

Paring Chisel Basics

*Warm-up exercises
teach an essential skill*

by Michael Podmaniczky



The three paring chisels, center, are lightweight tools shaped for precise work in tight places. The firmer chisel, left, is heavier overall, without side bevels, to resist the shock of hammering. The Stanley chisel, right, is an intermediate design for general work.

One of my favorite, and often enjoyed, times is the first slice I take with a paring chisel after a good sharpening. This most basic and useful tool is also the most versatile, doubling as a plane, a drawknife, even a cabinet scraper. But like any tool, it only performs for the hands that understand its basic personality quirks and all.

There are many types of chisels, from the brutal timber framers' mortiser down to the tiniest carver, each one requiring a different technique. Here, I'll limit myself to an examination of the parer and how it's used for fine cuts. You *can* pare with any chisel, so much of the advice here will apply to all chisels. But the parer is a special case in that it is a lightweight, specially shaped tool that can get into places other chisels can't. Paring chisels are thin and light, with beveled edges to reduce weight and increase maneuverability. They are not expected to take hammering or prying. The nature of this tool is to remove light shavings of wood, usually with a finished surface as the intended result: sides of dovetails, tenon shoulders, etc.

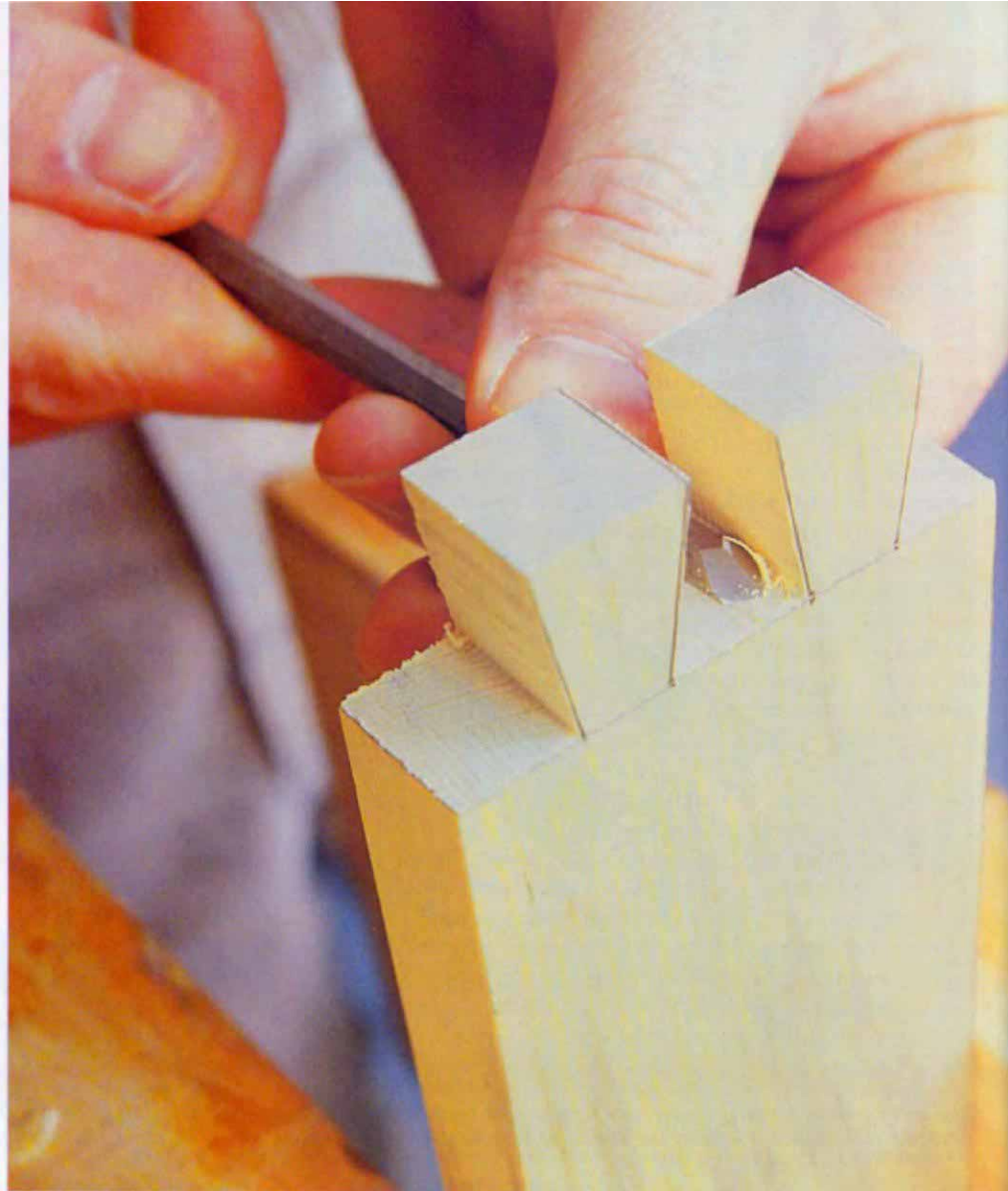
The plane finishes large surfaces, the paring chisel finishes small ones. Incorrect use of a tool that's not necessarily intended for finish cuts—a drawknife for example—results in temporary frustration and extra work. Incorrect use of a paring chisel results in poor joints and ten years of irritation from having to look at them across the living room.

