

## Surface a large slab

USE HANDPLANES TO FLATTEN AND THICKNESS BEAUTIFUL WIDE BOARDS

BY DAVID MOORE

Get ready for flattening



**Shine a light.** Aim a work lamp low across the slab to create shadows that highlight the board's low and high spots. Wedges under each corner stop wobbling.



For a recent dining table commission, I went looking for sources of wide lumber. Frustrated by the selection in the lumberyards, I sought advice from members of my local woodworkers guild and, in the process, tapped into a rich vein. My friends had their ears to the ground, and they pointed me to sources that don't advertise, such as part-time log dealers and hobbyist millwrights cutting slabs from downed street trees and yard trees. Suddenly, I had an array of beautiful, wide boards to choose from.

But then I faced a problem—how was I to work these boards when my machines weren't big enough?



**Check for twist.** Winding sticks—a pair of matched wood or metal straightedges—reveal any twist from one end of a board to the other. Sight across the top of the sticks.



**Circle your targets.** Mark the high spots with pencil scribbles. In addition to the winding sticks, lay a long straightedge along the surface in various places.

## Flatten one face

### START WITH THE SCRUB PLANE

Designed for heavy cutting, the scrub's narrow, severely cambered iron excels at removing material quickly. Moore's version is a converted rabbet plane from ECE Primus.



**Level the high spots.** The scrub plane is designed for heavy stock removal. It makes deep, fluted tracks and thick, brittle chips.

My answer was to flatten and thickness them with handplanes. This takes practice and elbow grease, and it calls on many skills. But the rewards are great: You'll grow as a woodworker, and you'll be creating furniture with beautiful, one-of-a-kind boards.

### Get ready for a workout

To flatten and thickness stock, you'll need a long straightedge, a pair of winding sticks, a combination square, a scrub plane, a jack plane, a jointer plane, and a smoothing plane. I use metal winding sticks, but you can make a pair from any straight, stable hardwood (see Fundamentals, *FWW* #177).

You also will want a work surface other than your bench, which likely is too tall for this task. Setting the slab on a pair of low sawhorses instead makes it easier to reach across the board's full width. It also lets you lean more heavily into each planing stroke, delivering more power from your legs and back without sacrificing downward pressure or control.

I stand just under 6 ft. and find a work height around 28 in. ideal for this task. If I tried to do the work at my 37-in.-high bench, my arms would be Jell-O in minutes. Finding the right height may take some trial and error, but what matters most is what is comfortable and sustainable for long periods.

Weight the sawhorses with sandbags and place wedges under the slab to hold it still. Keep a work lamp nearby to shine across the board at a low angle. This will create shadows that make plain the high and low spots.

### When flattening, be sure to scrub first

The first step in any milling job is to flatten one face as a reference for bringing the board to uniform thickness. The same is true here. Start by

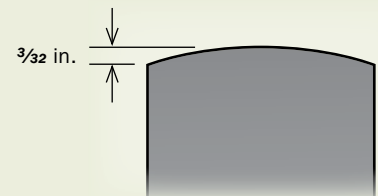


**Check your progress with the straightedge.** There is no reference line against which to gauge your work, so you'll need to take repeated sightings with the winding sticks and long straightedge.



### Grind a steep curve into a scrub-plane blade

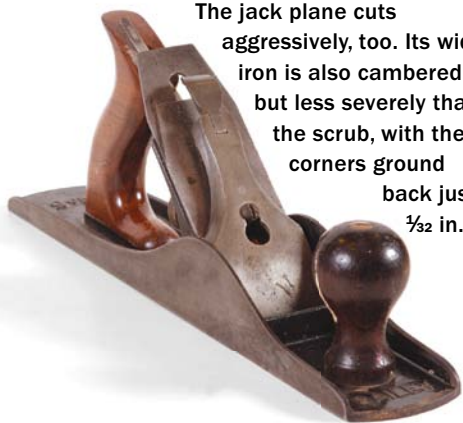
Moore grinds back the corners on his scrub-plane iron by  $\frac{3}{32}$  in. Pivot the blade as you work the edge to establish the radius.



