Cedar Salvage Falling & Bucking Training

Note: This training is intended to be used for training employees such as hooktenders and rigging slingers who may on occasion, need to fall a guyline tree or tailtree or buck a log.
Before assigning falling and/or bucking duties, the employer must ensure that employees have the training and skills necessary to do the job safely, and that includes an on-the-job evaluation of the falling and bucking procedures used by employees. The evaluation must be conducted by a competent and qualified person. Employees must not be allowed to work independently until the training is completed.

Employee's Name: _____

Trainer's Name: _____

I have received and understand the information listed below:

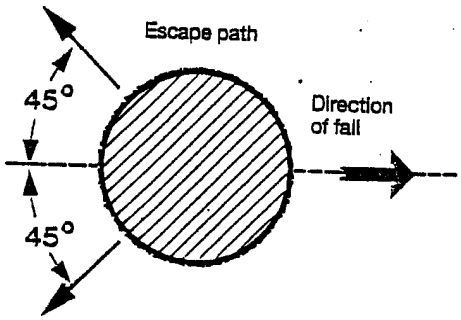
Employee's signature: _____ **Date:** _____

After the information has been explained, place a mark in each box below.

☐When falling a tree, you must carry or have in near proximity at all times at least two wedges and ax for driving wedges.

☐Make sure the saw has plenty of gas.

☐Before falling or bucking, check for defects, widowmakers, location of other trees, lean of the tree, wind, etc. If unsafe, stop and ask for another worker's help or advice with any question about the safe cutting or bucking of a tree or snag.



☐**Prepare your work area.** Brush out around the base of the tree and cut away windfalls, logs or other debris that could be thrown by the falling tree.

☐**Choose and clear out an escape path in back of, uphill and at an angle away from the stump.** Your escape path must allow you to move at least 10 feet from the stump.

☐**The undercut should be one-fourth to one-third of the tree's diameter.** Note: For a short stubby snag, the depth of the undercut may need to be about one-half the diamete

☐Undercut opening must be wide enough that the tree is committed to fall properly. The face opening of the undercut should be no less than one-fifth the diameter of the tree.

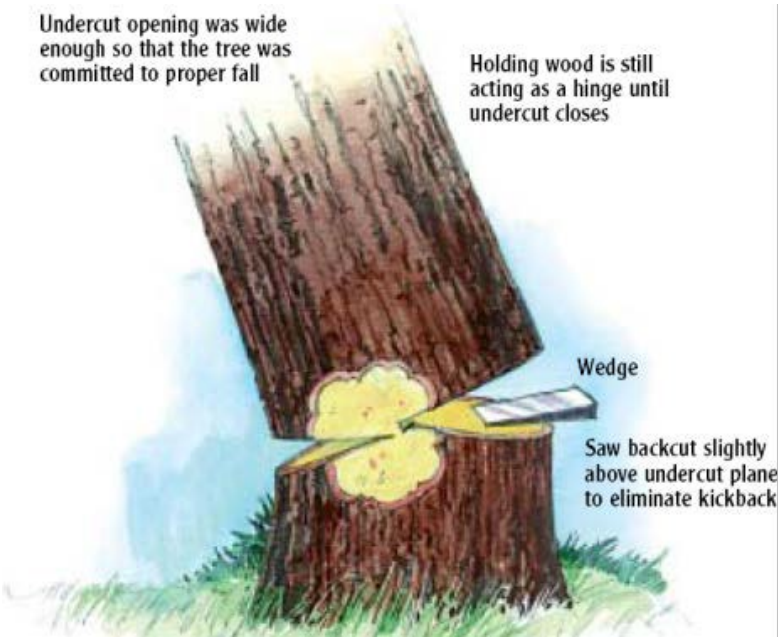
☐The horizontal part of the undercut must be level (except when using an open face undercut). The two cuts that form the undercut must not cross where they meet, except where a Dutchman is required on either side of the cut.

☐**An unintentional Dutchman can cause a barberchair (See illustration)** or cause the tree to fall in the wrong direction.

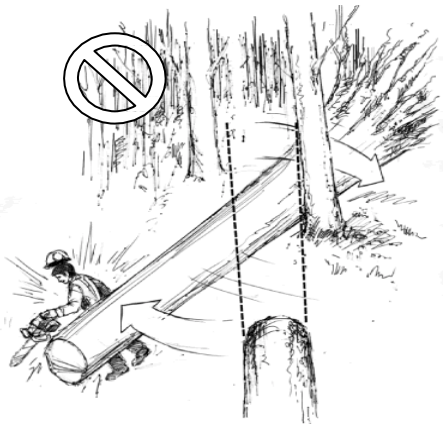
☐Undercuts are required on all trees over 6 inches DBH.