Any discussion has got to begin with the usual enjoinder: buy the best. There's no point in trying to master a second-rate tool.

But don't fret, I'm not suggesting that you buy a drawerful of expensive chisels. You can get by with two or three good parers, say, $\frac{3}{8}$ in., $\frac{1}{2}$ in., and 1 in. or $1\frac{1}{4}$ in. You have many years to fill up that drawer. For rough-cut pounding, also pick up a couple of solid, inexpensive hooped socket or reinforced plastic-handled butt chisels. I like Stanley. There's no need to break the bank.

As I'll discuss further along, the action of paring—whatever sort of chisel you may be using—requires that the flat chisel back be used to "jig" the cutting edge in a straight line. It follows that the longer the blade, the longer the controlled cut. While this is true, it's also true that sometimes smaller areas need to be pared, and a long tool gets in the way. . . hmmm. . . what to do? Long-bladed patternmakers' chisels are really great for big work, and I go one step further and use cranked-handled ones—tools in which the shank of the chisel is bent so that the line of the handle is parallel with, but above, the line of the blade. "With these, you can pare down a bung in the center of a sheet of plywood, if you really care to. But since these tools are extraordinarily expensive (not to mention hard to find), go for an average-length bench chisel, and it will take care of 90% of your needs.

It would be simple to describe some ideal working grip and, thence, the perfect handle for a paring chisel. You would then take it in hand, step up to the bench and find that the job you're doing is not ideal, and you'd end up with an entirely different grip and the shape of the handle would then be irrelevant, if it wasn't actually inconvenient. Better a plain handle that will give



A mortising chisel, top, cannot get into tight corners because of its square sides; the paring chisel, above, has no problem because of its side bevels, which can be ground to almost a knife edge. Taking this thought one step further, the author modified a small parer's cutting edge to form a double-skew chisel, right, for slicing into dovetail corners. In all these cases, the right hand powers the cut, while the left rests against the work and grips the tool for control.

Fig. 1: Paring to a shoulder line

1. Start cut on line; slice down to tenon.

2. Proceed down line by jiggling corner of flat back against part of shoulder already cut, then arcing chisel down.

Detail: Side view

Chisel at end of arc



When paring a straight line, such as this tenon shoulder, the left hand backs up the tool for control, while the right hand pivots the cutting edge down. With a series of cuts (see drawing), the flat back of the chisel can jig itself along the length of the shoulder that has already been cut, as well as along the scribed shoulder line.

the versatility of grip so necessary to a proper job. The simple oval handles on Marples or Sorby tools are great, even though the smaller sizes may need a flat spot planed on one side of the handle to keep them from rolling off a not-so-level tabletop.

A very important detail is the finishing of the surfaces of the tool. It is imperative that the back of the chisel be ground flat, not belt sanded! This is easy to check if you're buying off the rack: just grab a steel ruler and hold it against the surface. You don't want to see light between the two. If you're catalog-buying and they send you a dud, send it back. It's the only way that manufacturers and distributors will ever get the picture.

As mentioned earlier, paring chisels have beveled side edges, and the care with which this is done is an indication of the overall concern the manufacturer has for the product. The maneuverability that side beveling gives you is apparent when working into an acute angle, such as next to a dovetail, as shown in the top photos on the facing page. You can re-grind this bevel almost to a knife-edge. To carry this idea a little further, I modified a 1/4-in. bench chisel (shown in the large photo, p. 42) and made, in effect, a two-edged skew. Thus, I get a slicing cut (on either side), even when I push the blade in a straight line.

