USDA Forest Service National Sawyer Training: Developing Thinking Sawyers

Instructors Guide

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Table of Contents

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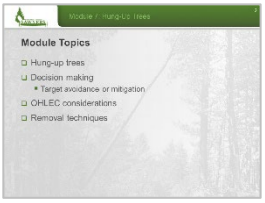
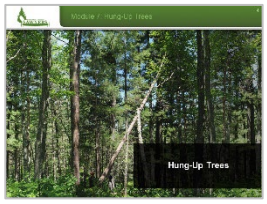
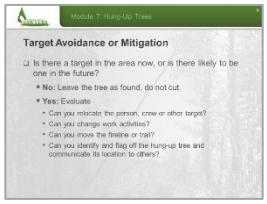
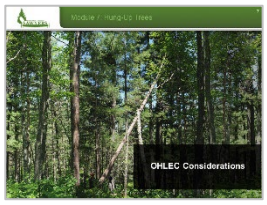
Module 7: Hung-Up Trees

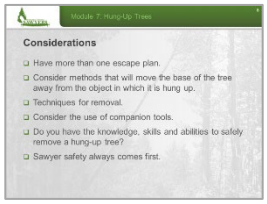
Slide	Content
	 ## Welcome and Introduction **Time:** 56 minutes **Note:** Do not read the slides to the students; speak in a conversational tone, and use the slides to actively engage the students in a two-way conversation. Add the occasional brief story or anecdote from your experience to illustrate key concepts. **DISPLAY FIRST SLIDE**
Slide 1: Hung-Up Trees 	## Introduction **Say:** Welcome to Module 7 of the "Developing Thinking Sawyers" course. We will discuss how to evaluate hung-up trees and the hazards they may pose, along with options for mitigation. **DISPLAY NEXT SLIDE**
Slide 2: Module Topics 	## Module Topics **REVIEW** Review the module topics listed on the slide. **Transition:** Let's review the objectives we have for this module. **DISPLAY NEXT SLIDE**
Slide 3: Objectives 	## Objectives **REVIEW** Review the objectives listed on the slide. **DISPLAY NEXT SLIDE**

Slide	Content
Slide 4: Hung-Up Trees 	## Hung-up Trees **Say:** A hung-up tree, also referred to as a lodged or trapped tree, is a tree that has begun to fall, but has not fallen completely to the ground because it is lodged in or is leaning against another tree. A hung-up tree may or may not be anchored to the stump. Hung-up trees vary widely in terms of their stability and complexity. **DISPLAY NEXT SLIDE**
Slide 5: Target Avoidance or Mitigation 	## Target Avoidance or Mitigation **Say:** A **target** is an object of value that can be damaged, such as a person, building, or vehicle. Hung-up trees can be located anywhere in a forest; you should make an effort to locate them before working in a new area or when stopping for lunch or a break. Avoid making yourself a target. Looking up and looking around for hazards while working in the field is paramount to your safety and the safety of those around you. Hung-up trees can vary greatly in stability and the degree of hazard they present. A tree may be small and hung-up only by the tips of its branches. Other hung-up trees may be large, nearly vertical, and locked together. They may require multiple cuts, rigging, machinery, or a driver tree to free them.

Slide	Content
	Questions for evaluating hung-up trees: ▪ Is there a target in the area now or is there likely to be one in the future? • **No:** Leave the tree as you found it; do not cut. • **Yes:** Evaluate the following: ○ Can you relocate the person, crew, or other target? ○ Can you change work activities? ○ Can you move the fire line or trail? ○ Can you identify and flag off the hung-up tree and communicate its location to others? **DISPLAY NEXT SLIDE**
Slide 6: Human Factors 	## Human Factors **Say:** At some point, all sawyers hang up a tree due to improper cuts, misreading the tree's lean, or some other factor. This is not a dire situation, but it does indicate that the complexity of the situation has changed. Do not rush. Shut off your saw, take a deep breath, and repeat the objective, hazards, leans/binds, escape route, cut plan (OHLEC) process. Remain open to the idea that the safest course of action may be to leave the tree and communicate with or call on a more experienced sawyer for help. **DISPLAY NEXT SLIDE**
Slide 7: OHLEC Considerations 	## OHLEC Considerations **Say:** We use the OHLEC size-up process to develop a removal plan for hung-up trees. **DISPLAY NEXT SLIDE**

Slide	Content

Slide 8: Considerations



Say:

When you hang up a tree during felling, human factors that can put you and those around you at greater risk of injury are likely to influence you. Now is the time to take a break and think clearly about your next steps.

Remember, a hung-up tree may fall at any time. Never turn your back on or walk beneath a hung-up tree.