☐The undercut must not be made while other workers are in an area into which the tree could fall.

☐**The backcut should be level and above the hinge point of the undercut to prevent kickback (see illustration).** Place wedge(s) when the bar is deep enough. Leave enough holding wood to ensure the tree will fall in the intended direction. Cutting holding wood instead of using wedges is prohibited. Swing cuts can only be used by an experienced cutter. Check corners often so you don't cut off a corner.



When the tree lifts and is committed to fall, use your escape path and quickly move a safe distance away from the stump and get behind another tree if possible.



Watch the falling tree and neighboring trees as it starts to fall for any material being dislodged. Keep watching for falling material even after the tree has hit the ground. Neighboring trees that may have been touched will still be swaying and may dislodge or throw material into the work area. Do not move to the stump or next tree until you have finished your safety check.

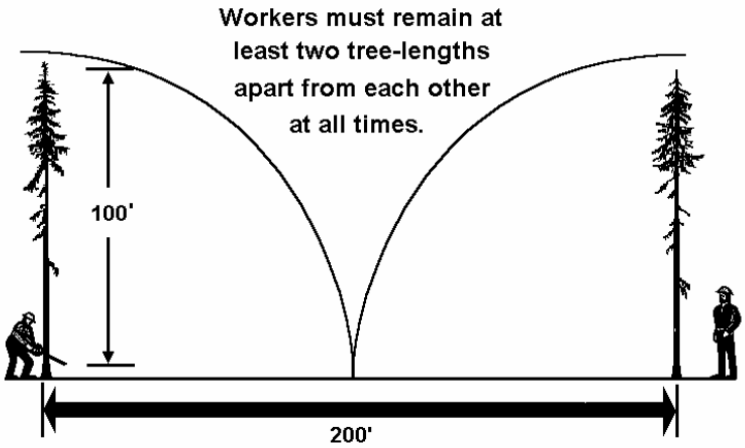
☐Trees must be fell into the open whenever conditions permit. Brushing other trees creates widowmakers, hang-ups, and material being thrown back toward the cutter.

☐**Before bucking a tree/log or rootwad, look for: side bind, pivot points, elevated butts, and tops that could cause log movement**. Clear an escape path so you can get away if a log moves. Watch for limbs, saplings, or vine maple that could spring back when bucked off. Always stand on the uphill side of a log that could roll.

☐Trees with face cuts and/or backcuts must not be left standing unless all the following conditions are met: cutter clearly marks the tree, discontinues work in the hazardous area, notifies other workers who might be endangered and takes appropriate measures to ensure that the tree is safely fell before other work is undertaken in the hazardous area. **DON'T work under hung up/cut up trees!** Don't turn your back on a hung up/cut up tree.

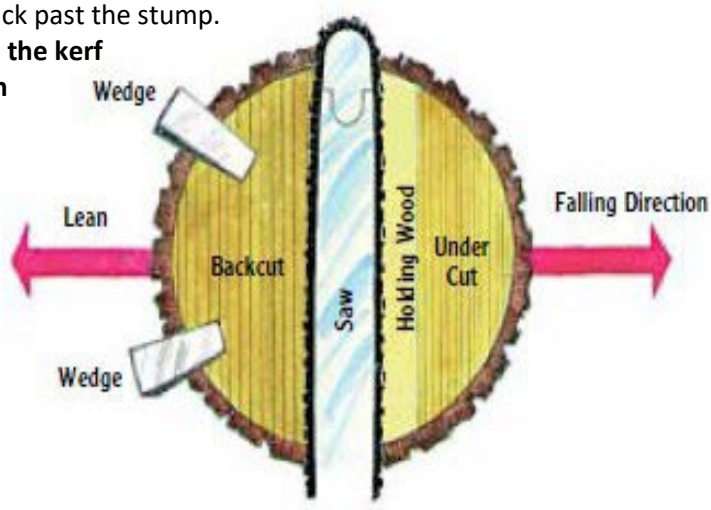
☐Employees must not approach a cutter closer than two tree lengths of the trees being felled until the cutter has acknowledged it is safe to do so.