Now, I'm sure that you've already muttered something about my remarks that paring chisels are not for hammering on. I know, I know. . . I hammer on them, too, occasionally. But only

with a wooden mallet, and then only lightly. Besides, paring is, by definition, done just with the hands. Blasting away with a mallet on a heavy mortising chisel doesn't permit the intimacy that develops between your hands and a paring chisel during a long day of cutting joints. Like a tiny stone in your shoe, a sharp edge or protruding piece of hardware can become a real irritant to your hand in a short time—which is another reason for choosing smooth handles (i.e. no butt hoops).

Manufacturers usually leave sharp corners where the body of the blade tapers back to form the shank. I grind these trailing corners off the blade to avoid opening up a finger if my sweaty palm slips, and I file any proudness off the edge of the ferrule, which ideally should be flush with the wood of the handle. This wants to be as comfy as an old loafer.

Now, before you can really understand the proper use of a paring chisel, you have to appreciate a key concept.

Ask yourself what would happen if you stuck a coil spring on the handle and held it while trying to take a shaving off an important piece of work. Why, as soon as you got near the end of the cut, the spring would unload, the chisel would jump and make a mess of everything in its way. You would have no control. Unfortunately, this can happen any time you go to work. The muscles and tendons in your hands and arms will act just like the spring unless you develop proper paring technique. There are

Bahco's ergonomic chisel

by Sandor Nagyszalanczy

I always thought that chisels were all about the same: a little fancier handle here, a little harder tool steel there. But my nonchalance was put to the test recently when I tried a chisel created by design methods usually reserved for jet cockpits and auto interiors. Made by one of the world's leading tool manufacturers, Bahco of Sweden, the Ergo line of hand tools is inspired by modern methods of ergonomics, or "human factors engineering." Bahco's aim was a chisel that would reduce hand and wrist fatigue while minimizing the risk of injury, common in hand-labor-intensive work.

Conny Jansson, director of R&D at Bahco, and a team of consultants began by videotaping woodworkers on the job and analyzing their individual physical movements. They also used computerized measuring devices attached to both people and mannequin-type figures to study worker functions and measure stress.

The collected data provided design criteria for the improvements incorporated in the Ergo chisel: a longer, textured handle large enough to accommodate two hands; a gently rounded, knob-like end to reduce palm pressure and protect the fingers when struck by a mallet; a smooth blade-to-handle transition to allow a closer grip for delicate work; and a shorter, stiff blade—angled in relation to the handle—for a higher angle of relief when working in close on flat surfaces.

I was impressed by the scientific treatment, but wondered if all the high-tech was worth it. To find out if the Bahco performed like a European sports car, I gave it a road



Sleek as a Swedish Saab, the Ergo chisel is as much a product of science as it is art.