## Flatten one face continued

### SWITCH TO THE JACK

The jack plane cuts aggressively, too. Its wider iron is also cambered but less severely than the scrub, with the corners ground back just  $\frac{1}{32}$  in.



**Refining the surface.** The jack's wider, shallower cut levels the ridges left between the scrub plane's ruts. Work across the grain and diagonally.

### FLATTEN WITH THE JOINTER

The jointer plane makes things flat. Its wide iron is ground with no camber, so it creates no scallops or ruts.



**Start across the grain.** Change directions as needed. The plane's long sole will find any remaining high spots, bridging the valleys that a shorter plane would follow and deepen.

### FINISH WITH THE SMOOTHER

The smoother does just that. The plane's narrow throat produces a fine shaving while the heavy body dampens vibrations for a smooth cut.



**Tackle tearout.** Working in all directions, remove whisper-thin layers from the entire slab until the tearout is trimmed away, leaving a dead-flat, glassy surface.

carefully examining the surface using the straightedge and winding sticks, marking the high spots with chalk or pencil. Often, a board is twisted, with high spots at opposite corners, or bowed, with high spots at each end or in the middle. Some boards are both twisted and bowed, but the strategy is the same: Mark and level the high spots until the surface is roughly even, then smooth away the tool marks to create a single flat plane.

To level the high spots, use the scrub plane. Its narrow blade cuts deeper than a bench plane with the same effort—narrow and deep vs. wide and shallow.

Work the high spots, planing directly across the grain with slightly overlapping passes. This approach effectively weakens the wood fibers, causing them to release more easily from the wood in short, brittle shavings.

There are no depth lines to work toward, so gauge your progress often with the straightedge and winding sticks. Set aside the scrub plane as soon as the entire surface is level with the lowest spot. Once this is done, switch to the jack plane to begin removing the deep scallops cut by the scrub plane. The jack plane's cambered iron cuts aggressively, but less so than the scrub plane. This step creates scallops that are broader, smoother, and not nearly as deep. Continue working across the grain and diagonally until the scrub-plane scallops are gone, checking for high spots and addressing them if necessary. Afterward, it's time for the jointer plane.

### Jointer plane tackles the entire surface

Use the jointer plane to skim the board's entire surface, taking lighter shavings and leveling the remaining scallops. With its long, broad sole, the jointer will reveal extremely subtle high spots. If needed, mark these spots and revert to the jack plane to tackle the bulk. Then continue with the jointer plane, changing directions as needed, until all the jack-plane tracks are flattened.

After checking again for flatness with the straightedge and winding sticks, switch to the smoothing plane for tearout removal. Even if you plan to power-sand the surface before finishing, using the



## Clean up the edges



**Use a drawknife to remove the bark.** Short strokes and a shallow angle lift the bark without digging into the surface underneath.

smoother will create a more consistently flat surface than sanding alone.

The edges are next. If you're gluing up a pair of slabs, use the same strategy on the mating edges that you used to correct the faces. For a seamless joint, the edges must be square to their reference faces, straight, and twist-free. To debark and dress a live edge, I use a drawknife followed by a spokeshave.

### **Thickening: Mark, flip, and repeat**

Flattening the opposite face so that it is parallel and the whole board is an even thickness is just as much work as the first task. This time, though, you'll have a clear finish line. Set a combination square to the desired thickness and pencil a line on all four edges, using the flattened face as a reference. Start with the scrub plane again, switching to the jack plane when you get close to the pencil line. Again use the jointer plane to expose the remaining high areas, followed by a razor-sharp smoother to remove any remaining imperfections.

With the job complete, I collapse in my rolling chair and scan the freshly milled material. I immediately sense order. The twist has been tamed and the wide board seems relaxed as it lies gracefully within the same plane, perfectly flat. □

*David Moore makes custom furniture in his one-man shop in St. Louis, Mo.*



**An irregular surface calls for a nimble tool.** The spokeshave's short sole leaves the contours of the edge intact while shaving the surface smooth.



## Flatten the second face

**Mark out the thickness.** Set a combination square to the desired thickness and reference from the flattened face to draw a line along all four edges.



**Flip the board and repeat the process.** Stay with the scrub plane for quick stock removal until you get close to the layout lines.