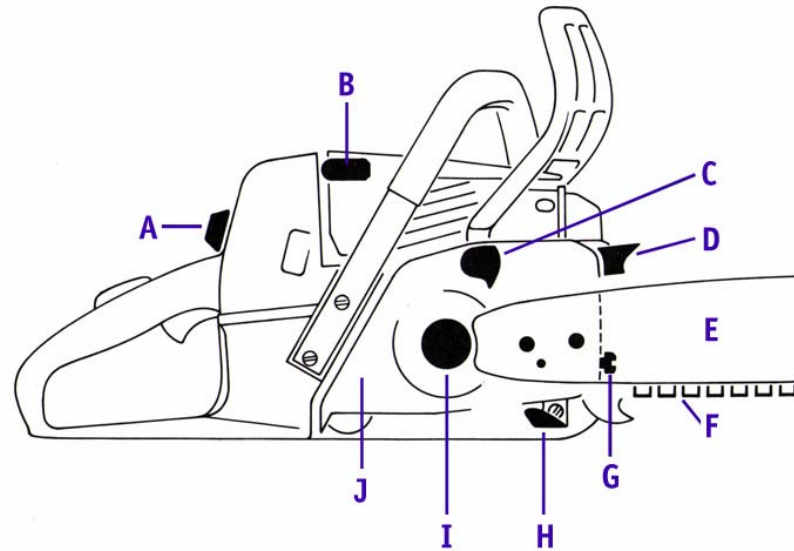
- Clear loose debris from the area.
- Remove combustible materials.
- Look for broken or dead limbs in the tree to be felled.
- Assure that there are no power lines nearby.
- Make sure you have an escape route.
- Be aware of where others are in relation to what you are cutting. This includes people, houses, automobiles, etc.

When Do You Call a Professional?



- Any time that a situation requires more skills than you have.
- If a tree has a larger diameter than the length of the guide bar.
- If the tree is dead, hollow, split, or rotten.
- If there isn't enough room to safely fell the tree or if there is no clear escape route.
- If there are any other obstacles to the tree.

Parts of a Chain Saw: Review





Always Remember to Be Careful!

Pay attention to your surroundings, wear the correct clothing, and call a professional when you are unsure of your ability to perform the task safely.

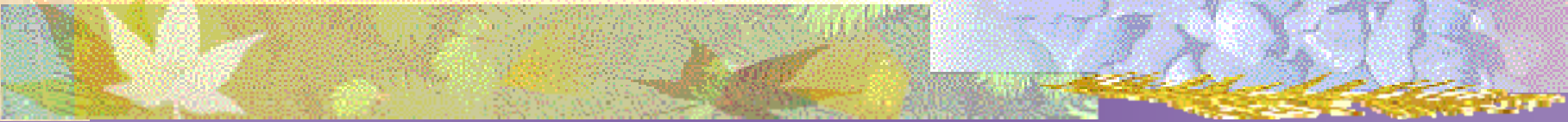
Follow the four steps to
prevention and operating
a chain saw can be safer!



Be Aware!

Be Alert!

Be Alive!



For more information on this
and many other safety topics,
visit the Florida AgSafe Network
Web site:

<<http://flagsafe.ufl.edu>>



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