
Introduction

After working in the woods from Alaska to Arizona for more than 35 years, I've developed a profound appreciation for the precision and usefulness of the crosscut saw. There is an unfilled demand today for skilled crosscut saw users, particularly in the nearly 35 million acres of wilderness managed by the USDA Forest Service. My goal is to present tried-and-true techniques for using, appreciating, and caring for vintage crosscut saws.

I do not cover everything. Sharpening, a complex and exacting art, is left for the reader to discover in Warren Miller's excellent publication, *Crosscut Saw Manual* (1977, rev. 2003). I also will not cover complex felling techniques. I will focus on several topics:

- The saws themselves, with particular emphasis on good handles.
- The selection, function, and use of wedges. Wedges are used differently with a crosscut saw than with a chain saw.
- Bucking logs. Bucking comprises 90 percent of the trail work done with crosscut saws.

A condensed version of this text is included in the USDA Forest Service's Chain Saw and Crosscut Saw Training Course (Wolf and Whitlock 2006). Space and training time did not allow for its full inclusion there, so this book provides a more detailed reference. This 2007 revision includes updated safety information.



As a matter of policy, the USDA Forest Service requires crosscut saw users working for or on behalf of the agency to receive the required training and to be certified to perform the specific crosscut saw work they plan to do. Reading this book is not enough to provide the required training or to receive certification.

Most of what has been written about how trees and logs react to being cut with a chain saw was adapted from knowledge obtained from crosscut sawyers. Whether a tree or log is cut with a chain saw or crosscut saw, its reaction

to the laws of physics will be the same. While the principles of bind and gravity are the same regardless of the tool, how you deal with them is often quite different, depending on whether you are using a chain saw or a crosscut saw. We'll go into some detail about the correct crosscut saw techniques to help you understand these differences.

Historical Origin of Crosscut Saws

The crosscut saw did not come into common use in Europe until the mid-15th century. These early saws were rectangular with handles that fitted into sockets forged into each end of the blade. Early saws had a plain tooth (also called peg tooth) design. Over the next 400 years, numerous saw patterns developed. Many countries and regions had their own "national" patterns. Saws started to appear with a curve both on the back as well as on the toothed edge. But as late as 1900 in Europe, the plain and the "M tooth" pattern were the most common.

Imported saws were used in Colonial America, and by the mid-1800s they were being manufactured in this country. However, it wasn't until about the 1880s that saws were used for felling timber. During the golden age of crosscut saws, from 1880 to 1930, numerous saw and handle styles, tooth patterns, types of steel, and methods of grinding were developed (figure 1).



Figure 1—Crosscut saws ruled the woods from 1880 through the 1930s. A lot of effort was invested to improve and perfect this versatile tool.—USDA Forest Service photo, K.D. Swan, 1924, Flathead National Forest

The machinery to make these vintage saws began to disappear by the 1950s, as crosscuts were replaced by power saws. Today, no taper ground crosscut saws are manufactured.



Crosscut saws manufactured today, except possibly some of the custom competition saws, generally do not have the same high quality of materials or workmanship as earlier saws. This is reason in itself to cherish our vintage saws.

Nostalgia may be one reason to learn how to use crosscut saws safely, but an even better reason is for management in designated wilderness, where mechanized or motorized equipment is prohibited by law. Here, traditional tools like crosscut saws and axes are needed to clear trails, cut firewood, manage wildland fires, and maintain or restore administrative

buildings. In wilderness, a well-tuned crosscut saw is usually the tool of choice for felling trees and bucking logs.

Outside of wilderness, crosscut saws are the tools of choice:

- In areas of seasonal closures, such as wildlife nesting areas, because crosscut saws are quiet.
- When chain saws and internal combustion engines are prohibited because of fire restrictions.
- In situations involving miles of hiking and little cutting (minor trail clearing and smokejumping, for example) where the light weight of a crosscut saw makes it much easier to carry than a chain saw.

More and more, I see trail managers and others discovering that it's cheaper and more efficient to switch off the chain saw and pick up the crosscut. Some trail contractors have found that they pay lower worker's compensation insurance premiums when they use crosscut saws rather than chain saws.

With the right training and a sharp saw, it is amazing to see the esprit de corps and crew cohesion that develop among younger fire and trail crew members as they learn, master, and apply their crosscut saw skills.