

POWER TOOLS.

Which Three?

One man's opinion on the basic workshop

by Robert Sutter

Open the big double doors to my cabinetmaking shop in Rye, New York and you'll see an array of woodworking machinery. Right up front, where it's handy, is a ten-inch table saw and next to it, a thirteen-inch thicknesser. In a side aisle squats a heavy-duty, long-bed nine-inch jointer. Scattered about the shop where they fit in best are several sanding machines and an overarm router. And if you nose around a bit, you'll find a drill press and a two-spindle dowel borer.

In the center of the shop towering over all the other machinery is a twenty-inch bandsaw. It will cut through a 13-inch thick piece of hard wood. A heavy gauge one-inch blade will fit it comfortably. The upper and lower guides on this saw hold the blade firmly to make an unwavering cut. I have used my bandsaw to cut everything from a tiny Dutchman for a repair to a monster bowsprit for a forty-two foot schooner.

Once in a while I wonder which of these sweat-saving machines I'd choose to carry with me were I suddenly to be transported to a desert island and I could bring only three.

Now this is not as idle a thought as it may seem, especially for those who are just starting to build up a power workshop. In other words, if we are limited by money or space to three stationary machines, which should they be?

First choice: the band saw

My choices would be the band saw, jointer, and 6 by 48-inch industrial floor-mounted belt sander. With these three machines (and a boxful of hand tools) my aim would be to be able to accomplish almost anything in the way of classical joinery and cabinetmaking.

Now before you snort, "Doesn't he know that the tilt-arbor table saw is the heart of any shop?" stop and ask, "Who says so?" Consider that the circular saw was invented in 1810 by Sister Tabitha Babbit of the Harvard Shakers. And fine furniture was being made for a long time before that, using frame saws which could cut wood from log to finished shape.

For those unfamiliar with it, the frame saw is a wooden rectangular frame holding a narrow blade stretched the long dimension of the rectangle. Its teeth are oriented perpendicular to the plane of the frame. To use it, one straddled the board to be cut with the saw, which was moved up and down by grasping the side of the frame. It was a big job to rip a long board—so much so that water power was harnessed to it as early as the 17th century.

A band saw is really an outgrowth of the frame saw with the narrow, hooped blade now in tension around two

rubber-tired wheels. It will rip or cross cut depending upon the relationship of work piece to blade, just as the circular saw will. But the thinner band saw blade makes a smaller kerf, hence wastes less wood. Unlike the circular saw, the band saw will cut curves. It is safer to use for ripping thick wood because kick back is not possible. You can also cut very small pieces with greater safety.

What a band saw won't do

Now there are certain things a band saw will not do. It will not cut boards wider (or longer, depending on which way you are cutting) than its throat size—say 14 inches. But how many times does that happen compared to trimming off less than the 14 inches? And how easily could those odd occasions be handled with a hand saw?

If your band saw is of rugged enough construction to accept a wide, heavy-gauge blade, you can resaw thick lumber into thinner boards. But plane a one-inch board to one-half inch and you leave another one-half inch board on the floor as shavings.

I know the bandsaw does not always cut as straight a line as the circular saw. Do as the old timers did: Cut oversize and plane to exact dimension. Just be sure your bandsaw has provisions for a rip fence and grooves for a miter gauge to help guide cutting.

Now I'm not against table saws—I use mine constantly. What I am against is a table saw that is not heavy enough to do the different kinds of work it is meant to do. The kind of table saw I have in mind costs over \$600; for a lot less, you can buy a good serviceable band saw. And later on, when you get more money or more room, get the good table saw you want. At that point you'll want a band saw anyway, and you'll already have it!

Second choice: the jointer

I would bring a jointer to my desert island because planing irregular edges and surfaces (left by a bandsaw) is what jointers do best. You should purchase a jointer with the biggest capacity you can afford, limited solely by your purse and the size of your shop. Not only will this tool square and smooth edges and faces of planks, but it will also dimension rough lumber, remove warp cupping and twist, taper legs and rabbet edges—a truly versatile tool.

For all its usefulness, however, the jointer is the only one of the three power tools chosen for which hand tools can be easily substituted. Careful manipulation of a hand-pushed

24-inch jointer plane will produce beautiful smooth, square edges suitable for gluing up. A jack plane and smoother plane will clean up the face of a board in short order. If you need a true face for gluing, then take a few swipes with the jointer plane to finish the job.

If you do choose to go the hand plane route, buy the best hand planes you can; wood or metal is up to you. A set of jointer, jack and smoother planes will set you back over \$100, unless you make them, so consider your choice in this light.

Third choice: the belt sander

My third choice, an industrial quality stationary belt sander, will square cross cuts as well as sand edges and surfaces. Of course you can do this by hand, but considerable skill and patience is required.

When purchasing a sander, I recommend the 6 by 48-inch size rather than the 4 by 36-inch since belts for the former are easier to obtain. Make sure that the platen against which the belt runs is rugged. It will be the determining factor in getting a good result. Most sanders can be operated in either vertical or horizontal positions: the former for edge grain with table and mitre gauge which should be included as standard equipment, the latter for sanding surfaces and edges against a fence, likewise standard equipment. Open garnet cloth belts in grits 60 and 100 give good wear and sufficient variety for most work.

In case you're wondering, portable belt sanders are alright for flat surfaces, but almost impossible to hold square on narrow edges. Stationary disc sanders are fine for end grain, but death on faces and edges where they will leave scratches and gouges galore.

Smuggle in a router

That completes my triumvirate. But there is one other tool I'd like to take to this desert isle if I could smuggle it in somehow. It is the indispensable, all-purpose, hand-held electric router. A router rated under 7/8 horsepower will not be capable of the full range of tasks this versatile tool can perform. I prefer rack and pinion depth settings and a micrometer fence for accurate and easy control. It will help if you substitute a 12 by 5 by 1/4-inch piece of plexiglass for the black bakelite base that comes attached to the router. Since plexiglass is transparent, you can see what is going on, and the longer base adds stability. I use plain steel router bits in preference to carbide tipped ones, for carbide can only be kept sharp with an expensive diamond hone. Get used to honing your bits each time you use them, as dull one tend to chip, splinter, and burn the work.

The router will cut grooves and rabbets both straight and circular. It will bore clean, flat-bottomed holes and trim overhanging edges flush. With its help you can make mouldings and shape edges, set locks and hinges, and make lap, mortise and tenon, finger and dovetail joints. It is a versatile tool, the uses of which are as broad as experience and imagination permit.

Finally, for those of you who still have trouble swallowing the band saw over the table saw, maybe it will go down easier with a portable contractor's saw for those difficult occasions. But someday do get a table saw. And thank you, Sister Tabitha.