

**Chapter 3**

**CROSS CUT SAW USE**



**LESSON PLAN OUTLINE**

**PROGRAM: SMOKEJUMPER**

**LESSON: CROSSCUT SAW USE**

**OBJECTIVES:** Upon completion of this lesson, the trainee will be able to safely and effectively use a crosscut saw using accepted procedures in falling and bucking techniques.

**INTRODUCTION:** Many trainees undoubtedly have used crosscut saws in the past. There are many techniques that will enable the user to expend less energy and perform a safer job. Those techniques will be discussed in this lesson plan.

**I. CROSSCUT SAW USE.**

**A. The different types of saw.**

1. Falling
2. Bucking
3. Tapers
  - a. Crescent taper ground saw
  - b. Straight taper ground saw
4. Tooth patterns
  - a. Champion tooth
  - b. Lance tooth

**B. Parts of the crosscut saw.**

1. Handles
  - a. Function
  - b. Types
  - c. Parts
  - d. Assembly
  
2. Blade
  - a. Cutting teeth
  - b. Raker teeth
  - c. Sawdust gullet
  
3. Oil use
  
4. Wedges
  - a. Types
  - b. Uses
  
5. Guard
  - a. Function
  - b. Types
  - c. Use

**C. Use of the crosscut saw.**

- 1. Safety equipment**
  - a. Gloves
  - b. Long-sleeved shirt
  - c. Hardhat

d. Safety glasses

**2. Advantages over power saws**

- a. More dependable and less temperamental.
- b. Less susceptible to damage when dropped by parachute.
- c. Safer when used by inexperienced fallers.
- d. Lighter and easier to pack out from the fire.
- e. Quieter.
- f. Slower action.

**3. Procedure with a crosscut**

- a. Requires two operators.
- b. All cuts start straight and must remain straight.
- c. The undercut can be sawed or chopped out. Remove all wood.
- d. Platforms can be built up or dug out to provide good footing.
- e. Always put the guard on the crosscut when not in use for protection of both the saw and sawyers.
- f. The proper way to carry a crosscut is to place it on the shoulder with the teeth outward (guard on), hand grasping the front handle from underneath the saw blade, with the rear handle off.
- g. All safety equipment and PPE must be worn. Techniques for the use of the crosscut saw are unique.
  - 1. The length of the saw is pulled through the cut, not pushed. Pushing will bend the saw, pinching it in the cut.
  - 2. The saw must remain level at all times. Lifting or dropping the ends of the saw will arc or bow the cut. An arched or bowed cut will not meet to form a proper undercut or backcut.
  - 3. Use all the saw to cut. Short strokes waste energy.

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4. Coordination is important. The two sawyers should talk and establish a rhythm of strokes.
5. The body position of the two sawyers is important to get maximum efficiency of energy expended.
  - a. A rocking motion works best if there is room.
  - b. Using just the arm to pull will tire a sawyer quickly.
- h. Crosscut techniques will be demonstrated and practiced in the field.

### 4. Felling

- a. Size up the tree.
  1. Species
  2. Size
  3. Soundness
  4. Dead limbs
  5. Burning top and/or bark
  6. Top heavy
  7. Direction of lean
  8. Nearby hazards, trees and people
  9. Slope of ground
  10. Wind direction and velocity.
  11. Position of standing or down timber that might deflect tree.
- b. Determine direction of fall.
- c. Clear brush and debris from working area, establish escape routes to a safe area.

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### d. Putting in the undercut.

1. The first cut is the bottom of the undercut. This cut must be level.
  - a. A minimum of one quarter of the trees diameter.
  - b. On the same side of the tree as the direction of fall.
2. The second cut is the top cut of the undercut. This cut is angled to intersect the bottom cut to form a wedge. As a minimum, the opening of the undercut should be  $\frac{1}{3}$  of the undercut's depth or 1 inch vertical for every 3 inches horizontal.
  - a. Must intersect the bottom cut cleanly and have all chips removed.
  - b. Can be chopped out with an axe or pulaski.
3. The "humboldt" undercut is not recommended using a crosscut due to difficulty of holding the saw into the cut.

### e. Cutting the backcut

1. The backcut must be parallel to the bottom of the undercut.
  2. Two inches above the bottom of the undercut to form an anti-kick-back step.
  3. Sufficient holding wood must always remain to maintain control of the tree so that it does not break, skip, or twist off the stump, and fall in any direction other than that intended—no matter how heavy the lean.
  4. Do not cut off the corners of the holding wood if side notching is used.
- f. Always use wedges as soon as possible to avoid the tree from setting back and pinching the saw.

**5. Bucking**

- a. Plan each cut before starting.
- b. Proper work areas must be chosen to insure safety.
- c. Clear working area.
- d. Avoid pinching the saw. Watch for compression and tension points of the log to be bucked.

**II. PRACTICAL TRAINING**

**A. Demonstration**

- 1. Safety
- 2. Felling
- 3. Bucking

**B. Practice**

- 1. Safety
- 2. Felling
- 3. Bucking

**III. NARRATIVE**

- A. This lesson plan is a basic outline for training necessary to be proficient in the use of the crosscut saw. Crosscuts are using sparingly at some bases and at other bases are dropped to several fires during a season. That being the case, it is hard to stay proficient in the use of the crosscut with actual experience out in the field. Make sure that each smokejumper has the basic annual refresher training in the use, care and maintenance, and safety procedures related to the use of the crosscut saw.