Sharpen with Sandpaper

Produce razor-sharp chisels and plane blades in less time, with less mess

BY BRENT BEACH

For years, no matter what method I used, my sharpening efforts were a disappointment. Then I tried high-quality sandpaper as the sharpening medium, used with an angle jig. To my surprise and delight, the process proved to be remarkably quick, easy, and effective. Indeed, it now takes less than two minutes on average to sharpen a dull plane blade or bench chisel with a perfect bevel angle every time.

Sandpaper sharpening has been around for a long time. As the name suggests, it uses sandpaper as the sharpening medium, rather than traditional oilstones or waterstones. The paper is glued temporarily to a flat surface, such as the top of a tablesaw or jointer, or more commonly of late, a piece of glass.

I now use a commercially available jig for most of my honing, but for a long time my jig was shopmade (check it out on my Web site: www3.telus.net/BrentBeach). I still use the shopmade jig when I want to add a shallow back-bevel to the flat side of a plane blade. The commercial jig will produce a back bevel, but it's limited to an angle that's not to my taste.

After switching to sandpaper sharpening, I experimented until I found the technique that worked best. I now use high-quality sandpaper that has a remarkably consistent grit size and an adhesive backing that secures it solidly to the glass. That way, as I sharpen, the paper doesn't push up in front of the cutting edge and change the sharpening angle. And I add three microbevels, which gets me through the three successive grits of sandpaper more quickly.

Start with three pieces of glass

The sandpaper must be mounted to a flat surface. I use standard window glass. It's inexpensive, available at any glass shop, and more than flat enough. Because my sharpening procedure requires three different sandpaper grits, I use three pieces of glass, each measuring 5mm thick by 6 in. wide by 16 in. long. A glass shop will cut them to size for you. For safety's sake, take a few minutes when you get them home to smooth the sharp edges with sandpaper.

To strengthen and protect the glass, glue it to a backer board. I use ¼-in.-thick hardboard (Masonite), but plywood also works. I use a glue called Weldbond (www.monstermosaics.com; 888-236-4001), but I suspect that any glue that bonds wood and glass will work. Apply a thin coat of glue to each mating surface, then place the glass on the backer. A few pieces of masking tape prevent the glass from sliding, and a stack of books on top holds it down.

Use high-quality sandpaper—The most important part of my system is high-quality adhesive-backed sandpaper. I use microfinishing sheet abrasives made by 3M (www.toolsforworkingwood.com; 800-426-4613). Compared to regular sandpaper, the grits on this 3M product are more

Sandpaper needs a flat surface

To ensure a flat bevel, the sandpaper must be mounted to a flat surface. A piece of window glass serves that need more than adequately.

Strengthen the glass with a backer board. *The glass becomes less fragile when glued to a piece of hardboard.*

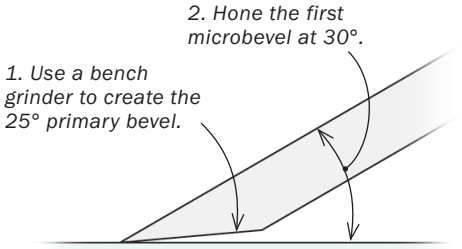
Peel away the plastic backing on the sandpaper. *Although the paper is self-adhesive, apply a thin coat of soapy water to the glass. This will make it easier to position the paper.*

Roll out the bubbles. *Air bubbles trapped under the paper can cause it to rip when sharpening. Use a roller of some sort to push the bubbles out to the edge.*

Use a honing guide for fast, accurate results

Speed up the sharpening process by raising the blade angle after each grit. This reduces the amount of steel removed at each step.

Start with 15-micron paper. *Add a little baby oil or mineral oil to help float away the steel filings. Set the jig at 30° and roll it back and forth, keeping the wheel off the sandpaper. It takes a minute or less to establish the first microbevel.*



uniform in size. That means you are less likely to get unwanted deeper scratches from an occasional oversized grit in your paper. Plus, because the sandpaper mounts firmly on glass, the abrasive stays flat. I use three grits—15 micron, 5 micron, and 0.3 micron—one for each piece of glass.