When developing a cut plan to remove a hung-up tree, consider:

- Reassessing your escape plan with each cut (to avoid injury); a near vertical hung-up tree may fall in an unexpected direction, or possibly straight down or back toward you.
- A method for moving the base of the tree away from the object in which it is hung up.
- Using a hinge to help control and predict bole movement.
- Using a rope, come-along, or other mechanical method along with undercuts and hinges. The intent is to minimize your exposure.
- Asking yourself, do I have the knowledge, skills, and abilities to safely remove a hung-up tree?

Remember, your safety always comes first. Even after you initiate a cut plan, it is acceptable to flag off the area and cease saw operations on the tree.

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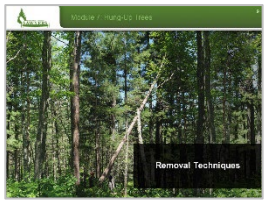
Slide 9: Removal Techniques

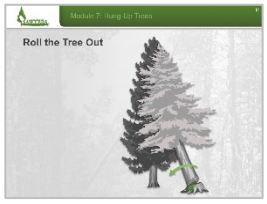


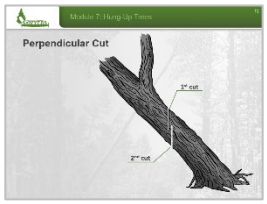
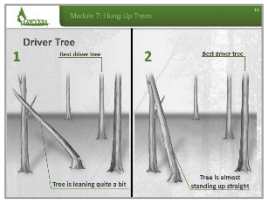
Removal Techniques

Say:

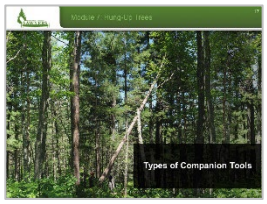
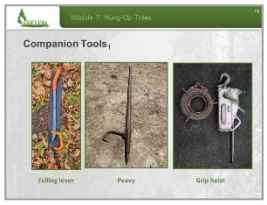
Approach the methods in the following sections with a great deal of caution. There is no guarantee they can dislodge a hung-up tree. It may take a combination of methods to successfully mitigate the hazard. Because the complexity of the situation can change with each cut, the operation requires close monitoring throughout.

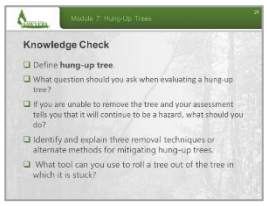
DISPLAY NEXT SLIDE

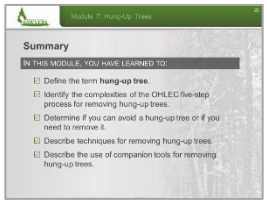
Slide	Content
Slide 10: Flag off 	## Flag Off **Say:** After assessing the situation, if a hung-up tree continues to pose a hazard to people, property, or infrastructure, flag off the area within striking distance of the tree. The goal is to make people aware of the hazard and help prevent them from entering the area and becoming targets. **Display Next Slide**
Slide 1110: Roll the Tree Out 	## Roll the Tree Out **Say:** You can use this method when the bole is still connected to the stump. The goal is for the hung-up tree to roll out of the tree in which it is lodged. Typically, sawyers use this technique when the two trees are not attached very securely, and only their branches intertwine. Begin cutting the hinge a little at a time on the opposite side from where you want the top of the tree to roll. For example, if you need to move the tree top right to dislodge the tree, cut some of the left side of the hinge. You may also need to cut a **snipe** off the stump, enabling the tree to roll or slide off the stump. **DISPLAY NEXT SLIDE**

Slide	Content
Slide 12: Perpendicular Cut 	## Perpendicular Cut **Say:** The procedure for using the perpendicular cut technique begins with evaluating the tree. Often, if the tree is still attached at the roots, the bind or compression is on the bottom of the tree. If the tree is no longer attached, the compression is normally on the top. Once you complete the OHLEC size-up process, you can: ▪ Make the first cut perpendicular to the ground, cutting down from the top of the stem. ▪ Continue cutting until you observe kerf movement. This will help you determine the type of bind and your next steps. ▪ Offset the second cut by approximately ½ inch (the width of a saw kerf) toward the bottom of the stem. ▪ Continue cutting until the second cut extends past the first. The tree should shear off after the two bypass cuts and should drop straight down to the ground. **DISPLAY NEXT SLIDE**
Slide 13: Driver Tree 	## Driver Tree **Say:** You should only use a second tree to push a hung-up tree free when the chance of success is high. Many things can go wrong. The driver tree could miss the hung-up tree or could become hung up itself. The objective is **not** to create a pile of hung-up trees. Considerations when using a driver tree: ▪ The driver tree should be larger than the hung-up tree. ▪ The distance between the driver tree and the hung-up tree is critical. If the driver tree is too close, it will not have enough momentum and may become hung up as well. If the driver tree is too far or impacts the hung-up tree with an indirect hit, it may not create enough driving force to dislodge the hung-up tree. ▪ You must be sure of your ability to correctly aim the driver tree so that it impacts the bole of the hung-up tree. **DISPLAY NEXT SLIDE**

