



*Wooden-bodied buckhorn scrapers take only a few hours to make and can be shaped to fit the curves of any project.*

# The Buckhorn Scraper

*Smooth any contour with wooden-bodied scrapers made for the job at hand*

by Scott Wynn

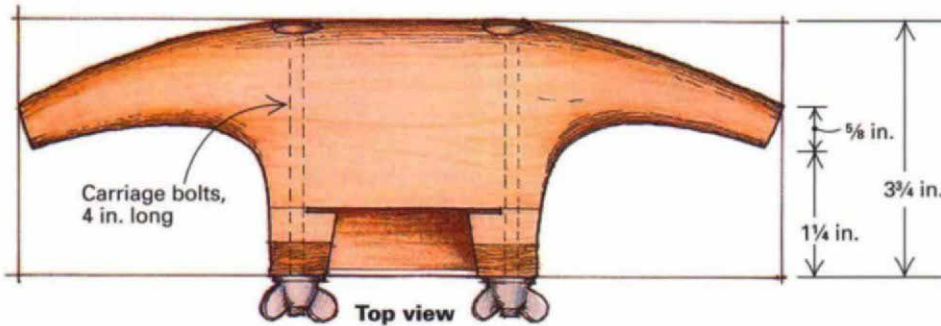
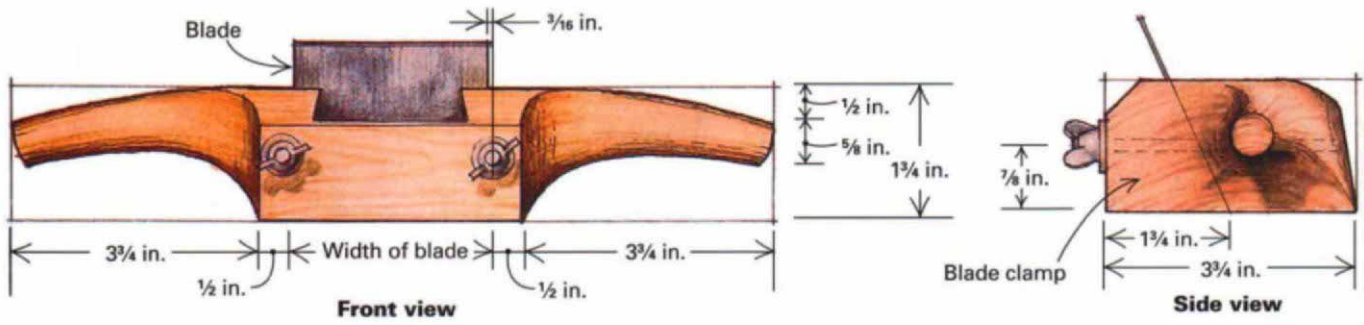
**A**n odd-looking scraper caught my eye at a tool swap several years ago. It had a round wooden body with handles flared out like horns, and the sole was curved along both its length and width. The old-timers called it a buckhorn scraper. I could see it would be comfortable to use, and that the handles would increase leverage and control. Thinking it a mere curiosity, I put the scraper down and went on to something else.

A year or so later, I built a set of eight cherry chairs with backs coopered in two directions. I needed a way to smooth the insides and outsides of the backs, preserve their shape and prevent grain

tearout. I thought of several methods, but nothing seemed right until I remembered the buckhorn scraper. I realized that if I had a few such scrapers with the right sole configurations, I could scrape all the surfaces of the chairs smooth while maintaining the compound curves (see the photo on p. 54).

As the drawings on the next two pages show, I started with a block of 8/4 maple and began by shaping the flared handles. To create a blade clamp, I cut away the front of the block at an angle and bolted it in place. A little work with a handsaw and a chisel opened the throat for chip clearance. I shaped the sole to match

