



The Veritas Lapping Plate

Reviewed by Greg Rössel

With laser-guided plunge routers, high-powered nail guns, muscle-machine handheld planers, and granite-topped tablesaws getting top billing on home-improvement TV shows and in the big-box stores, it's understandable why the humble hand tool is viewed as an anachronism by many builders. That's unfortunate, as a well-tuned (non-electric) hand tool can often be the ideal one for the job. For smaller projects, these implements can swiftly and effectively complete a task with accuracy and nuance before the electric tool even gets its boots on. Indeed, it really should be just a matter of choosing the right tool for the job.

Unfortunately, it's not just bad press that keeps the mechanic from using a chisel, spokeshave, or rabbet block, or jointer plane; rather, it is more likely that the tools they have been using were badly maintained, are poorly finished, or simply not well made. Hand tools will only function properly if they are properly tuned. If one has used only substandard hand tools, it is easy to assume that all related hand tools are slow and ineffective. On the other hand, even a dull power tool can muddle through a job—if enough smoke, time, and noise are involved.

Here's the situation: Antique hand tools (including those made by venerable manufacturers) that are purchased at tag sales have often been abused or simply worn out of kilter. While they'll look fine in a display case, they no longer work as intended. That is to be expected. What may not be expected is that a brand-new off-the-shelf tool may be in even worse shape. Indeed, while there are still a few excellent manufacturers that properly finish their tools before selling them, generally hand tools are not ready to use right out of the box

or bubble wrap. They require at least some preparation before they can be used effectively the first time.

Indeed, these days, unless you spend a sizable chunk of cash, you can assume the tool you buy will essentially be just a near complete kit that still needs a bit of finishing and assembly. This is not entirely a bad thing. Hand-tuning a tool at the factory can be an expensive process. Often, with a bit of elbow grease and time, a lower-end Yugo (new or old) that is made with good metal can be transformed into a bargain-basement Mercedes.

One prime suspect for poor performance in a plane or spokeshave is the cutting iron (blade). It may just need sharpening. On the other hand, it may be worn beyond redemption or be of poor quality. Occasionally, the iron has been installed upside down. Many times the problem can be remedied by simply installing a heavier, aftermarket iron. Sometimes, however, the difficulty can be traced to an unlikely suspect: the back side of the iron. Removing scratches from the back of a plane iron or a chisel to get the surface smooth and flat greatly increases the chance of getting a truly sharp edge.

The next tool-tuning task is to deal with irregular previously ground plane soles. Smoothing the sole reduces friction between the plane and the stock and allows the tool to work better and more accurately. Lapping is the technique of honing the ground side of the tool against a really flat substrate that has an abrasive on it so that the finished surface ends up truly dead flat and square. What sort of substrate you use depends on what you have and your abrasive philosophy. Some mechanics might use a bench stone. Some nerves-of-steel sports have been known to give the tool a quick tune-up on a standing belt sander. (Definitely not for the faint of heart—plenty of fast action, and best useful perhaps for heavily pitted plane soles.) For a quick and thrifty approach, others will whip up a homemade lapping plate by applying several different grits of wet/dry sandpaper mounted to either glass, coated plywood, marble, or even the saw table using a spray adhesive. This is effective, although you can go through a lot of ripped and torn sandpaper until you find the right brand. Metal fundamentalists might go the traditional route, using silicon-carbide grit on a plate (glass works). When done with honing oil or kerosene, lapping can be a messy business indeed and the object being lapped tends to suction itself to the surface when worked against the plate.

For another option, and the point of this review, there is the Lapping Plate from Veritas. Measuring 12" × 4½" × 1½" high and weighing approximately 14 lbs, this iron plate has the gravitas or at least the heft of an elegant chunk of depleted uranium and is large enough to accommodate even the sole of a jack plane. Apparently the iron was chosen for its dimensional stability and material consistency—i.e., no blade-scratching carbides in the material. The bottom and sides are nicely machined and, to assure the trueness of the lapped material, Veritas claims that the top has been ground flat to within 0.001" over the entire surface. As the process utilizes a mixture of cutting oil and either silicon carbide or aluminum oxide for lapping, a unique circular and wave channel pattern (reminiscent

of the old Pan Am airways logo) has been cut into the lapping surface, intended to eliminate resistance from hydraulic locking and to capture excess oil, abrasive, and slurry.

The lapping plate is not intended for heavy-material removal; rather, it is designed to condition or smooth previously ground surfaces. To that end, Veritas recommends a relatively fine 280-grit for tuning twisted or wavy objects, 400-grit for ground surfaces with a slightly rough texture, and 600-grit for surfaces requiring little material removal. To prep tools with heavy pitting and/or initial heavy metal removal, probably first using the aforementioned sandpaper technique with coarser grits would be a good way to go.

After initially conditioning the plate with oil, the plate needs to be set up in place for work. Any sort of lapping (well, maybe not the belt-sanding sort) is a slow, almost Zen process, but at least it's tedious and repetitive. Thus, the operation should be set up at a good working height to reduce the chance of repetitive-motion injury. The table on my bandsaw seemed to work for me. I used sliding bar clamps against the ends to anchor the plate in place, and placed newspaper under the plate to absorb the oil that inevitably leaks from the surface. A boom box with a rousing book-on-tape or a vigorous radio talk show is also a useful optional appliance to help get you through the project.

The process begins by adding abrasive slurry to the plate. That done, it's time to hone. Note on lapping plane soles: Don't remove the blade and cap iron. Instead, leave the plane assembled and back off the blade so it doesn't protrude, but leave it in the plane. This maintains normal tension and operating shape of the tool. The manual calls for moving the tool in a slow, figure-eight pattern that creates a uniform pattern on the tool and encourages uniform wear, thus prolonging the life of the lap. Veritas counsels patience and suggests the minimum lapping time of at least 20 minutes for the initial session, then cleaning the tool before proceeding on to an additional 10–15-minute session.

After the aforementioned requisite amount of elbow grease has been applied and a mirror-smooth finish is achieved, it's time to clean the black grease-like slurry smudge from the tool. This was faster and easier than I thought it would be. Just wipe off the excess with a paper towel and give the tool a wash-up with dish detergent. Then apply oil or wax, and you're in business.

The verdict? After you initially lap a plane sole or cutting iron with sandpaper, the Veritas Lapping Plate can definitely bring your funky tool to a satin-smooth finish at least as good as that of the best tools available—if not better. However, given the time factor involved, I'm not sure I'd have the patience to tune more than two or three tools year. Maybe after I retire....

The Veritas Lapping Plate retails for \$85; a set of five Lapping Grits (2-oz each) for \$22.50; and the requisite honing oil for \$5.50. Contact Lee Valley Tools Ltd., P.O. Box 1780, Ogdensburg, NY; 13669-6780; 800-871-8158; www.leevalley.com.

This article first appeared in the January/February 2011 issue of WoodenBoat magazine.