

## Personal Protective Equipment for logger

**Logger:** - Loggers who manually fall trees with chain saws are exposed to the greatest logging risks.

Personal protective equipment (PPE), for the head, ears, eyes, face, hands, and legs are designed to prevent or lessen the severity of injuries to loggers.

Wear comfortable, close-fitting clothing when using a chain saw. Also, include the following protective equipment:

**1- Head Protection:** - Hard hats must be worn when overhead hazards are present

**2- Face shields or plastic goggles,** to prevent injuries from wood chips, and sawdust

**3-Hearing Protections:** - Ear plugs or muffs to prevent hearing loss. Chain saw noise is greater than the human ear can tolerate; sustained exposure can cause hearing loss that cannot be restored.

**4- Heavy duty leather gloves** to protect hands from cuts and scrapes.

**5- Leg protection pants or chaps** that cover the upper thigh to boot tops.

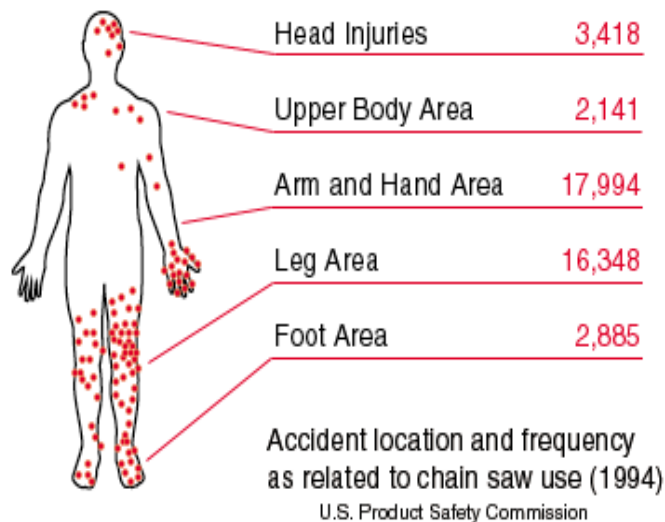
**6-Safety boots with steel toes and nonskid soles.**

**7- First aid kit available at the work site.**



### Chain Saw Injury Locations

Notice how most injuries occur on the lower left leg and the left arm. Be sure to protect those areas well.



## Other hand tools

**THE PEAVEY**:- is an essential tool on most harvesting operations, where logs are usually small enough to be "man-handled" ordinarily, **It is not used by felling and bucking crews** unless logs or poles are to be turned for peeling, the peavey is very commonly **used by bunching and loading crews** and **for placing logs at yards and on trucks during loading.**



**LOG JACK**: - is a tool sometimes used when bucking trees to short lengths in some regions, particularly for pulpwood or other similar products, as the name implies, this tool is designed to jack up the tree being bucked to permit bucking without saw pinching.



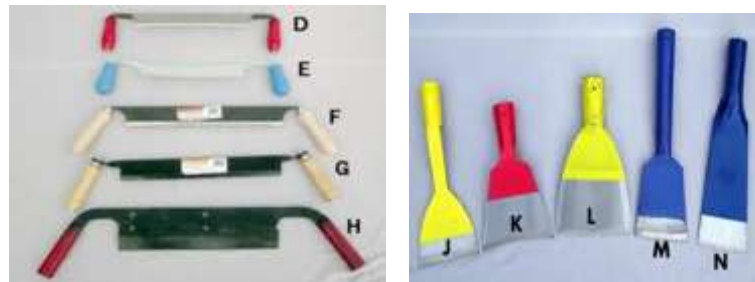
**WEDGES**: - wedges are used both in felling and in bucking and are a part of fallers and buckers equipment.



**IN FELLING:-** the wedges are inserted in the back cut to prevent the weight of the tree from closing the cut and binding the saw and also to lift and incline the tree to fall in the desired direction.

**IN BUCKING:-** wedges are used to keep the cut open and thereby prevent the saw from being pinched when the logs settle.

**BARK-PEELING:-** several types of spuds or bark-peeling tools are used when products are to be peeled.



**MISCELLANEOUS HAND TOOLS** -Measuring sticks and tapes are used for determining log or bolt lengths for bucking.

### Marking Trees for Cutting

Timber marking requires that some form of visible evidence be placed on the trees in a conspicuous place to indicate those to be cut or those to be left.

This is done either

- 1- By blazing them with an axe.
- 2- By painting them with a squirt gun on the bark.

## **Blaze marking**

Blazes are a satisfactory way of marking trees to be cut as soon as possible, in this case there is no harm done to them, however it will be harmful in the following cases: -

- 1- when blazing trees that are to be left, since the tree is permanently scarred, and insects or fungi may gain entrance through the wound.
- 2- A blaze causes resinous streaks in most coniferous species, which degrade the product which eventually comes from that part of the tree.