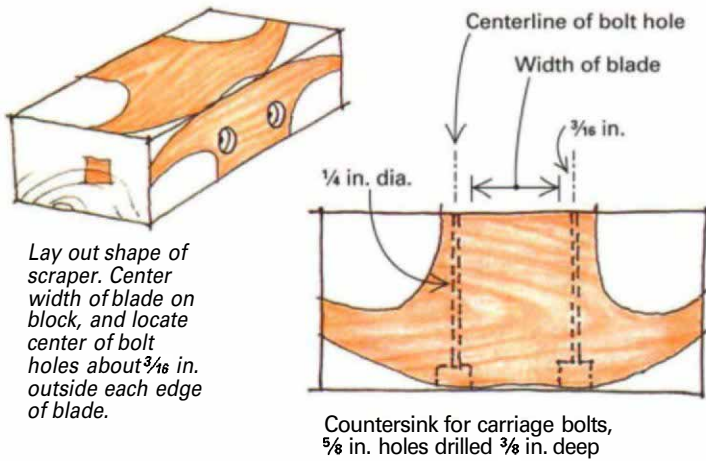
# MAKING THE BUCKHORN SCRAPER



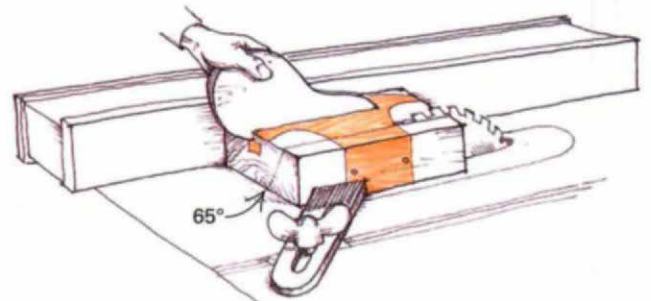
Make scraper from an  $\frac{8}{4}$  block of dense, close-grained wood such as maple or beech. Size it to width of blade.

1. Shape the body, and cut the blade clamp

2. Saw the blade clamp

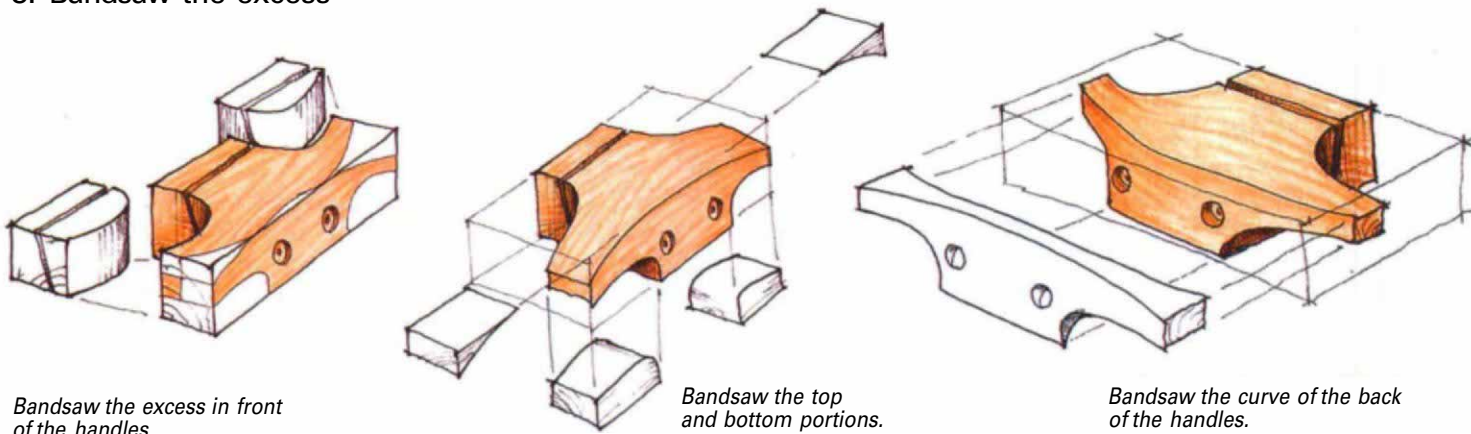


Lay out shape of scraper. Center width of blade on block, and locate center of bolt holes about  $\frac{3}{16}$  in. outside each edge of blade.



