Flattening Wide Panels by Hand

A flat, blemish-free surface doesn't have to take all day

by William Tandy Young

Sooner or later, most woodworkers will have to flatten and thickness a plank of solid wood wider than their jointers or planers can handle. When I have a lot of wide panels to flatten, I take them to a local millwork shop. The big jointer and planer can do the job in minutes, and the wide-belt sander can thickness heavily figured wood without tearout. Typically, I can have all the major parts for a large, solid case-work piece sanded to 120-grit on both sides in about 30 minutes. Sanding usually costs about $30—money well-spent.

When I have only a few panels to flatten, however, I stay in my shop and do the job with hand tools. The work is satisfying, and it goes quickly. It took less than an hour to flatten one side of a 16-in.-wide cherry board. With a jointed straightedge and just a few commonly available hand tools (a No. 7 jointer plane and a No. 80 cabinet scraper), I can flatten just about any panel, even one many times wider than my planer.

Many woodworkers I know own 12-in. or 15-in. planers, but few have jointers with a capacity of more than 8 in. And there's the rub. By learning how to flatten one side of a wide board with hand tools, you can still take advantage of your planer for thicknessing. You won't have to rip boards down to size, joint them and then glue them back together. You'll save time and have fewer gluelines.

Using hand tools to flatten a panel that's too large for your jointer or planer is also more efficient and less annoying than other low-tech methods. I've surfaced solid panels with a belt sander, but I sure don't relish all the noise, dust and vibration. I've also seen panel-surfacing jigs that consist of a router in a large plywood base riding on top of wooden rails at either side of a workpiece. My reaction has always been, "All that jig-building and routing just to end up with a surface that still needs a lot of cleanup? No thanks, I'll stick with my jointer plane and cabinet scraper."

Plane across, and then scrape with the grain—The beauty of this technique is that I can flatten a board quickly while avoiding tearout altogether. I plane straight across the grain, eliminating the

Plane across the grain. *Start at one end of the board, and work to the other, planing straight across. Skewing the plane at 45° or so may help it cut better. The jointer plane's length makes it a good reference surface, and its wide iron (2⅝ in.) allows you to make fewer passes. If the board starts to rock, tap wedges under the high corners.*

Photos: Vincent Laurence

Well-tuned hand tools make the work fast and fun

Set the chipbreaker 1/16 in. or less from the end of the plane iron. *This will help keep the throat clear of chips. Grind off the corners of the iron on a bench grinder so that they won't gouge the wood.*

Wax the plane's sole to keep it gliding smoothly. *Either beeswax or paraffin is a good choice.*

Planes or scrapers that clog, leave chatter marks or produce only dust take the pleasure out of working wood. Experiences like these may send you scurrying for your belt sander. But it's not all that difficult to get these old-fashioned "cordless" tools to sing. Before you put a 60-grit belt on your sander, try tuning up your hand tools.

Tuning a jointer plane for flattening: Besides the basics of plane tune-up (a flat sole and a well-honed iron with a flat back), there are other steps that will improve the performance of a jointer plane used for flattening.

The first thing I do is ease the corners of the plane iron on the grinder. As long as you adjust the iron so it projects through the mouth evenly across the opening, it won't gouge the wood. Sometimes I switch to an extra iron I keep on hand that's been ground to a slightly convex profile. I wouldn't use this iron to joint the edge of a board, but it's perfect for flattening.

I also set the chipbreaker close to the end of the iron (see the top photo at left). This will help keep the throat clear of chips. And sometimes I'll open up the mouth by moving the frog back slightly.

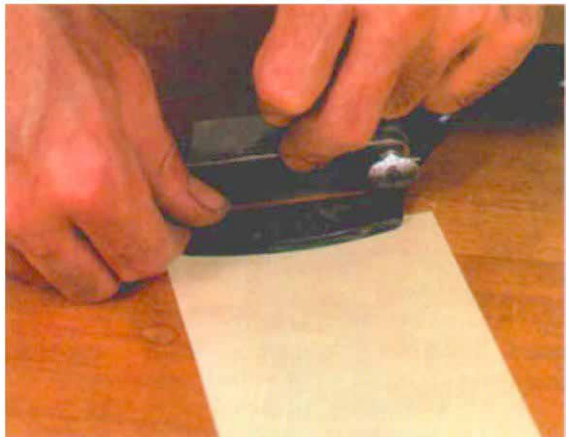
Finally, I keep the sole well-waxed. As soon as I feel the plane start to drag, I rub on a little more wax. It won't affect the finish because I'll smooth the surface later. A well-waxed sole makes a world of difference in how easily the work goes.

Tuning a cabinet scraper: The first thing I did to my cabinet scraper when I got it was flatten its sole with some fine-grit sandpaper on a flat surface (I used a glass plate). I ground a 45° bevel on the blade, honed it and flattened the back, and then turned a slight burr with a burnisher. This worked well enough, but sometimes I would get chatter when I scraped.