The distance between work areas must be at least twice the height of the trees being fell.



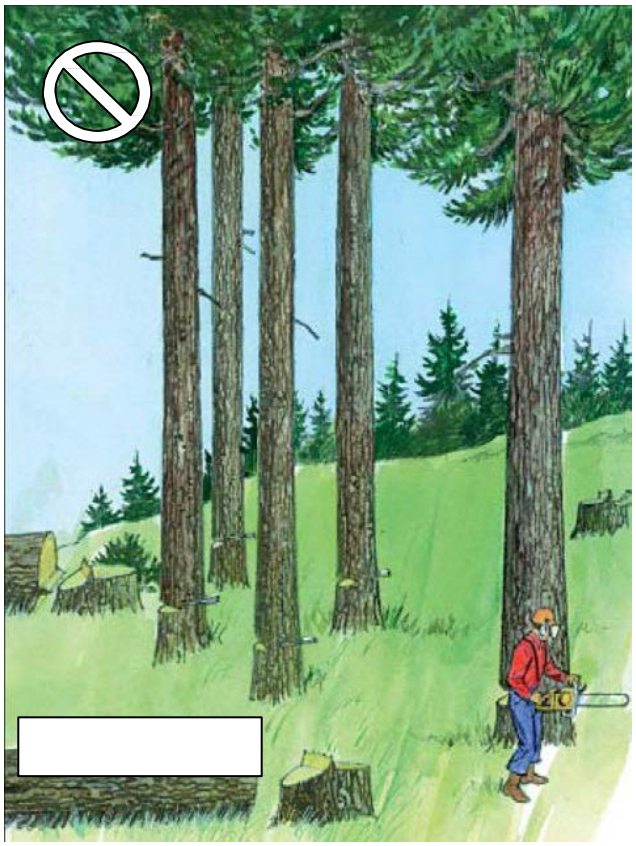
☐While manual falling is in progress, all logging machines must be operated at least two tree lengths away from trees being manually fell. *Exception: This provision does not apply to logging machines performing tree pulling operations or logging machines called upon by the cutter to ground hazard trees. All cutters must be notified of the logging machines entrance into the falling area and all falling within two tree lengths of the logging machine must stop.*

☐Falling a tree straight uphill is prohibited if it could slide back past the stump. **A tree may be felled against its lean by inserting a wedge in the kerf of the backcut and driving the wedge as the backcut is sawn** (See illustration).



☐Heavy leaners may require two or more wedges to be used, and the wedges should be driven alternately as the backcut is sawn. In some cases the tree may be leaning in two directions. Be careful not to cut off the holding wood on the leaning side; the tree may settle on the saw bar. More holding wood is maintained opposite to any side lean. This will help draw the tree away from any side lean.

☐**Domino falling of trees, including danger trees, is prohibited.** Domino falling does not include the falling of a single danger tree by falling another tree into it to overcome a falling difficulty. Domino felling is defined as the partial cutting of multiple tree which are left standing and then pushed over with a pusher tree (see illustration).



Falling Danger Trees - Explained

Where possible, danger trees must be felled:

- Progressively with the falling of other timber;
- Before falling live trees; and
- Into open areas.

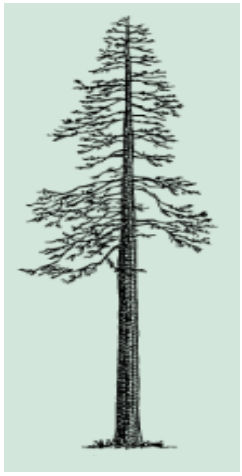
Danger trees that will reach the work area should be felled as soon as an opening will permit.

Don't overlook danger trees along cutting lines or in leave areas. If it is unsafe to hand fall a danger tree, your supervisor must prearrange other methods such as the use of explosives or machinery, so you don't have to bypass a danger tree. Avoid wedging a danger tree as it may break off or material may fall. Fall danger trees in the direction of lean whenever possible.

Avoid "pushing" a danger tree, other than to overcome a falling difficulty. The top may break off or the danger tree may buckle in the middle and fall in your direction. The whole danger tree could sway and fall back onto the faller. Never push a danger tree with another danger tree. Most danger trees can be felled progressively with other timber

One worker must not fall a tree or danger tree when the assistance of another worker is necessary to minimize the risk of injury caused by overhead hazards, loose bark, or interlocked limbs, conditions of the tree, terrain or cutting conditions.

