

The Bowyer's Edge™

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Thank you for your purchase of the Bowyer's Edge™. It can be sharpened and maintained by one of two methods.

1. Satisfactory results come from simply sharpening its blade with a 6" mill bastard exactly as you would a broadhead (<http://www.bowyersedge.com/broadhead.html>). Use the wooden jig to hold the blade securely while you file it. Slide the blade into the 45° slot and cradle the jig in the palm of one hand while you file the bevel edge with the other, using the plane of the jig to maintain your angle. Remove the wire edge.

2. Better results come by burnishing and rolling a hook upon its cutting edge, as with cabinet scrapers described in Chapter 4 of *Hunting the Osage Bow*. You will need:

- Flat Oil, Water or Diamond Honing Stone (not included with this kit).
- Burnishing Tool - The hardened 2 1/2" steel burnishing rod is fitted into a palm-sized handle for comfortable use. Always keep a thin film of oil wiped on its surface to protect it from rust during storage and to lubricate its mission.

• Blade Sharpening Jig - Requires that you mate the jig to the ground bevel of the scraper blade. (See Fig. I for blade terms.) Slide the blade into the 45° slot in the jig body and turn the adjusting screw in or out until the blade bevel lies perfectly flat on your sharpening stone. Wipe the bevel along its width and length with a felt-tipped marker to help you see when the adjustment is correct. Turn the adjustment screw in or out until one pass along the stone removes ink across the width of the bevel, toe to heel. Once established, the screw should never require further adjustment.

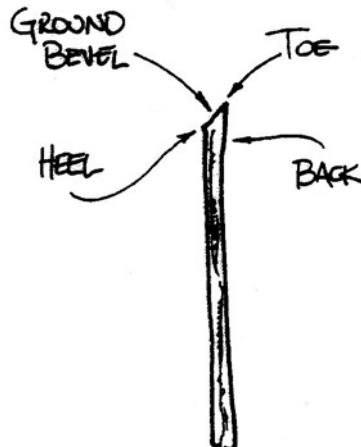


FIG. I -
BLADE TERMS

Instructions for Rolling and Burnishing a Hook

1. Hone the blade on its ground bevel, maintaining a 45° angle to the stone with the use of the Blade Sharpening Jig. Stroke into the cutting edge or "figure 8" the blade over the stone until you've raised a wire edge the length of the blade. (See Fig. 2.)

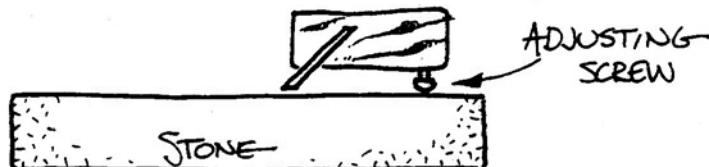


FIG 2 - SHARPENING

Turn the blade flat on its back onto the stone and wipe it back and forth to hone off the wire edge. Return it to the jig and then back flat to the stone with light pressure until the wire edge disappears completely. The blade edge should now be very sharp, free of nicks or dull spots. This foundation is important. You cannot roll a sharp hook onto the cutting edge without first preparing a sharp edge.

2. Consolidate the back side of the scraper blade with the burnishing steel by holding the burnisher perfectly flat on the blade's back and wiping it vigorously 15 to 20 times until the area near the toe becomes shiny. A drop of 3-IN-1 Oil on the blade will aid the process.

3. Turn the blade over. Holding it between your thumb and forefinger, or cradling it in the jig, lay the burnisher along the 45° bevel and rub it while slowly dropping the burnisher angle onto the toe by a few degrees, whereupon you should rub it vigorously at that angle about 10 to 15 times. This will roll a "hook" which you can feel with your finger along the sharp edge. Too big a hook (too much pressure) will shorten blade life and dig into the work. Too light a hook will create sawdust rather than clean shavings.

4. Insert the top of the blade through the bottom of the tool when assembling. This will keep you from bunging a sharp and vulnerable blade. The hook determines the direction of cut and must point toward the shaving escapement milled into the brass, projecting slightly below the sole.

5. You may wish to angle the blade in your B.E. so that one side cuts deeper than another, but pressure upon the tool has as much to do with shaving thickness as depth of the blade. To set the

blade depth quickly and evenly, glue a quarter inch wide strip of newspaper or Post-it or similarly thicknessed paper along the length of one edge of your sharpening jig, on top, to act as a shim. Place the toe end of the brass atop the paper shim, the heel upon the wooden top. This provides a small space under the brass wear plates where the tool bridges the wooden top and the paper shim, just enough for a loosened blade to slide down onto the jig a slight amount beyond the brass sole. Snug up the capture screws (do not over tighten them or you will pop the brass wear plate off the bottom of the tool).

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You can pull to cut or turn the tool 180° and push to cut. You can cut cleanly with or against the grain. You will always cut more smoothly if you address the tool at a slight skew angle to the work surface. Always keep pressure forward, ahead of the blade, on the tool. If you place pressure on the heel of the tool, the tool will have a tendency to bounce and chatter. If you have trouble using the tool, read the article on the bowyersedge.com website entitled "Using the Bowyer's Edge." <http://www.bowyersedge.com/bowedge.html>

When the blade is dull, simply remove it through the bottom of the tool and repeat steps 2 thru 4. You can do this several times before you have to go back to the hone to reestablish a sharp 45° bevel.

When you can no longer raise a cutting hook by repeating steps 2 thru 4, it is time to go back to the hone and follow steps 1 thru 4 again. Before you do, lay any remnants of the hook flat with the back of the blade as in step 2.

