

Handplaning 101

EXPERT ADVICE ON SETTING UP
AND USING A PLANE

BY CHRIS GOCHNOUR



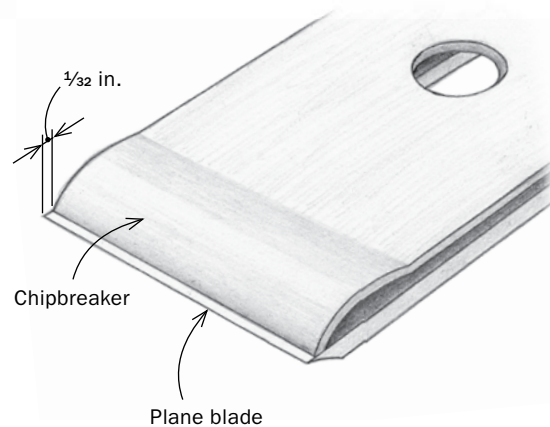
The smoothing plane is one of my best friends in the shop, and I reach for it frequently. A sharp smoothing plane meticulously shaves the surface of a board, creating a glass-smooth sheen that highlights the wood's figure while leaving a dead-flat surface in its wake. For most furniture parts, a handplaned surface is good enough for finishing. But not everyone has success with the handplane. Many who buy a smoothing plane have so much trouble getting good results that they set the tool on a shelf, where it becomes a dusty spectator to the real action in the shop.

Problems occur for three main reasons: The blade is not sharp, the tool is out of tune, or it's not being used properly. This article focuses on the third factor, showing how to set up and adjust a

Install the blade properly



Secure the chipbreaker. Keep its leading edge slightly inset from the front of the blade, and parallel to it (right).



Online Extra

For a surefire sharpening method, watch the step-by-step video at FineWoodworking.com/extras.

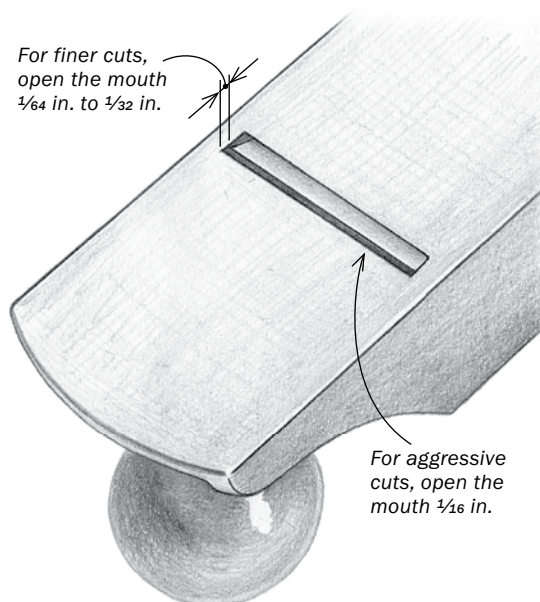
traditional bevel-down plane, and how to use it for optimal performance. For space reasons, we will assume a handplane is in good working order with a blade that is razor-sharp.

Install the chipbreaker and blade

The first task is to understand the parts of the plane and to make sure they are



Set the mouth opening. Small screws allow you to adjust the mouth opening to accommodate heavy or light cuts (right).



Dial in the depth of cut

assembled correctly. Mounted on top of the blade, the chipbreaker deflects shavings up and out of the plane. The first step in setting up the plane is to secure the chipbreaker to the blade. Put the assembly on the frog (the angled bed that connects the plane body to the iron) and secure it with the lever cap. Set the tension on the lever cap just enough to hold the blade assembly in place while allowing for blade adjustments.