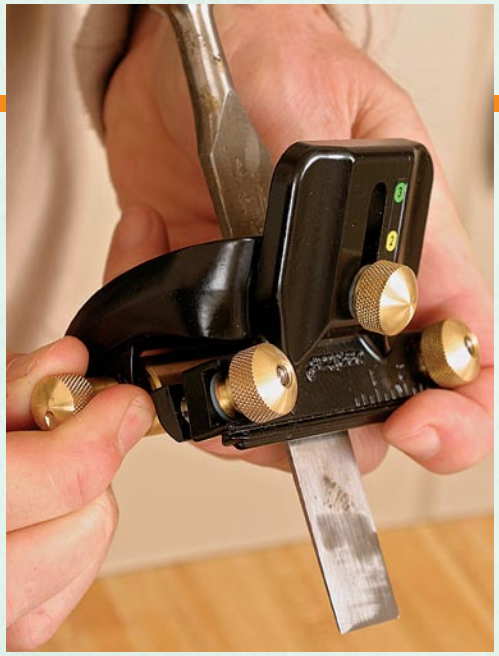
It's important to apply the paper carefully. Any dirt or air bubble can leave a bump, and even a tiny bump can nick the edge of a tool or catch an edge during sharpening and tear the paper. Before adding the paper, wash the glass with soap and water to remove odd pieces of dirt or sawdust.

Cut the sheet abrasive in half lengthwise and remove the backing paper. Wash your hands with just a little soap on them (not too wet) and rub your hand on the glass to dampen the surface. If you tilt the glass and water runs off, it is too wet. Add the paper carefully to avoid trapping air bubbles between the glass and the paper. Place one end of the paper on one end of the glass, lowering the paper until you reach the other end. The soapy water will prevent the adhesive backing from adhering immediately, so you can slide the paper around until it's centered. The water will dry through the paper in short order. No matter how small they might be, roll or push out any air bubbles.

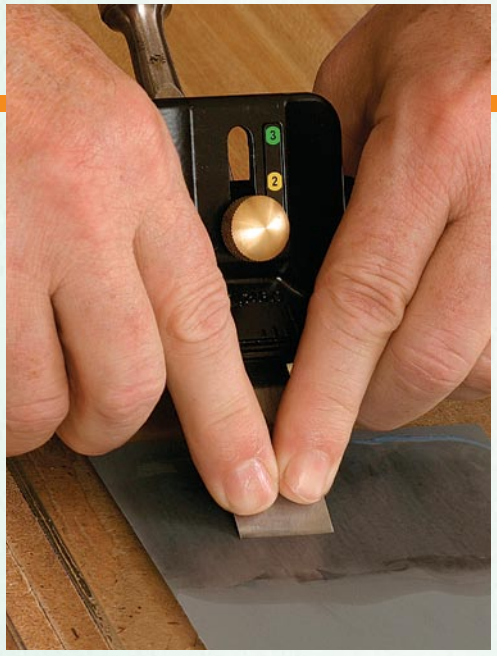
A jig ensures perfect microbevels—Because I use microbevels, I must hold the cutting edge at a consistent angle every time. I've long been partial to my shopmade jig, but of late, I've also learned to like the Veritas Mk.II jig (part No. 05M09.01; $48.50; www.leevalley.com; 800-871-8158). The Mk.II accepts most plane blades and bench chisels, and allows me to establish three microbevels quickly.

Before you start honing, grind a fresh 25° primary bevel on the blade. When grinding, make sure the edge ends up square to the chisel or blade. After the edge is ground, set the Mk.II to 30° and mount the blade or chisel. Make sure the knob on the eccentric roller is in the 12 o'clock position. Then, put a little baby oil or mineral oil on the 15-micron abrasive. As you sharpen, the steel that's removed will end up as tiny filings. You'll want enough oil to float the filings out of the abrasive so that the blade can push

Photos, except where noted: Tom Begnal; facing page (bottom right) and drawings: Michael Pekovich

