BC Forest Safety
Safety is good business

Hung Up Tree & Fence Posting Safe Work Procedure

The following safe work procedure was developed by subject matter experts representing the forest industry, wildfire, oil and gas, and WorkSafeBC.

Hang-ups are falling difficulties that involve trees that have fallen into other trees or into standing timber. This can occur naturally, by fire or adverse weather conditions or can be man-made by a faller or machinery.

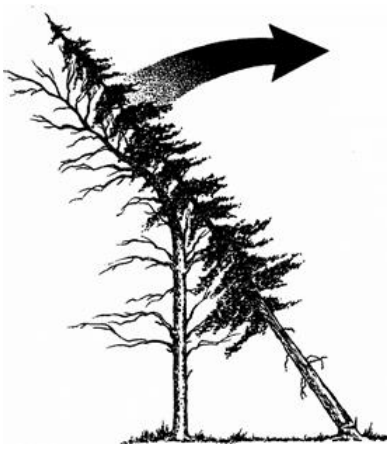
Support trees or catapults can be under extreme pressure. The tree may spring back to its upright position when the weight of the hung-up tree is removed. This increases the risk of being struck by flying debris, loose limbs and broken tops from a distance when the hang-up is released. If the support tree is felled while under pressure, there is a significantly increased risk of it barberchairing.

Man-made hang-ups are caused by poor planning and/or loss of control of a tree. Regardless of the cause, fallers are encouraged to seek qualified assistance to deal with these falling difficulties. Don't let your pride get in the way of asking for assistance.

- A full assessment of the hazard/falling difficulty must be completed from multiple angles prior to any decision being made to remove the hang-up. A second opinion can be extremely helpful in determining the correct option or procedure.
- Best practice when removing a falling difficulty is to use alternate falling means such as blasting or machine assist. This can potentially remove the faller from the danger of removing the hazard. It is always best to use qualified assistance in helping to make those decisions.
- If the assessment determines that a pusher tree could be used to knock out the hung-up tree without creating additional hazards, then follow the SWP's for Limb tied /pushing a tree.
- **If the faller is required to work under the hung-up tree but cannot face the hang-up**, the hang-up must be fully assessed, and multiple escape routes must be available. This procedure requires that qualified assistance be a part of the assessment and procedure.
- Whether the hang-up was created by the faller, machine or by natural events, the faller must **STOP**, evaluate the situation, identify all of the risks involved in removing the hazard and have sufficient controls in place for all of the risks. Do not rush in without considering all outcomes and options.



STOP!
If you hang up a tree, you MUST seek qualified assistance. DO NOT make the mistake of rushing in to work in and around the cut-up tree.



Hung up tree

CAUTION!
If the faller is required to work in front of or under a cut-up or hung-up tree, qualified assistance is required.

Hazards

Hazards associated with hung-up trees include:

- Damaged tree stems and roots
- Consider tree species
- Levels of decay
- Risk of being struck by flying debris, loose limbs and broken tops
- The hung-up tree can fall, pivot, or collapse at any time, making it dangerous to work around and remove
- Barberchair from cutting the support tree under tension
- Hang-ups create poor visibility of overhead hazards

Safety considerations

- Consider qualified assistance and alternate falling means
- Consider the cause of the hung-up tree
- Determine if the hang-up is within 15 ° of vertical to manage the pressure placed on the support tree
- Consider how the ground slope can increase the risk
- Avoid cutting a hung-up tree that is structurally unsound as it can break apart and fall forward
- Pressure on the support tree increases barberchair risk
- The safest cutting position for the faller must avoid working underneath an unstable hang-up
- Overhead hazards may become dislodged as trees shift
- Have escape routes leading to cover in case the hung-up tree dislodges or buckles and sends a broken top, flying debris and loose limbs at the faller
- The hung-up tree may not have any rooting or ground support and can shift on slopes and unstable ground

Cutting guidelines

Whenever possible, develop a plan that places the **support tree in between you and the hang-up** at all times. This makes it easier to monitor the hang-up while working, greatly reducing the possibility of having any part of and/or the entire tree unexpectedly strike the faller. If the hang-up is on the same side as the safe cutting location of the support tree and is not securely lodged in the branches, you must seek qualified assistance and consider using alternate falling means to remove the tree (i.e. blasting or machine assist).



CAUTION!
Avoid cutting a tree with elevated structural defects as it can break apart and fall straight down.