As a cutter, it is imperative that you be able to identify danger trees in your surrounding work area that would create a hazard. Because timber fallers are usually the first workers to approach a danger tree or snag during the harvest activity, they are at greatest risk of having an accident.

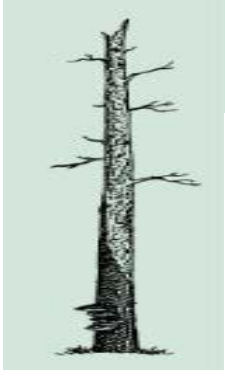


Danger tree is defined as (WAC definition in the Safety Standards for Logging Operations): Any tree of any height, dead or alive, that poses a hazard to workers because of rot, root, stem or limb damage, lean, or any other observable condition created by natural process or man-made activity.

Some trees, although dead, may not be ~~a~~ danger trees if they have a sound top, trunk, and roots. Identifying these dead but safe trees requires careful observation. Mortality may have been caused by canker, diseases, insects, fire, adverse weather or lightning. Needle and small twig retention is evidence of recent death, which may be an indicator of stability. Fire-scorched trees may remain stable for many years if the trunk and root systems are not badly burned.

However, not all fire-scarred trees may be safe. Pre-existing defects may be charred and difficult to detect, rendering a tree that was dangerous before the fire even more dangerous afterward.

If the fire burned the root system, it may be damaged, and need to be classified as a danger tree. Similarly, trees infected with root rots have weakened root systems that automatically classify them as a danger tree. Root disease pockets can be identified by looking for trees with fading crowns that are adjacent to withthrown trees with root decay. The windthrown trees will usually have very small root balls.

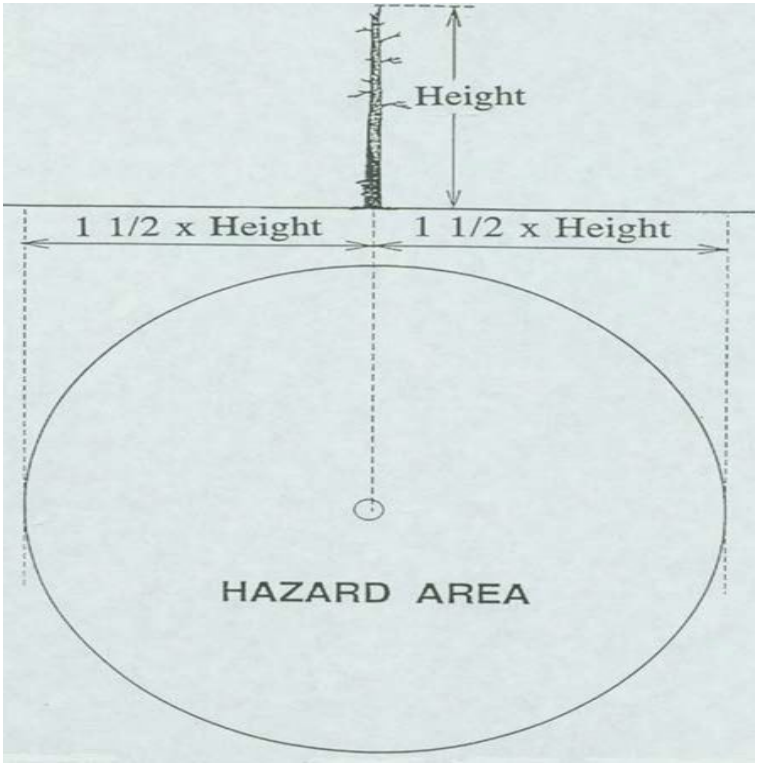


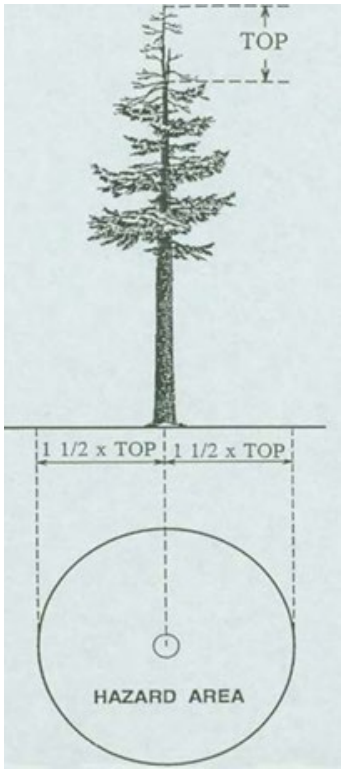
Danger trees could be live or dead trees with unstable tops or upper portions.