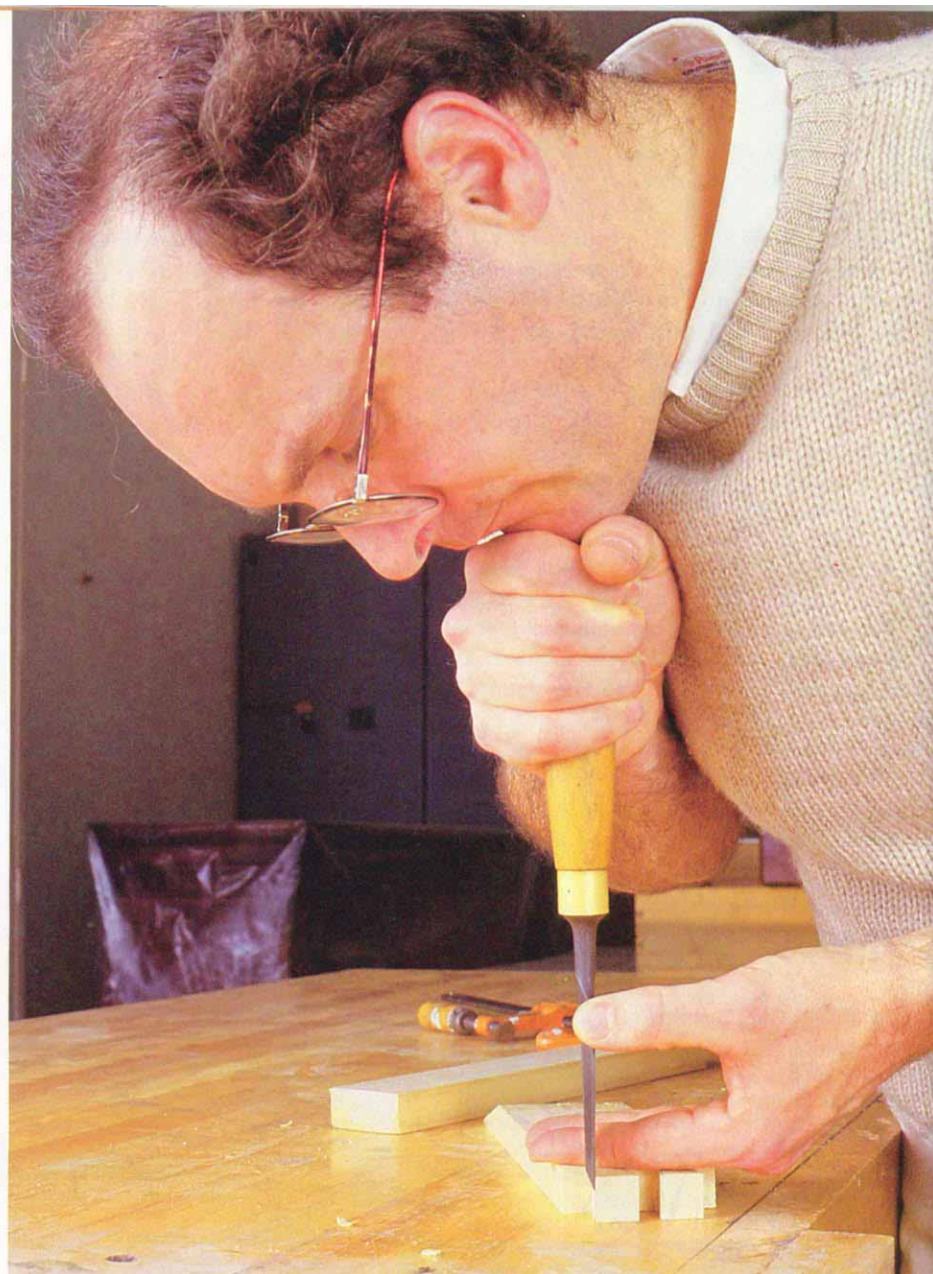
test around the shop. The overall heft and feel of the chisel was gratifying. There was no feeling of cheapness, and the oval shape of the molded polypropylene handle gave a good sense of blade position relative to grasp. Since I have large hands, I appreciated its generous size, although I could only use the palm of my other hand on the chisel's butt end. I used it with a mallet and the handle felt very positive when struck; evidently, it won't mushroom over time. The socket-style attachment and angle of the blade gave the tool a feel similar to Japanese chisels I've worked with. At a claimed Rockwell hardness of 58 to 60, the blade sharpened and honed well and held an edge even after being pounded into dense rosewood.

I didn't much like the surface of the Ergo's handle. Despite the groove textured surface, the black plastic was just a little too slick for my taste. Also, an indented area on the chisel's handle where Bahco molds in its trademark was uncomfortable to grasp, nearly negating, for the sake of product identity, all the

effort that went into making the tool's hand fit revolutionary.

So, is ergonomics a gimmick or a giant step in the evolution of hand tools? Although I usually choose a tool for the way it performs, I'd be drawn to Ergo's high-tech modern appearance, even if I knew nothing about all the computer-aided effort that went into its design. Bahco has created a high-quality tool that's got more going for it than a trendy design, but I can't say I'm ready to throw out all my antiquated chisels just yet; I still prefer the feel of a wood handle over plastic. If you're comfortable with the tool, you may not be with the price—\$15 for the 1-in. model. But all that intelligent Swedish design—whether it's for hand tools or Saabs—doesn't come cheap. □

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Successful paring demands forward pressure to make the cut and firm control to keep it in line. At top left, the controlling hand, the left, also acts as a brake so the chisel will not spring forward uncontrollably and chip out the wood at the far end of the workpiece. Below that is a practical one-handed grip—the heel of the hand acts as a fulcrum; the right thumb arcs the chis-

el like a lever through the wood, slicing through the woodfibers. Control in paring comes easily when large muscles of the body are used to drive the tool. Shown above is one of the most common techniques: Podmaniczky uses his chin against his fist and the end of the handle, with the left hand helping to keep the tool on line. Other strategies include pushing with hip or chest.

two ways to overcome this problem: dampen the spring action, or substitute inertia of body mass for muscle power.

