

## Saturday Program Meeting

### Sharpening Tools

John & Rebecca Phelps, Richard Hicks

Want a good reason to cleanup your shop? Agree to



host a Saturday Program Meeting. It took me about 2 weeks to cleanup my shop - I no longer hold the title of the messiest shop in the club! Rebecca was so

impressed, she insisted I put a picture in the write-up.

John started the meeting by showing us how to sharpen hand tools like chisels and plane irons. John says the sharper the cutting edge, the less effort it takes to cut the wood. But, it takes a lot of time and effort to put a keen edge on your tools.

If the existing cutting edge is damaged, you need to grind the edge until all of the damage is gone.



This is best accomplished with a slow speed (1,750 rpm) bench grinder. Caution: most of the bench

grinders are high speed (3,450 rpm) - they can be used but you must take extreme care not to overheat the edge when grinding!

Since there are several methods you can use to sharpen an edge, John started by showing the least expensive - sandpaper adhered to a flat surface. John uses 320, 600 and 1,500 grit wet/dry sandpaper. It can be adhered to a flat



piece of glass with water or to other flat surfaces with repositionable spray adhesive (available at most fabric stores). The 300 grit is used for the initial sharpening. The 600 grit takes it to a fine edge and the 1,500 grit puts a mirror smooth finish on the edge.

The first step in sharpening a chisel or plane blade is making sure the back of the blade is perfectly flat from the cutting edge back at least 1 inch. This ensures a straight, smooth cutting edge. Once the



back is flat and polished, you can start working on the front of the cutting edge.

There are numerous jigs available that will help you keep a constant angle while you are sharpening the edge. John prefers to do it by hand. He rocks the blade until he finds the flat part of the bevel, locks his arms and wrists and starts a smooth, back and forth, stroke. This keeps correct angle on the blade during the sharpening steps.

Another hand sharpening system uses Japanese water stones. You can achieve a good sharp edge with three stones - 800, 1,200 and 6,000 grit. The stones should be kept wet at all times and in our part of the country, it helps to add a drop or two of bleach to keep the algae and slime from growing on your stones. One drawback to the stones - they are soft and prone to dishing out during use. They have to be flattened before each use. This is easily accomplished by rubbing them across a piece of 320 grit sandpaper mounted on a flat surface.

The newest sharpening stores have a diamond impregnated surface. Normally, the stones have two grits, one on each side of a flat substrate mounted in a holder. With the use of water as a lubricant during the sharpening process, the wood holders have a tendency to fall apart. The stones are pretty expensive, but last forever, cut very fast and put a very sharp edge on your tools.

If you insist that your sharpening tools have power cords attached, there are several tools available. If you choose a bench grinder, make sure it is a slow speed one. Equip it with a 180 grit aluminum oxide wheel for the sharpening and a rouge wheel for polishing the edge. A belt sander works well due to the slow speed of the sanding belt. Use a 180 or 220 grit belt. It normally will not overheat the cutting edge, but you should keep a small container of water available to keep the edge cool as you work on it.

There are several slow speed, water cooled sharpening systems available. Some, like the Makita, have the stone mounted in a horizontal position and they grind a flat bevel on the cutting edge. Others from Delta and Tormex, mount the wheel vertically and they make a hollow ground cutting edge. They can be fairly expensive, but they take a lot of the work out of keeping your tools sharp and, if used and maintained properly, they will produce a sharp cutting edge. Most of them come with an array of attachments that help you put the correct bevel on the cutting edge. You can sharpen almost any hand tool on these machines from scissors to kitchen knives for the house to planer blades for your shop.

Rebecca demonstrated sharpening lathe tools. She used the Delta sharpening system. It comes with a



wet and a dry stone – she prefers the dry stone for her lathe tools because it cuts faster. That way she can touch up the cutting edges and get back to turning

much quicker. Lathe tools need a smooth, even bevel but don't require the mirror smooth finish that chisels and planes require. The lathe provides the



muscle needed to perform the cutting process. It helps to have one of the 'teardrop' shaped stones available to knock the burr off the inside edge of the

gouges. Scrapers actually use the burr as a cutting edge. There are a lot of different shapes and styles of lathe tools. The correct one is the one you know how to use and are comfortable with. Richard commented that he normally uses his stationary belt sander, with a 180 grit belt, to sharpen his lathe tools. Rebecca help several people sharpen their lathe tools while they were there – they commented latter how much better they cut when she finished with them.

I demonstrated sharpening thickness planer and jointer blades on my Tormex wet stone grinder.

Sharpening long blades requires the use of a special



jig to hold the blades at a precise angle during the sharpening process. Tormex provides an angle gauge with their system that helps if you want to change the angle of

the blades. Shallow angles work better with softwoods – steeper ones are better for hardwoods. The Towmex system comes with fairly good instructions for using the long blade attachment, but basically, you set the height of the holder to get the proper angle on the blade.

I find it helpful to color the bevel of the cutting edge with a magic marker prior to starting the sharpening process. That way you can tell exactly where the sharpening is taking place and that helps you set and maintain the proper grinding angle. This technique is useful when sharpening any type of cutting edge.

Once the proper angle is set, simply move the holder back and forth until the edge is sharp. Since the wheel turns real slow and it's water cooled, you don't have to worry about heating the cutting edge. When the edge is sharp, use the stropping compound on the leather wheel to remove the burr on the topside of the blade. If you mark the height setting, you can use the same setting every time you 'touch up' the edge of your blades.