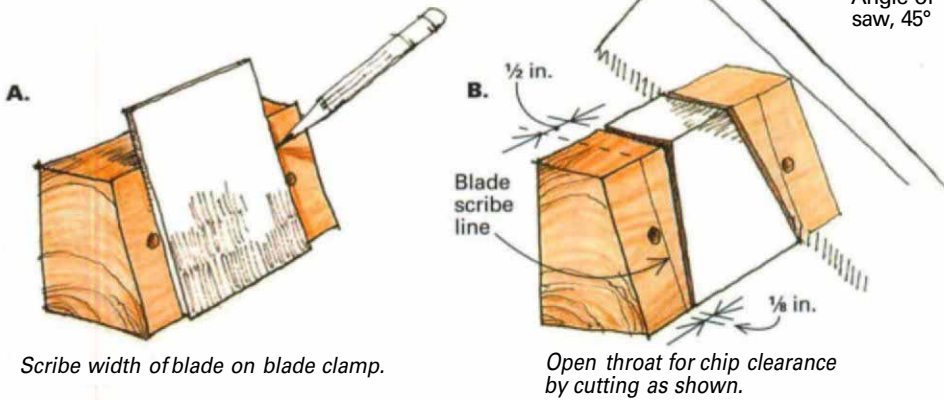
Cut blade-clamp portion free at a 65° angle. Bolt, hot-melt glue or tape pieces back together for bandsawing shape of body.

3. Bandsaw the excess

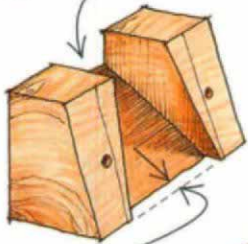




#### 4. Cut the blade seat

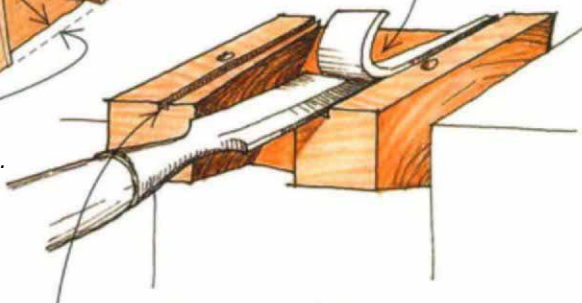


**C.** Clean up throat with chisel.



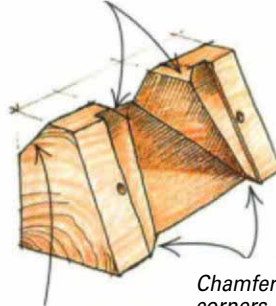
Cut back the mouth about 1/8 in.

**D.** Depth slightly less than thickness of blade



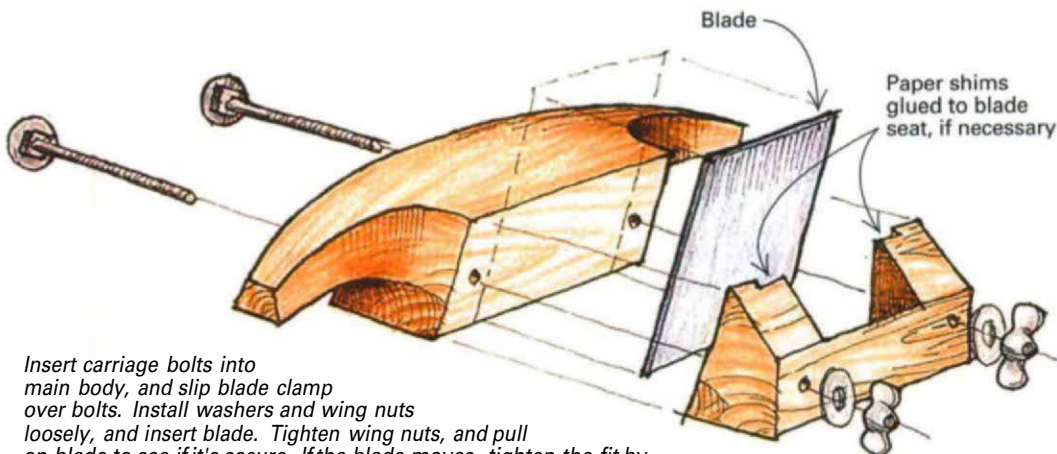
On scribe lines marking outside of blade, make a saw cut to a depth slightly less than thickness of blade. Pare blade seat down to that depth.

**E.** Chamfer here.



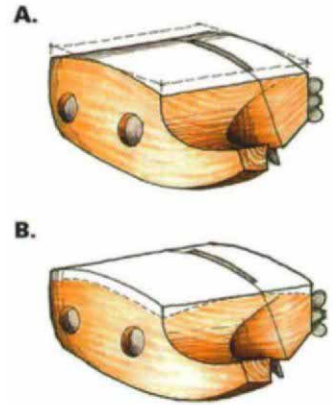
Chamfer corners of mouth.  
Cut front of blade clamp at an angle to bolt holes. Leave room for washers (see drawing 5 below).