In most cases where I use my right hand to power the cut, I use my left hand to help guide the cut and restrain the cutting action. By squeezing the blade and resting part of my left hand against the work—sometimes the forefinger, other times the heel of my hand or whatever is convenient—I have real control and can stop the cut whenever I want, right on a dime. As I mentioned earlier, the back/side edge of any chisel has to be kept in good condition—actually sharp—so that there is a slight danger with this grip that you'll begin taking little slices off your finger. Try to apply the gripping pressure in the middle of the blade and you can avoid irritation.

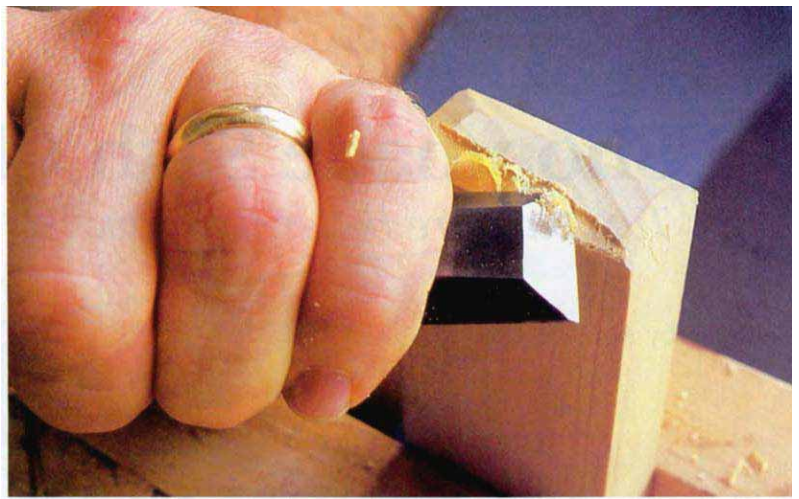
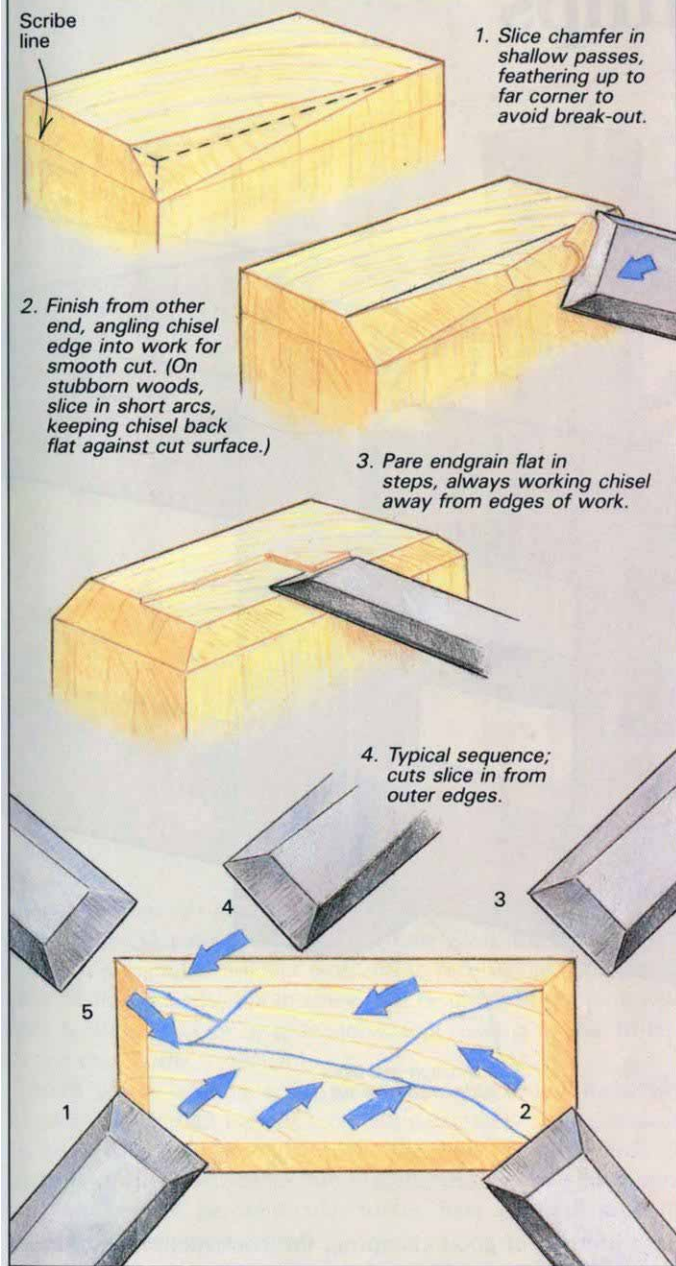
As shown above, when I'm at the bench cutting straight down, I use my head. Despite what my wife occasionally thinks my head is full of, it is quite heavy, and my chin can really move that chisel. The idea is to keep the butt inside the fist so that the chin

pushes against soft meat. In practice, the handle creeps out, but you put up with it because it gives a bit more control.