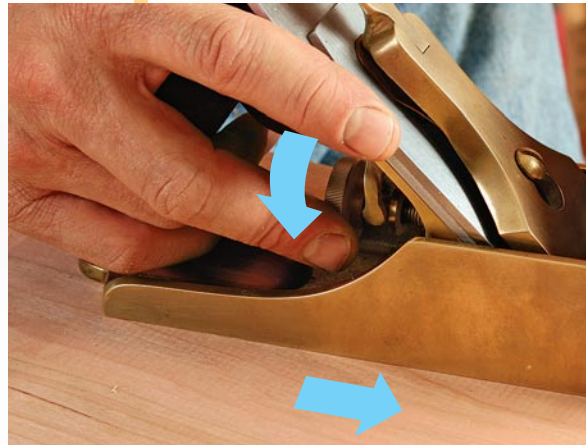
Open the mouth

As the plane cuts, shavings pass through an opening in the sole called the mouth. How wide you open the mouth depends on how thick you want the shavings. Heavier cuts need a larger opening, while lighter cuts need a smaller one.

To adjust the mouth opening, advance the blade until it barely projects through the plane's mouth. Then move the frog forward or backward until you get the desired mouth opening. The bedrock-style frog offered by Stanley, Lie-Nielsen, and Clifton makes these adjustments convenient. Simply loosen the two side screws at the rear of the frog, then use the central adjusting screw to move the frog to open or close the mouth. Once set, tighten the side screws to lock the frog in position. The Bailey pattern planes require the blade to be removed to access the frog screws, making the adjustments a little less convenient.

Adjust the blade

With the mouth opening set, it's time to adjust the blade laterally and to fine-tune the depth of cut. First adjust the blade laterally so that the shaving is coming through the mouth in the center. Now set the depth of cut by advancing the blade. Aim for a shaving about 0.001 in. to 0.002 in. thick that's near full width and tapers to nothing at its edges. A



Retract and rotate. With the blade retracted fully, move the plane across a flat board, slowly advancing the blade with the depth-of-cut knob. Stop when the blade contacts the board.

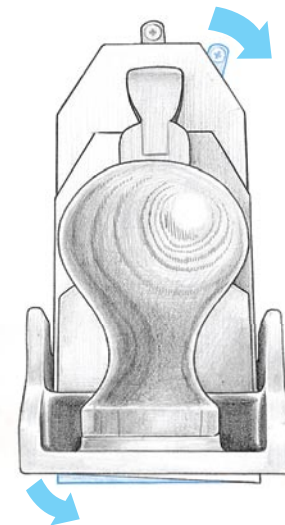


Watch the shaving. Make a short pass, looking at where the shaving is coming up through the mouth. More than likely, the shaving is leaning to the left or right.



Move it to the center. Swing the lateral lever to bring the shaving closer to the center. If the shaving comes out on the left, move the adjuster to the left. Do the opposite if the shaving is on the right.

LATERAL ADJUSTMENT



Move the lever toward the heavy side of the cut to bring the shaving to the center.



That's more like it. You're finished with lateral adjustments once you have the shaving centered.

Now move forward. Advance the blade until you're cutting a gossamer-thin, near full-width shaving that tapers to nothing at its edges. Now you're ready for the real work.



Use your whole body to push the plane

cut is too heavy if it causes excessive strain on the user, causes the plane to jump and chatter, or leaves unsightly plane tracks on the surface.

If the cut is too heavy, lighten it by rotating the adjustment knob counterclockwise. After raising the blade in this manner, remove the backlash, or slop, from the plane's adjusting mechanism. Rotating the knob clockwise until it is snug does it. Eliminating backlash prevents the cut from changing as you plane.



Power up. For stability and power, stand with your legs comfortably spread apart and your feet facing forward. Lean slightly forward, and put firm, downward pressure on the knob as you begin the cut.

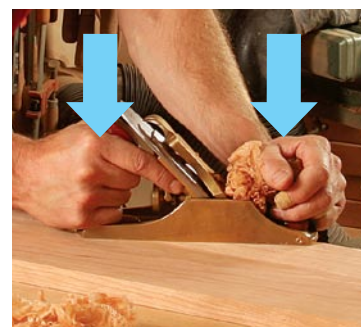
Anyone can plane like a pro

If you've struggled with your plane, it may surprise you to know that a handplane naturally wants to make surfaces flat and smooth. But to get there, you need to pay attention to your grip, stance, and planing motion—all at the same time.

