



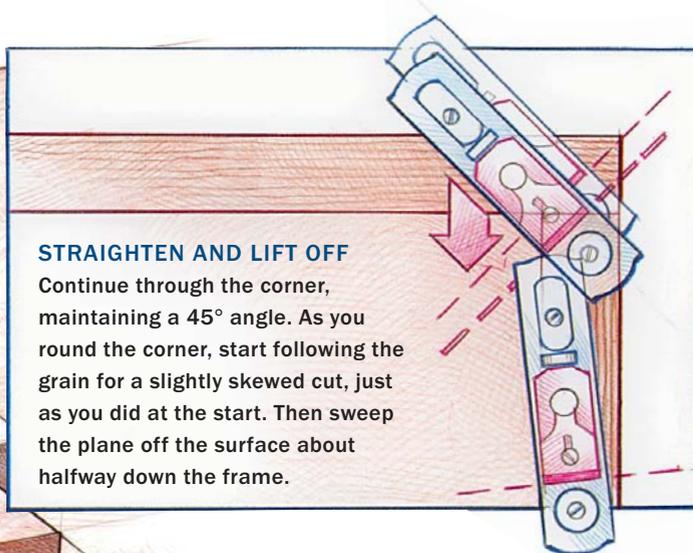
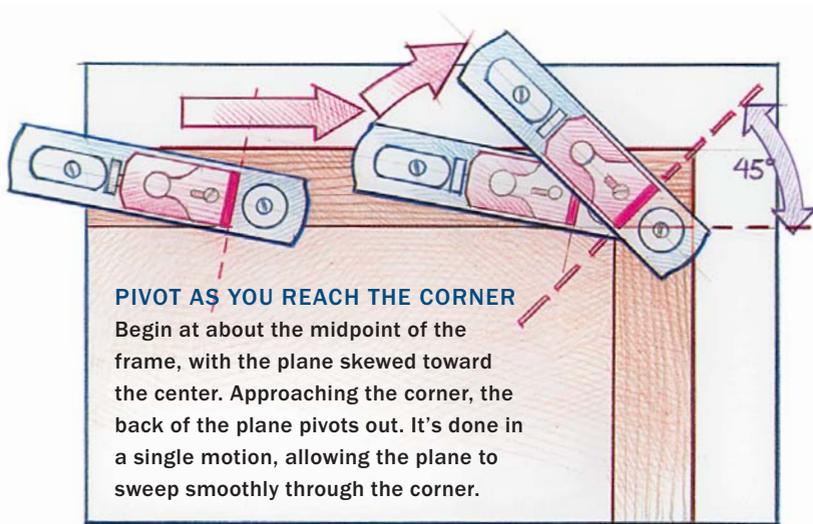
**PLANE AROUND THE CORNERS
TO PRODUCE A FLUSH JOINT**

A glued-up corner joint that's not perfectly flush can be quickly smoothed and leveled. All it takes is a sharp handplane and a technique that steers the plane around the bend in one motion.

Planing Corner Joints

Set a plane for thin shavings, and take sweeping strokes

BY JEFF MILLER



Not all corners meet exactly as planned. Sometimes, despite the best efforts at cutting and fitting, parts end up glued together with surfaces that aren't quite flush. When this happens, many woodworkers reach for a random-orbit sander. But if you're not careful, a random-orbit sander can create more problems than it solves. It sands quickly and indiscriminately, so you could end up rounding over edges in no time or inadvertently removing material from low spots, when it's only the high spots that you want to sand.

So when flushing up surfaces that meet at a right angle, I prefer to start with a handplane, which allows me to remove just the right amount of stock without having to worry about distorting surfaces or rounding over edges. I still use a random-orbit sander on occasion but only after the surfaces have been pretty well flattened with a handplane.

Start with a well-tuned handplane

For this procedure to work, your plane must be sharp enough to slice thin shavings. If it's not, some extra honing and adjusting is in order (tune-up information can be found in *FWW* #99, pp. 67-71).

Although you can use any smoothing plane or jack plane, I prefer to use a block-style, low-angle smoothing plane. Unlike the standard jack or smoothing plane, which has the bevel of the blade facing down, a block-style plane has the blade bevel facing up. I sharpen the blade to between 35° and 40°, much steeper than the original 25° angle. So the cutting edge of the plane meets the wood at a steeper angle than a typical smoothing plane and does a better job of cutting difficult grain. Then, I adjust the mouth so that it's close to the blade, between 1/2 in. and 3/4 in.



This side up. On a block-style plane, the bevel of the blade faces up.

Plane surfaces flush

The procedure for getting the surfaces flush can be distilled into two main steps: roughing, which removes most of the wood, and

A PULL STROKE IS ALSO EFFECTIVE



1. Start pulling. At the midpoint of the frame, with the front of the plane pivoted in, hold the plane by both handles and pull it toward your body.