Although the roots and main portions of the trunk are sound, these reserve trees pose high hazard because of defect in live or dead wood higher up in the tree. Ground vibration from falling trees, wind, flying debris, heavy equipment or other

industrial activity can dislodge slabs, chunks, limbs, or the entire upper portion of the tree.
Danger trees could also be live or dead with unstable trunk or roots, with or without bark. This includes “soft” snags as well as live trees with unstable roots caused by root rot or fire. They are considered the most dangerous type. Unexpected collapse could occur from any portion of the roots or trunk.

If the intent is to leave a danger tree in a logging unit, then workers must remain a safe distance away. A safe distance would be outside the potential hazard area of the danger tree (see examples below).





☐**Windfalls and windfall roots - Explained**

Windfall roots should not be approached from the root wad side. **Avoid standing directly behind or downhill of a root wad.** Never assume that a windfall root wad is safe because it has been down for a long time. It may still flip over unexpectedly. When bucking off a root wad, leave a short log on the root wad to prevent it from tipping toward you.

☐**Burned Timber – Explained**

Falling and bucking burned timber requires extreme caution. Roots of some trees could be burned off or they may have burned out centers. The trees may fall as soon as they are exposed to wind. The falling face should be kept straight. Bark may be loosened by fire and fall unexpectedly. Walking on burned logs is more dangerous because support limbs may be weakened or partly burned off. Burned holes and exposed roots create additional tripping hazards. Large rocks, long butts and chunks may roll downhill after fire has undermined their support.

☐**Bucking – Explained and demonstrated correctly**

- **Before bucking a tree/log or blowdown/rootwad, look for: side bind, pivot points, elevated butts, and tops that could cause log movement**.
- Clear an escape path so you can get away if a log moves. When bucking, never have your back up against a solid object, such as a root wad, large blowdown, or rock bluff that would block your escape path. Your first step is the most important, so always have good footing and maintain your balance. Watch for limbs, saplings, or vine maple that could spring back when bucked off. Always stand on the uphill side of a log that could roll.
- Determine whether the log can be bucked safely before starting the job. Remember, no tree or log is worth getting hurt for! If unsure how to do your job safely, stop and ask another cutter for assistance and or advice.
- Never work in an area where bucking activity might pose a hazard to yourself or other workers. The hazard might come from falling snags, branches, rolling logs or the movement of equipment or material.
- Avoid bucking "Runaways" located below logs which could roll or slide.
- Ensure all workers are clear of the hazardous area before bucking.
- Examine the tree before making a cut to determine which way the log may roll, drop or swing when the cut is completed.
- Make sure all obstructions to safe bucking and all escape routes are cleared before bucking.
- Cut only from a position that will not expose you to a risk of injury.
- Check the soundness of the log. Look for pivot points and natural skids.
- Never start a bucking cut if you consider the log to be in a dangerous position.
- Never start a bucking cut if there's a chance you can't finish it.
- If it becomes too dangerous to complete a cut, the log must be marked and identified by a pre-determined method.
- Keep a firm grip on the saw with both hands. Instead of over-extending or holding the saw

in one hand, re-position yourself. One hand operation should only be used when two handed operation creates a greater hazard.

- Cutters should not use the chain saw to cut directly overhead or at a distance that would require the operator to relinquish a safe grip on the saw.
- Choose cuts and log lengths that enable you to avoid hazards caused by a poorly-chosen cut.
- Always buck from the high side of the log.
- Never buck below logs previously bucked.
- Two or more persons should not buck a tree at the same time if the release will result in movement.
- If a tree is lying in a position that makes it too dangerous to buck at a desirable length, buck it at a safe length.
- When a falling tree brushes a snag, or other weak, unstable tree, leave the tree unbucked until the snag or defective tree is felled.
- Always be on the lookout for limbs or other objects hanging above in standing limber.
- Only experienced cutters should buck windfalls.
- Buck the bottom windfalls of a "jackpot" first to avoid top logs or material from rolling.
- Watch for loose bark when walking on windfalls; it could cause a serious fall.