#### 5. Fit the blade seat

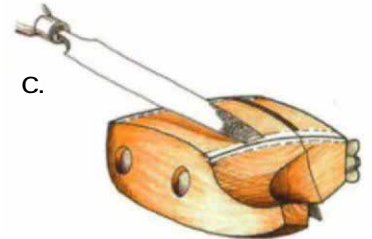


Insert carriage bolts into main body, and slip blade clamp over bolts. Install washers and wing nuts loosely, and insert blade. Tighten wing nuts, and pull on blade to see if it's secure. If the blade moves, tighten the fit by gluing paper shims to the blade seat. When the blade fits, round off and smooth the body with a rasp, scraper and sandpaper.

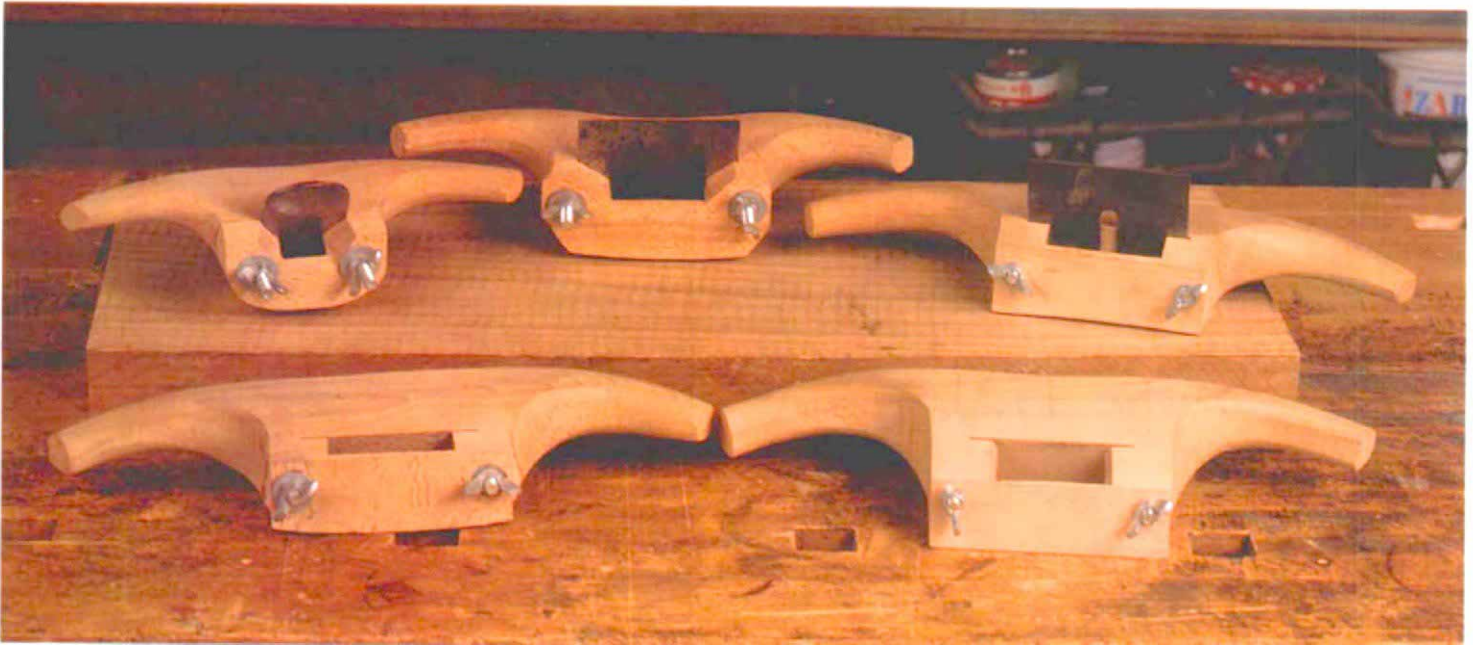
#### 6. Shape the sole



Mark curves on all sides of scraper to fit workpiece. Cut or rasp curve across length of sole, as shown in drawing A. Fair curve to line. Then cut across width, as shown in drawing B. Curves in each direction should be constant. If workpiece has been roughed out fairly evenly, use it to finish shaping sole of scraper. Lay 80-grit sandpaper on work with grit side up, and rub scraper over abrasive in direction you'll be scraping. Repeat with 100- and 120-grit paper.