Tapering Shafting with the Bowyer's Edge™

Because of its ability to remove thin shavings cleanly with or against the grain, the Bowyer's Edge™ makes an excellent tool for manipulating spine or shape on parallel hardwood shafts. With it you can barrel taper or full length taper arrows quickly, efficiently and accurately. A three-stage taper on a $23/64$ ths shaft yields a nock or pile diameter of approximately $11/32$ nds. A three-stage taper reduces an $11/32$ nds shaft to $5/16$ ths at the third stage. Barrel tapering (done to both ends of the shaft) does not really affect spine because the center of the shaft, the locus of spine, retains its original diameter; but full length tapers drop arrow spine by an average of four pounds.

You must fashion a jig to cradle the shaft as you rotate and pare it. A $3/4$ " x $2-3$ " plywood scrap 27 " long with a "vee" groove ripped its length down the middle to half its thickness works nicely. If you don't have access to a table saw or router, simply tack and glue two culled shafts side by side on a 27 " scrap of stock, just far enough apart to form a cradle so that the shaft won't crawl out as you rotate and pare it.

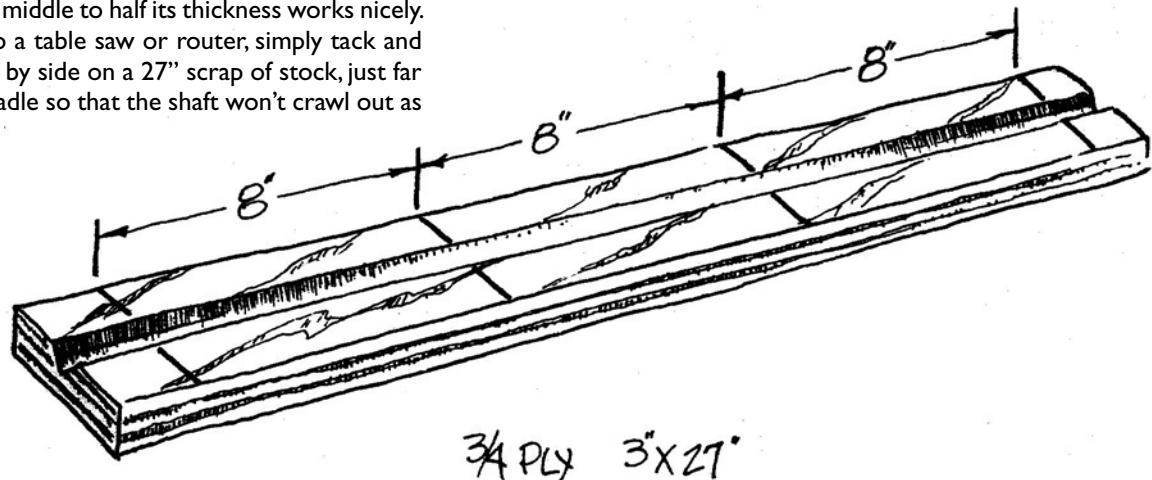
Push a small brad $1"$ in from one end to act as a stop at the nock end, into the groove far enough so that the tool's blade can travel over it safely. For a typical 27 " arrow, measure from the stop and mark three stations with heavy lines across the jig at $8"$, $16"$, and $24"$ for full length tapers, the Howard Hill preferred them, or three stations at $2"$, $4"$, and $6"$ for barreling. If you wish variations, use different colors of marker to lay out lines. This completes the jig.

Cut the shafts to their gross length before tapering (e.g., 28 " for a 27 " net arrow shaft). So that you can determine when you've cut a full revolution around the shaft, either wash each shaft with a diluted stain or place each shaft in the jig and mark its circumference with a series of dark pencil lines midway between each station (for example, at $4"$, $12"$, and $20"$ intervals for full length tapers on a 27 " shaft).

With the nock end against the stop, hold and rotate the shaft from the overhang on the pile end with the left hand as you wipe the Bowyer's Edge™ from the first jig layout line (e.g., at $8"$) to the nock with the right hand. The tool does not require much pressure to work effectively, but keep that pressure to the back of the tool body so that it rides over the end of the shaft (rather than dip at the throat and snipe the end of the shaft as it completes its cut). You can monitor the cutting process easily because the Bowyer's Edge™ removes a streak of stain or a portion of pencil line with each pass. Approximately 21 passes complete one revolution on a $23/64$ ths shaft. When the stain or circumference line is gone, move back to the next station (e.g., at $16"$) and repeat the process clear to the nock end for another complete revolution, and then from the $24"$ station to the nock end for the final revolution. If you are barrel tapering, simply flip the shaft end for end and do the pile end the same as the nock end.

You may want to finish-sand the tapered shaft using a piece of sandpaper on the coved sanding block included with your tool. However, since the parallel facets left by the Bowyer's Edge™ are clean, crisp and tiny, you may decide to leave them.

Tapering combinations are unlimited. Barrel tapers. Nock tapers. Full length tapers. In all proportions or combinations. Barrels reduce oscillation and can be moved back and forth along the shaft as well. In general, moving them toward the nock reduces spine and increases stability.



You can use the tool as it comes shaped to you or you can carve the handles to any comfortable shape you wish. Here are outlines that I used on the original Bowyer's Edge™ tools with hand-shaped bodies. Trace or glue the side view onto the wooden body blank first. Shape to outline, maintaining the blank's right angles. Then treat the top view similarly. Roll tiny facets on the sharp wooden corners near the brass and onto the narrow necks of the tool handle. Let these facets widen and form an octagon as they flow into the meat of the handle. You can then sand them smooth, leaving them faceted, or proceed to round them by mushing over all 16 corners. Finish with a few coats of tung oil.