Slide	Content
Slide 14: Repositioning 	## Repositioning **Say:** If the hung-up tree is disconnected at the base, you can construct a hinge to guide the tree base off the trail. The hinge relies on gravity to move the base of the tree. Therefore, the hung-up tree must move slightly toward the tree in which it is hung up. Both portions of the hung-up tree will fall away from the undercut, so the undercut must be in the direction opposite the direction in which you want the tree bole to move. **DISPLAY NEXT SLIDE**
Slide 15: Scissor Cuts 	## Scissor Cuts **Say:** You can use scissor cuts when a hung-up tree is still attached at the base. To use this technique, create two hinges that work in tandem. Placing two undercuts oriented in opposite directions allows the two hinges to function in tandem. Both undercuts will close at the same time. The resulting downward movement and change in tree bole angle allows the hung-up tree to fall free. Often there is not enough weight to bend the hinge, so you may need a wedge or rope to move the tree. **DISPLAY NEXT SLIDE**
Slide 16: Pole Method 	## The Pole Method **Say:** Use a peavey or a pole made from a small tree to roll the hung-up tree off the tree it leans on. Attach the pole to the hung-up tree with a strap or rope and roll it away from you. As you gain leverage, you need to move away from the pole and stay away from the lever when there is a great deal of force on it. **DISPLAY NEXT SLIDE**

Slide	Content
Slide 11: Types of Companion Tools 	## Types of Companion Tools **Say:** There are many commercially available tools designed to provide a mechanical advantage when you need to push, pull, pry, or twist the bole of a tree. We encourage you to select companion tools created for this purpose rather than using improvised devices and techniques. Using custom tools may be your safest option when attempting to dislodge a hung-up tree. It may or may not be necessary to use a saw and a series of cuts. **Important! Companion Tool Safety** Never attempt to use tools or equipment without proper training. Training from a qualified individual is required, as improper use may result in serious harm, injury, or death. DISPLAY NEXT SLIDE
Slide 12: Falling Lever and Peavey 	**Say:** ▪ **Felling lever:** A multitool made to replace wedges that can provide lift during felling and roll logs during bucking. ▪ **Peavey:** A forester's lever with a pivoting, hooked arm and a metal spike at one end. ▪ **Grip hoist:** A portable manual hoist with wire rope that can lift, pull, and move heavy loads across great distances. DISPLAY NEXT SLIDE
Slide 13: Rope Winch 	**Say:** ▪ **Rope winch:** A portable manual hoist with nylon rope that can lift, pull, and move lighter loads across great distances. DISPLAY NEXT SLIDE

Slide	Content
Slide 14: Video: Hung-Up Trees 	**Say:** Next, let's watch a short video to give us a better understanding of hung-up trees. **INSTRUCTOR NOTE:** Answer any questions the class may have. **DISPLAY NEXT SLIDE**
Slide 15: Knowledge Check 	## Knowledge Check Give students a few moments to answer the questions in the student guide, then discuss the answers. Confirm the correct answers and clear up any misconceptions. **Q:** Define the term **hung-up tree.** **A:** A hung-up tree is a tree that has begun to fall, but has not fallen completely to the ground because it is lodged in or is leaning against another tree. **Q:** What question should you ask when evaluating a hung-up tree? **A:** Is there a target nearby, or is there likely to be one in the future? **Q:** If you are unable to remove the tree and your assessment tells you that it will continue to be a hazard, what should you do? **A:** Flag off the target area. **Q:** Identify and explain three of the removal techniques or alternate methods for mitigating hung-up trees. **A:** Roll out, perpendicular cut, using a driver tree, repositioning the tree, using scissor cuts, using a pole to twist the tree out, using a lever to roll the tree out, using a wrench, flagging and avoiding. **Q:** What tool can you use to roll a tree out of the tree in which it is stuck? **A:** A peavey or a pole. **DISPLAY NEXT SLIDE**

Slide	Content
Slide 16: Summary 	## Summary **REVIEW** Review the completed objectives on the slide. **Say:** I want to leave you with a final note on safety: **Remember**, do not attempt to evaluate and mitigate hung-up trees using these techniques without first receiving field training from a qualified sawyer instructor. **DISPLAY NEXT SLIDE**
Slide 17: Questions? 	**Ask:** Do you have any questions about hung-up trees?

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