A variation on this theme is to grab the chisel anywhere along its length and use the chin to push against the side of the handle and forefinger. Both these strategies eliminate the problematic springiness of arm muscles. You can use your hip, chest or other parts of your body in this manner, depending on the circumstances. Once in a great while, you'll look a bit foolish with one leg up on the bench in order to get the right angle, but you gotta do what you gotta do.

A plane is a jig that holds a "chisel" and forces it to cut in a straight line by virtue of a long flat sole. Without this jig, keeping the cutting edge going in a straight line is a bit harder, but as I mentioned earlier, you still have a way to partially jig the action. With the chisel flipped over on its back, start a paring cut. At first, the direction of cut is determined entirely by where you point the tool. As the cutting edge slices into the wood, it-

Fig. 2: Chamfering and flattening endgrain



Chamfering is the first step in paring a flat end (see drawing). Then bring the surface down in steps, working toward the center.

semi-circular slices, take $\frac{1}{16}$ -in. slices off the corner, aiming slightly up so that the cutting edge emerges from the wood before it gets to the other side. When you're down to your knife line at the corner, do the same on the other long edge, then finish the chamfers as shown in the drawing.

If you're right-handed, the first edge will be the easy one since you'll be able to rest your whole forefinger on the work. Moving to the left side will require a grip alteration, but a couple of tries will help you find a comfortable position. I half-heartedly try to do all operations with either hand. (I say half-heartedly because I'm not very good at it—but at least I try.) If you're paring or planing and run into reverse grain, you can flip the tool into the other direction a lot easier if you're a switch-hitter.

Now turn the work 90° and cut the two short edges. This will be easier since the following corners are cut down for this step, too. You now have a chamfer all around the end of the 1x2, right to your knife line. These can now be cut down flatter with the same grip and hand action. Slowly work two opposite chamfers down until you're almost on the flat. Turn the work 90° in the vise, and shoot across, square to the cuts you've just made, to finish off the flattening. If you're having trouble with break-out, rotate the work as many times as you need to, to be able to work "into" the surface. Finish off with a very light cleanup shave.

As you're working along an edge, keep in mind that the angle between the edge of the stock and the cutting edge of the chisel must be less than 90°, as shown in the drawing. Otherwise, the outside wood fibers will have a tendency to break away, being pushed by the chisel without anything backing them up. It can help if you imagine the cutting edge and the body of the stock as two scissor blades, shearing the fibers along the edge.

When you're satisfied with the flat end you've produced, scribe a new line, clamp the wood down horizontally on the bench and chamfer it again. You can either lay the work on a piece of plywood or directly on the surface of the bench, which will back up your cuts and prevent break-out, or you can hang the end out over the end of the bench, a position that more closely imitates situations you'll encounter in real life. This will be trickier, but better practice.

Try the other grips (including chin drive) that we've discussed, and cut the same way you did when the piece was vertical. The more you practice and the harder you make it for yourself (say, cut the end of the stock on a 120° bevel instead of square), the quicker and more accurate you'll be when it really counts.

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develops a flat surface behind the cut. The back of the chisel can begin to rest on this surface, which it has itself created, and use the purchase as a guide for ever-increasing accuracy of direction. The longer the cut, the more controllable it becomes. If you use this help, you can all but eliminate digging in.

To practice the various techniques we've been discussing, I would recommend a short piece of a 1-in. by 2-in. poplar or mahogany. Using your combination square and a sharp layout knife, scribe a line around the stick about $\frac{1}{4}$ in. from one end. Your task is to pare to this line so that you have a nice flat endgrain surface. Figure 2 shows the basic approach, but every piece of wood is different—I won't go so far as to say contrary—so apply the principles in whatever way necessary to suit the job.

Clamp the wood vertically in the vise, sticking up three or four inches above the benchtop. Chamfer the long right-hand edge at roughly 45°. Trying to do this all at once will just get you broken-out wood on the other end of the cut—so don't do it. With easy