Assessment:

- Fully assess the hang-up first, as hazards can be hidden due to the increased overhead cover from both trees being entwined. This may require assessments from multiple locations, from various distances, around the hang-up.
- Assess the support structure of both trees, at the base and in the canopy, taking the slope into consideration (see Unit 1049, Falling in a Steep Slope Environment for more information) and additional weight being put on the support tree.
- Ensure the assessment determines the ability to always work from the safe side of the tree
- Seek qualified assistance when having difficulty assessing hazards and monitoring of overhead conditions from a safe position (see Unit 1037 Work with Qualified Assistance)
- Assess the hang-up for side bind, continuously re-assessing the bind while cutting
- **Before starting any cuts, determine if the hang-up is securely lodged or will roll out of the tree if cut**

Remember, a full assessment is required to determine the security of the hang-up and how any interactions will impact the fall of either tree when cuts are made, taking into consideration what can happen if the procedure does not go as planned.

- Are the branches in the support tree big and solid enough that it will lock up the hung-up tree or is there potential for it to brush past the support tree?
- Are the angles used going to push the hung-up tree in the right direction, without creating more hazards such as brushing or additional hang-ups?
- Will the branches break off or cause overhead hazards to shake loose as the cut drops or begins falling? Consider species characteristics such as brittle or flexible wood fibre and branches.
- Do I have a protection tree between me and the hang-up?
- Am I working underneath a hazard?
- How much weight is on the support tree?
- Have I considered any potential chain reactions that may occur when the tree(s) drops?
- Do I have a plan B before I start any cuts? If not, **STOP** and call for qualified assistance.

Use an alternate falling method, such as blasting or machine assist, when there is any doubt as to the condition of the tree or your ability to complete the job safely.

CAUTION!
Many hang-ups have been made worse by trying to knock trees free using a pusher tree.

Fence posting is an effective process when the hung-up tree diameter is less than 20 inches (51 cm). The goal for fence posting is to progressively slash/step the tree down in small pieces in order to **align the hang-up to be within 15º of vertical.** This will decrease the pressure on the support stem, allowing the support stem to be felled safely. Fence posting may also cause the hung-up tree to slip loose of the support tree, falling to the ground in an unintended direction.

Use angled cuts that create a spike for the fence post to drive into the ground and secure the tree. An angled cut will also allow the tree to drop smoothly. This will reduce the chance the tree will react unexpectedly on slopes.

The support tree can have excess pressure from the weight of the hang-up. **Treat the support tree like a heavy leaner** and use the appropriate cutting sequence in order to reduce the potential for barberchair, root pull, and loss of control.



Fence posting

Fence Posting Safe Work Procedure for Trees Up To 20” (51 cm)

Fence posting is a technique to reduce the angle and pressure of a hung-up tree on the support tree before falling the support tree. Fence-posting, in some cases, can also be used to remove the hung-up tree without falling the support tree. This technique is a combination of bucking and falling procedures.

When fence posting, the bar length must be a minimum of 8” greater than the diameter of the tree to allow safe positioning of the faller.

1 Prepare escape routes prior to fence posting

- Plan multiple escape routes while monitoring the hazard to increase awareness of any tree movement and overhead hazards
- Plan to place both feet in areas that won’t allow them to be struck by the butt of the tree as it slips to the ground
- Work behind and plan for cover when possible
- Prior to each cut, remove branches that can strike you as the tree drops
- As fence posting progresses, reassess your escape route to the new situation and adjust as required



CAUTION!
As the tree starts to drop, be aware that it may go in an unintended direction.



IMPORTANT!
Hung-up trees can release and fall at any time.

2 Follow fence posting safe work procedures that apply to the appropriate bind (typically top bind) until the hang-up is within 15° of vertical.

- First sequence of cuts should be **as close to the ground** as safely possible to minimize the shock to the stems and to determine how to proceed with additional cuts
- **LOOK UP!** and re-assess what the impact of the dropped cut has had on the trees. Look for broken branches and tops.
- Work from a comfortable position allowing for freedom of movement so as not to impede your ability to monitor the top of the tree or to escape to a safe position
- Use vertical cuts to allow for the stem to drop no matter what angle the hang-up is on
- Place the top cut approximately 25-30% down into the stem, stopping before the cut starts to pinch
- Bottom cut should be in line or slightly towards the piece being removed to avoid the dropping stem driving the saw down as it drops

- Avoid taking too large of a piece of the stem by keeping the **chainsaw below waist height** in each cut to maintain control of the tree being fence posted down
- As the stem of the tree releases, take steps to escape from the tree, continuously monitoring for overhead hazards
- Let the hang-up settle before starting the next cuts
- Re-assess after each fence post section is removed to determine stem stability, overhead hazards, workers safe positioning, and escape route location

---



NEVER PLACE CUTS ABOVE WAIST HEIGHT!
Use defensive position away from the hang-up to keep your feet an lower body clear of the hazards of a dropping tree, taking into consideration the slope as it can increase the reaction of the trees.