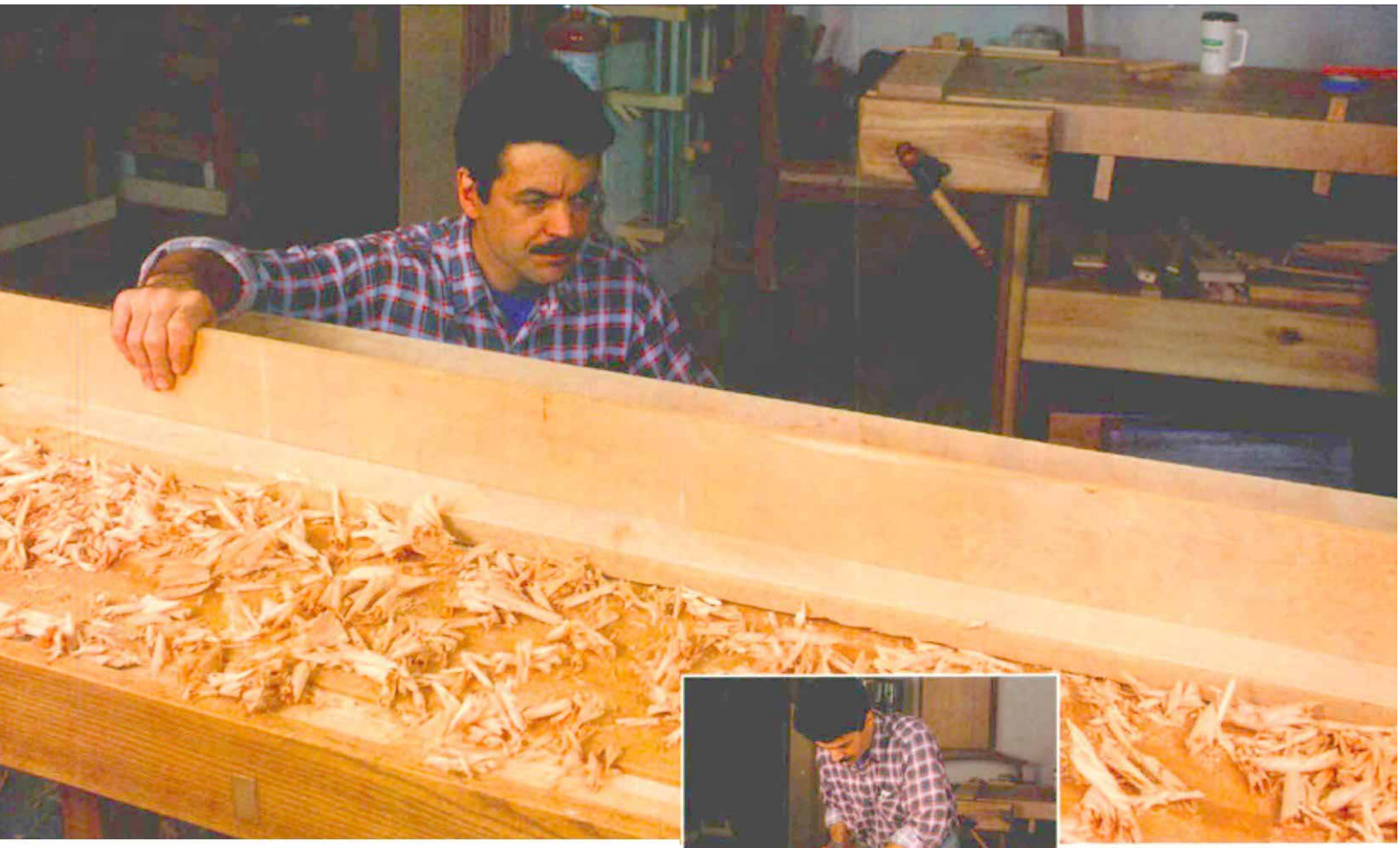
I determined that the blade wasn't seating well, so I trued the scraper body with a mill file to improve the bedding of the blade and the fit of the blade retainer bar. I also bent the retainer bar inward so that it contacts the center of the blade first as the thumbscrews are tightened. The result is a cut that's almost always chatter-free (see the far left photo). But you'll need to set the blade for the right depth of cut. I use a piece of paper to set the amount the blade protrudes through the sole (see the photo at left).

Once I have the proper depth of cut, I tighten the front thumbscrew just until it's snug against the blade. You shouldn't have to crank down on the thumbscrew. The more you do, the rougher the scraped surface you'll leave and the sooner you'll have to re-hone and burnish the burr. *-W.T.Y.*

File the scraper body. *Make sure the blade bed is filed flat, and file the scraper body so the retainer bar seats properly when tightened. This will help eliminate chatter and produce a better curl.*



Use a piece of paper to set blade height. *With a slip of paper under either the front or rear edge of the scraper sole, lower the blade until it rests on the bench. Then tighten the thumbscrews to exert pressure on the blade.*



Use a jointed straightedge to determine flatness. Check the board once the sawmarks are eliminated and the board is close to flat from edge to edge. Position the straightedge diagonally across the board to make sure it's not twisted.

Plane off any high spots, continuing to plane across the grain.

possibility of the plane blade catching the grain and lifting and breaking wood fibers. After using the jointer plane, I scrape with the grain. Because of the angle at which the cabinet scraper holds the blade, there's no chance of tearout. This lets me arrange boards for glued-up panels so they look their best, regardless of which way the grain goes. It also allows me to flatten even heavily figured wood.

After one side is flattened, you can feed the panel through your planer to take it to thickness. If the panel is too large for the planer (a tabletop, for example), take a marking gauge and scribe a line around the tabletop's edge, holding the fence of the gauge against the flat side of the tabletop. Then repeat the procedure. The gauged line tells you when to stop planing and scraping.

Once your panel is the right thickness, smooth the surface. If you're confident in your planing skills, smooth the surface with a Finely tuned smoothing plane; otherwise, scrape and sand.

You should use flattened panels as soon as you can because they can warp or cup with changes in temperature or humidity. Then you'd have to flatten them all over again. If you can't use them right away, either stand the panels upright so they get plenty of air circulation on both sides or sticker them on your workbench and weight down the top.

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Scrape with the grain across the width of the panel from either end until you've eliminated all cross-grain planing marks.