2. Make the turn. At the corner, pivot the front of the plane toward the center of the frame while pivoting the back of the plane to the outside. It's the same sweeping motion used when the plane is pushed.

3. And finish. Aim the plane along the grain for a slightly skewed cut, then sweep it off the surface about halfway down the frame.



smoothing, which gets the parts perfectly flush. The handplane does all the work in both steps, although the planing technique for each one is different.

Rough planing gets the joint close—Before beginning this step, check the offset between the parts. If the parts are almost flush, you can skip right to the smoothing step. But if there's a pronounced step in the joint, remove the high section first.

However, just because I call it roughing work doesn't mean you're going to take heavy cuts. Instead, you want to use light, controlled cuts, working slowly until the offset parts are nearly flush. And try to plane in the same direction as the emerging grain; otherwise, you risk tearing out the wood.

Keep the plane level and point it toward the outside of the frame. Lift the plane off the frame on the return stroke. And be careful. You can easily smack the front or back of the plane into part of the

frame, producing an unwelcome dent. Once all of the parts are nearly flush, you could skip the smoothing step and immediately move to the random-orbit sander equipped with fine sandpaper. With the parts now relatively flush, the sander is less likely to do harm. But to get the best results, you'll want to include the smoothing step.

Planing around the corner smooths the joint—This step is a little unusual, because rather than planing routinely in a straight line, you direct the plane around the corner. That's the trick to getting the mating parts flush.

Clamp the frame to your bench and make sure the plane is set to take the lightest possible cut. Then, starting about halfway down the frame, plane toward a corner with the tool angled about 45° toward the center of the frame.

As you approach the corner, start turning the toe of the plane

FINISH-SANDING

onto the adjoining piece while swinging the heel of the plane to the outside. The idea is to sweep around the corner with a smooth, uninterrupted planing cut.

You can make this cut by either pushing or pulling the plane through the corner. When pushing, start the cut with your elbows locked, and use your legs to drive the plane. Then, as you approach the joint, use your arms to guide the plane and push it across the right angle (see the drawings on p. 43). The other approach is to pull the plane toward you through the corner, using a hand on the back of the plane to sweep it around the right angle (see the photos on the facing page). Either way, the plane should give you a nice, smooth cut on both parts, despite the difference in grain direction.

If the parts are narrower than the plane blade, you can probably get them perfectly flush in just one or two passes. But a wider part might require several overlapping passes to plane the entire width.

Sand the parts smooth

As a final step, if the plane hasn't smoothed everything perfectly, do some light sanding. Here's where the random-orbit sander can be put to good use. But to avoid rounding-over problems, use only fine sandpaper (220 grit or finer).

If you don't have a random-orbit sander, or if you're apprehensive about using one at this late stage, simply hand-sand the parts. I use a sanding block, which helps keep the surfaces flat. Ideally, the block should be about the same width as the part. A block this size gives you more control, making it easier to sand exactly where you want to. A block that's too wide tends to round over the edges, the problem you've been trying to avoid.

To prevent the block from sanding into a cross-grain joint, clamp a scrap piece along the very edge of the joint line. The scrap stops the block right at the line. And by positioning the sandpaper at the front edge of the block, you can sand right up to the line.

Sometimes, however, it's easier to work without a block. In cases like that, you can create an automatic stop simply by making a 90° fold in the sandpaper.

The techniques can be used on drawers and face frames

As you become familiar with these techniques, you'll discover that rail-and-stile and frame-and-panel construction are not the only places they can be put to use. For instance, they can be used to flush up the top and bottom edges of drawers or to repair face frames that have misaligned faces. Keep in mind, though, that drawers (and many face frames) are often narrow, making it difficult to keep the plane level. This makes it easier to bang the toe or heel of the plane into something you don't want dented. So proceed slowly and always hold the plane level.

Crosslap joints can be extra fussy. Rough-plane the parts to get them pretty close, then sand them. Be aware that with a random-orbit sander the edges of the sandpaper tend to catch on a narrow crosslap joint. Use a light touch, and concentrate on holding the sander perfectly level.

One last point. A misaligned corner joint is never going to be welcomed in the shop. But by applying these techniques, you'll have a joint that's going to look and work just fine. And you might just keep your nose from going out of joint in the process. □

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It's okay to sand lightly with a random-orbit sander. But use only 220-grit (or finer) sanding discs. Be careful to hold it level to avoid rounding over edges.



A stop block can help when hand-sanding. To avoid sanding across the grain at the joint, clamp a stop block at the joint line. With the paper wrapped flush to the end of the block, you can sand right up to the line without cross-grain scratches.



Sandpaper stop. A simple bend in a piece of sandpaper can serve as a stop. When the bend butts against the board, the sandpaper stops right at the joint line.