Even when the sole is correctly shaped, the wood on either side of the blade may hit a high spot that lifts the scraper enough to prevent the blade from contacting the work. To avoid this, cut the sole on either side of the blade at a slightly more severe curve for the whole length of the scraper, as shown in drawing C.



**A scraper for any job—Over the years, the author has made a number of wooden-bodied buckhorn scrapers for concave surfaces, convex surfaces and compound curves. Some of the scrapers can share blades.**

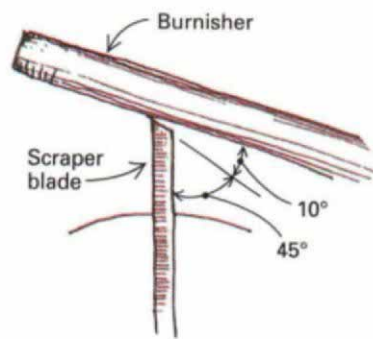
the work and shaped the blade to the sole. In a short time, I had a comfortable finishing tool.

**Shaping the blade**—I get my scraper blades from a variety of sources. I've used blades from my cabinet scrapers, bought new or used blades at tool swaps and made blades from old handsaws. A blade will often work in several other scrapers depending on the configuration of the sole. If the scrapers are curved only along their length, a straight-edged blade will work in all of them. Scrapers with the same radius curve across their width also can share blades. Because scraper blades have two useable sides, one blade can have two different profiles, further reducing the number of blades I need.

To give a blade the correct curve, I simply install it in the completed scraper so it's just barely exposed through the mouth. I mark the curve and remove the blade. When sharpened, the blade will be honed at a bevel, but when I'm shaping the blade, I grind the edge square down to the line. I check my progress frequently by reinserting the blade and sighting down the sole.

Once the blade is shaped, I grind a 45° bevel while maintaining the curve. Then I hone the back and the beveled edge of the scraper just as I do a plane blade. I turn the burr as shown in the drawing above.

These angles are a starting point. Harder woods often scrape best with a lesser burr angle and sometimes with no burr at all. I've also varied the bevel down to approximately 30° with good results. The hardness of the steel, the depth of the cut, the type of wood being scraped and the curve of the sole along its length all affect the amount and the angle of the burr. Determining the optimum angles for your scrapers will take experience.



### Turning a burr on a beveled scraper blade

*Using moderate pressure, stroke the burnisher along the bevel a few times at 45°. Then tilt up the handle of the burnisher, and take three or four strokes, tilting up the handle a little more each time. The last stroke is at about 10° to the bevel.*

**Using the scraper**—These scrapers are not tools for hogging off wood; I get the surface fairly even with a spoon-bottom or compass plane before using the scraper. If the surface isn't well-prepared, the scraper will skip, making it difficult to tell if the scraper is set properly. Initially, I set the blade in the scraper for a light cut by sighting along the sole and adjusting the blade until it protrudes evenly, just as I do on a plane. Then I make a few trial cuts.

I almost always push the scraper over the work. The difficulty in using this tool lies in keeping the blade in contact with the wood on work curved the length of the scraper. To do that, you must slightly rock the body of the scraper back and forth as you push it. Sometimes I put two fingers on the clamp portion of the scraper to get better control (see the photo on p. 51). Even so, there are strokes where the blade makes no contact.

I adjust the blade with a well-placed mallet tap and strike only the main body of the scraper, not the blade clamp. Lightly tapping the block behind the blade will back it out a little, and tapping behind the blade at one corner will angle the blade. Tapping the blade itself sets it deeper (not an option when the top of the blade also has an edge). Another way to advance the blade is by tapping the sole with a mallet.

Once I've scraped the entire surface, I resharpen the blade, back it off to a lighter cut and scrape again. I follow this with a small flexible scraper to remove any ridges. Then I sand with 120-grit paper on a shaped block and do the finish-sanding with 220- or 320-grit paper on a flexible rubber block.

*Scott Wynn is an architect, designer and builder of furniture in San Francisco, Calif.*