## **Paint marking: -**

There are some characteristics of this method that preferred on the blazing method:

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- 1- Marking trees with paint is a widely used in partial cutting.
- 2- In partial cutting operations paint marks can be removed if it is found that some adjustment is desirable in the choice of trees after the initial marking has been done.
- 3- With paint marking, the first consideration is that a color be used that can be readily seen and that the paint be durable enough to last for several months.
- 4- Yellow, blue, and white paints are distinctive in the forest and are the colors most used for tree marking. Blue is a favorite color on the characteristically yellow and orange barked ponderosa pine in the west.
- 5- When timber is being cut for two or more purposes, different paint marks can be placed on the trees to indicate for what product each is to be cut.

For example: -

- Trees to be cut for pulpwood can be marked by placing one spot on them;
- those to be cut for sawlogs can be marked by placing a circle of several inches in diameter on them

- while trees to be cut for poles, piles, or other specialized products can be marked with two horizontal streaks or a cross.

## Felling Trees

To "fell a tree" means more than just cutting it down. Felling means to cut the tree in such a way that it falls in the desired direction and results in the least damage to the tree.

### Felling technique

#### Felling large trees

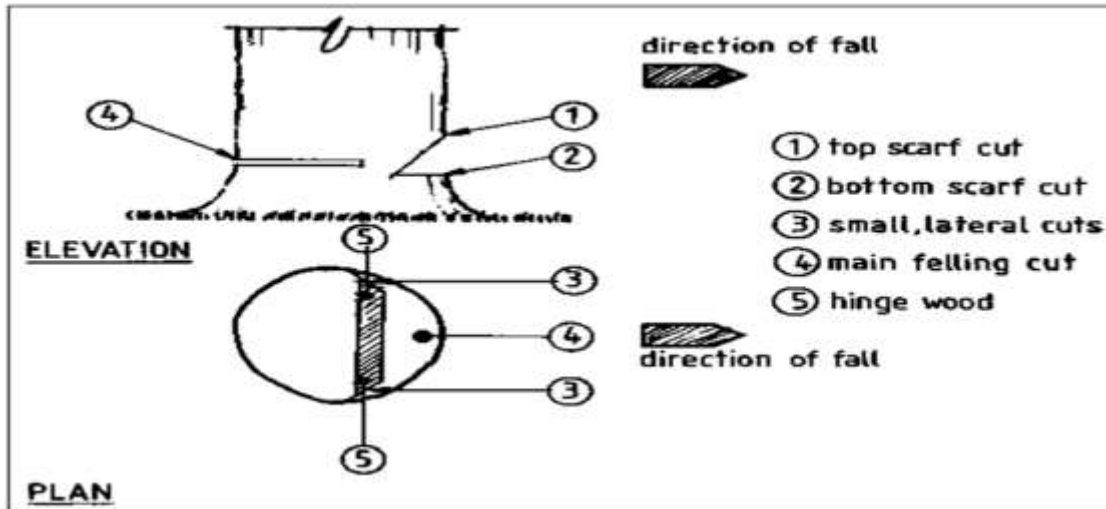
Large trees require greater accuracy in the process of felling compared with small trees?

A/ Large trees are more valuable than smaller ones, because of their size and they damage or break more easily, and the area affected by their falling is greater than for small trees.

#### Under cut: -

- ❖ First, however, a safe working space is brushed out around the tree by chopping out all sprouts and other growth that might interfere with the fallers; but needless cutting of any desirable tree seedlings is avoided.
- ❖ When all the consideration bearing on where a tree should be felled has been weighed and a decision reached, the tree is undercut on the side toward which it is to be felled.
- ❖ A perfectly erect and evenly balanced tree in a windless atmosphere, when properly undercut and backcut, or severed, will fall squarely in the direction of the **undercut**.
- ❖ Conditions that upset the balance of a tree, such as wind, uneven crown, or lean, may deflect the direction of fall from the line of the undercut, skilled

fallers however can judge the combination of factors pulling a tree in several direction and can undercut or notch it at the place where it will influence the other stresses to fell in the desired direction.



After the direction of fall has been determined, the undercut is made to guide the tree in that direction.

### What is the objective of undercut?

an under cut, a notch at the base of the tree, removes support for it at that point and thereby increases the tendency of the tree to fall in that direction.

As the backcut (felling cut), is being completed the narrow bridge of uncut wood that breaks off as the tree falls severs as a hinge (holding wood)

Q/ what is the function of the hinge (holding wood)?

1-that guides the tree in the direction of the undercut.

2- Prevents it from rotating on the stump.