---

3 When fence posting small diameter trees within 15° off vertical

- Ensure you are in a safe position as the tree can drop towards you
- Fence post cuts must be **below waist height**
- Be aware of overhead branches on the dropping stem

Cuts should be angled to ensure the stem is dropping away from the faller

4 Some fence posting situations may require the faller use a V-cut in the hung-up tree as a preferred safe work procedure. A V-cut would be used to:

- Fence post hung-up trees that are under very heavy pressure
- Fence post larger diameter trees
- Assist with controlling the direction of the stem when it drops.

Using a V-cut as the top cut of the hung-up tree can also be used to drop the stem. Apply heavy bind bucking procedures to this method (Unit 1029 Buck in the Work Environment).

- Best practice is to first use the initial fence posting procedure minimizing movement of the hung-up tree, allowing the faller to determine stability during assessment, before moving onto the V-cut procedure
- Place a V-cut in the top portion of the hung-up tree, close to where the stem is in the ground, following the fence posting procedures described above
- Finish the bottom cut, maintaining good body positioning, which will allow you to monitor the stem/top as it drops
- **Never place cuts above waist height**
- This procedure allows the hung-up tree to be brought to the 15° position using less cuts as the tree moves sideways as well as drops down
- Caution must be taken when using this procedure as the combination of the tree moving sideways and dropping can dislodge overhead hazards or cause the tree to dislodge
- The potential sideways motion of the hung-up tree can be greater when the cuts are placed higher in the stem. This can be exaggerated when a V-cut is used.

- Caution is required on steep slopes, as the butt can move downhill farther before hitting the ground, which can cause the top or entire stem to come out of the tree due to the pendulum motion.



CAUTION
When working on steep slopes, the butt can move downhill farther before hitting the ground, which can cause the top or entire stem to come out of the tree due to the pendulum motion.



IF UNSURE WHEN DEALING WITH A FALLING DIFFICULTY, ALWAYS SEEK QUALIFIED ASSISTANCE AND CONSIDER ALTERNATE FALLING MEANS!

The reaction created from the dropped cut of larger diameter and taller trees is increased due to the greater weight which raises the risk of broken branches and tops coming down.

Support Tree Falling Procedure

1 Assess if the support tree can be felled safely with the hang-up

- Assess if the hang-up is within 15° of vertical to manage the pressure placed on the support tree
- Assess the hang-up and support tree to determine how secure the hang-up is, overhead hazards, blocker trees and challenges to placing cuts
- Assess that the hung-up tree is free to fall in the intended direction with the support tree

2 Create a safe work plan prior to removing the trees.

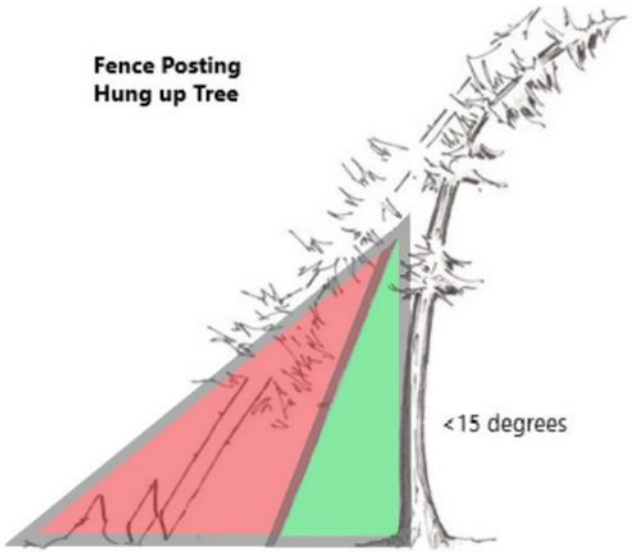
- Determine the safest location to place cuts in the support tree to avoid the danger zone, underneath the hang-up.
- Keep the trunk of the supporting tree between you and the hung-up tree, considering falling direction to maintain a safe position.
- Ensure that multiple escape routes and cover are available.
- Consider longer escape routes due to overhead hazards.
- Consider that a chain reaction can occur due to multiple trees falling.



CAUTION!
Avoid working in situations where there is an unstable or insecurely lodged hang-up overhead.
Use alternate falling means to remove the support tree.

3 When falling the support stem, assess if the Heavy Leaner cutting sequence is required.

- Position yourself and qualified assistance, if required, to safely monitor the hang-up for maximum awareness of any potential movement.
- If using qualified assistance, ensure communication and escape plans have been discussed between the 2 fallers before starting any cuts.
- Ensure the hang-up is within 15 º of vertical and on the opposite side of the support tree
- Remove as many of the “fence-post” pieces as possible to maximize escape route options prior to falling the support tree
- Monitor for overhead hazards that may be hidden in the canopy



CAUTION!
Avoid fence-posting a tree with elevated structural defects as it can break apart and fall in an unintended direction or leave a hung-up overhead hazard. Seek qualified assistance if the hang-up or support tree is a danger tree. Alternate falling means may be required.