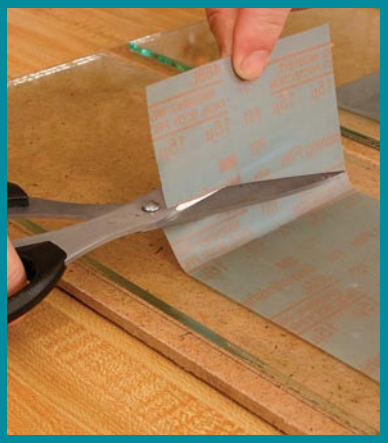


Easy adjustment. *A quarter turn of the knob on this Veritas jig lets you add 1° to the initial angle of the microbevel; another quarter turn adds 1° more.*



Continue through the grits. *With the jig set to 31°, Beach hones the second microbevel on the 5-micron paper. He then raises the angle to 32° for the final passes on the 0.3-micron paper.*

Trim the paper as it wears



When a section of paper finally wears out, simply peel up the worn section and cut it off with scissors. Any residue from the adhesive backing can be removed from the glass using baby oil or mineral oil and a soft cloth.

them along the sheet for a natural cleaning action. When you're finished, you can clean up the excess oil with a paper towel.

To start, rest the edge of the blade in the oil and pull back first (this prevents paper rips if there is a hidden bump or bubble at the edge), then forward and backward a few times with light pressure. Keep the roller of the jig off the sandpaper. Check the bevel after no more than a couple dozen strokes. You should see a new bevel forming at the edge. Typically, it need be only about one-tenth the width of the 25° primary bevel. Total actual sharpening time at the 15-micron grit shouldn't be more than a minute.

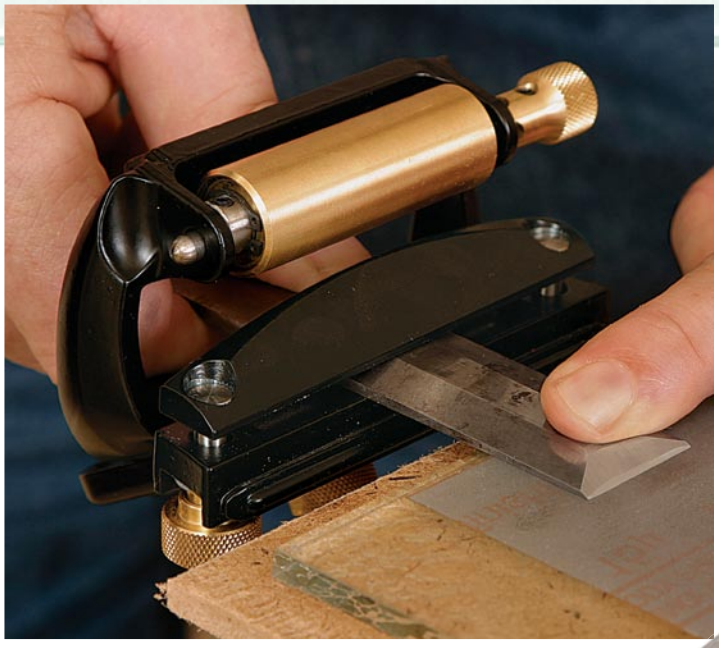
Now, change the angle of the jig from 30° to approximately 31°. That's done simply by turning the knob on the jig's eccentric roller to the 3 o'clock position. Repeat the honing steps with the 5-micron grit. I normally spend no more than 30 seconds at that grit.

Finally, change the angle of the jig from 31° to approximately 32° by turning the eccentric roller knob to about the 6 o'clock position. Repeat the honing process with the 0.3-micron grit. You should need only a dozen or so strokes to add this final microbevel.

At this point, you will have a burr on the back of the blade or chisel. To remove the burr, flip the jig and hold the back side of the blade or chisel flat against the 0.3-micron paper. Slide the blade back and forth a few times until the burr breaks free.

That's it. The edge will be razor sharp and ready to go to work. When it begins to dull, place it back in the jig and rehone it, always working through all three grits. If your jig is already set up, you can complete a rehoning in less than two minutes. □

Brent Beach lives in Victoria, British Columbia, Canada.



Remove the burr on the back. *To remove the burr that forms on the back of the bevel edge, the final step is to place the back of the chisel on the 0.3-micron paper and slide it back and forth until the burr breaks off.*

Instant edge. *In less than two minutes, Beach hones an edge to 0.3 microns. As a means of comparison, an 8,000-grit Japanese waterstone equates to 1.3 microns.*