Secure the board to the bench—Be sure the grain is oriented in the direction you wish to plane (for more on finding grain direction, see Rules of Thumb: "Determining Grain Direction," *FWW* #172). The best way to hold the board is with the benchdogs on a cabinetmaker's bench. Do this by opening the tail vise, placing the board between the dogs, and closing the vise to clamp the board. Do not overtighten the vise because this will bow the board upward. Complete the clamping process by tapping each dog slightly downward with a hammer. This draws the board firmly against the bench. Alternatively, a planing stop, which is basically a wood strip that is secured across the width of your bench, will do the trick.

Power through the cut—Once the board is secured, grasp the plane by the tote (the rear handle) and the knob. Use a three-fingered grasp on the tote with the index finger pointing forward. Hold the knob in a way that feels comfortable. Some use a fingertip grasp, while others hold it in the palm of their hand.

I also recommend skewing (angling) the plane throughout the cut. Skewing



Full contact. Once the plane's sole is completely on the board, apply pressure equally to both the tote and knob. Skewing the plane will reduce resistance and help eliminate chatter. Be sure to maintain your wide stance and use your body to drive the tool forward.



Exit strategy. As you exit the board, ease up on the knob and focus pressure more on the tote. Continue working across the board using consistent, overlapping passes.

Simple solutions to common problems

A smoothing plane is not a complex tool, so it's pretty easy to diagnose and cure the most common ills. By the way, none of these solutions will work if the blade isn't sharp.

CHATTER

Problem: When your plane stutters or skips through a cut, it's called chatter. The problem often leaves a rippled surface, but you usually can feel it happening as you plane.

Solution: Take a lighter cut; put more pressure on the knob as you power into the cut; increase the angle of skew; resharpen the blade.



TEAROUT

Problem: Tearout is one of the most common problems associated with planing. Instead of shaving the wood cleanly, the iron pulls up the wood fibers, leaving a fuzzy, rough surface.

Solution: Take a lighter cut; change planing direction; plane straight on (don't skew the plane); resharpen the blade.



PLANE NOT CUTTING

Problem: Sometimes a plane stops cutting, even after successful passes.

Solution: Check for a clogged mouth; advance the blade to take a heavier cut; inspect the chipbreaker for poor contact with the blade; resharpen the blade.



TRACKS

Problem: A plane is supposed to leave a smooth, flat surface in its wake. But a plane that's not set up right can make tracks, or ridges, in the surface.

Solution: Readjust the blade laterally; take a lighter cut; when resharpening the blade, push down on the corners to relieve them slightly, creating a cambered edge.



lowers the blade's cutting angle, reducing resistance and helping to eliminate chatter, which is especially useful on unruly grain. A skewed plane is also the most natural and comfortable way to hold the tool. Because your stance is in a slightly forward position, it's awkward to align your hands one in front of the other. It is far more natural to have them spread apart, side to side.

Use your entire body to drive the plane (see photos, p. 32). At the beginning

of the cut, concentrate pressure on the knob to counter the natural tendency of your hands to rock the plane as it meets the board. Then transfer pressure to both the knob and tote evenly. As you exit the cut, put more pressure on the tote and ease up on the knob.

➔ Find out more

To take your planing to the next level, read "Plane Like a Pro," pp. 46-53.

On the return stroke, it's OK to maintain contact with the board, but tilt the plane slightly on edge so as not to add needless wear to the cutting edge.

Continue planing end to end, working from the near edge to the far edge with consistent, overlapping passes. (It is a lot like mowing the lawn, but far more enjoyable.) Repeat the pattern until all the mill marks and snipe are eliminated, leaving a surface ready for finishing. □