CONVERTIBLE SHOP

A small shop can't be all things at all times. Design it with adaptability in mind.

1. A roller, clamped to the bed of the jointer, which is placed close to the tablesaw, helps support wide stock for crosscutting.

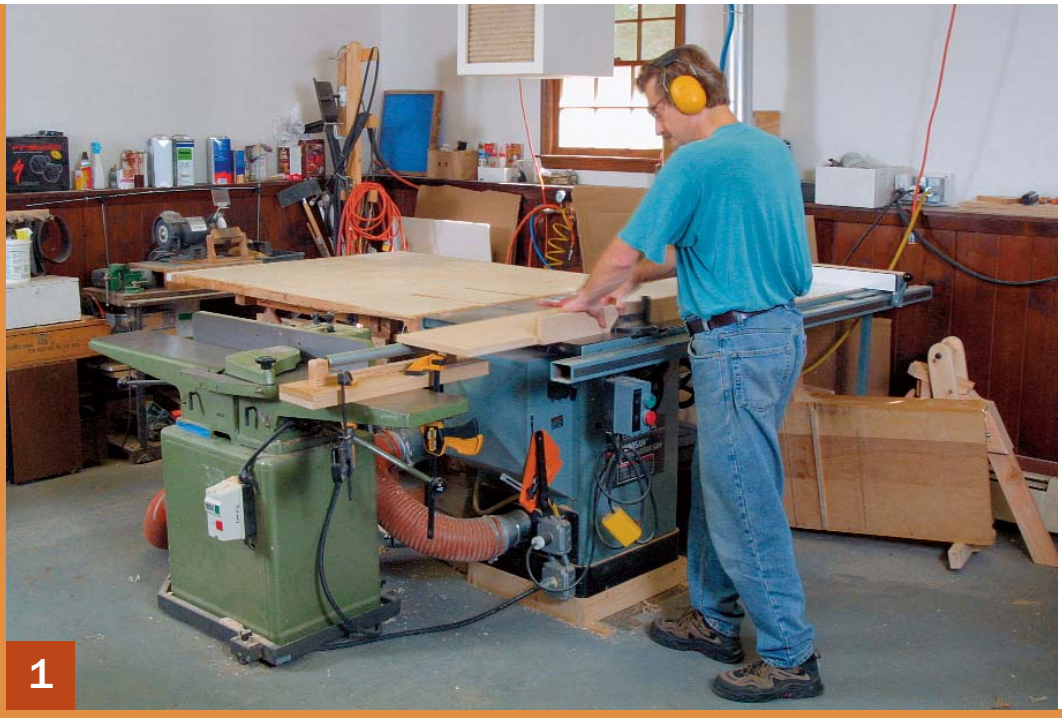
2. To gain space in the center of the shop for assembly, the jointer may be moved.

3. The outfeed table wheels away to create a finishing area.

4. In preparation for spraying, a drop cloth is tossed over machines.

5. A wooden duct extension fits between the shopmade air cleaner and window frame to exhaust overspray.

6. The fine-particle filter has been replaced with a coarse furnace filter to capture finish before it blows outdoors.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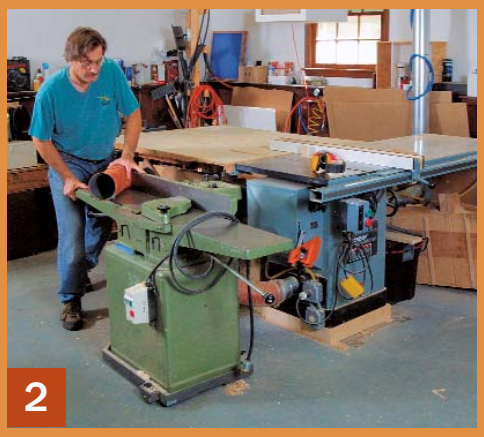
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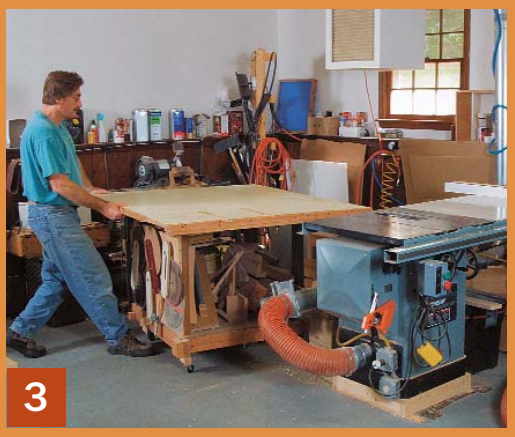
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My first shop was an old garage nestled on a bank above Puget Sound near Seattle. It had an old plank floor with gaps wide enough to swallow small tools and hardware. For power I had one extension cord that snaked back to the house, and lighting was provided by an open garage door. I have fond memories of that shop, bundled up against the cold, working under natural light, hacking away and successfully cutting my first dovetail joint. I remind myself of those days when confronted by the limitations of my current shop, which by comparison is a dream.

My basement shop is only 20 ft. by 21 ft.—about the size of a two-car garage—but I've tackled projects as large as a run of kitchen cabinets. The secret to getting the most out of this small space is mobility. Almost everything rests on locking casters—machines, tables and shop-built tool chests.

Storage and organization are also vital in a small space. The area under every machine tool or bench is utilized for storage. Yes, it does get crowded when I undertake a large project. But I can reconfigure the space as needed for milling, assembling and finishing.

Layout for a small shop

Some tools are best left stationary. My tablesaw stays put because it's very bulky and heavy. And the dust collector must have a permanent home because of the metal ductwork attached to it. The rest of the shop was designed to work around these machines.

Machine tools, as well as benches, must be located where they can handle the largest piece of stock I am likely to use. And with a small dust collector, I have to keep duct runs to a minimum (for more on dust collection, see *FWW* #141, pp. 82-87). I try to keep most of the mobile tools parked where they can be put into service easily.

In a small shop, you'll often see the tablesaw angled. This orientation takes advantage of the room's diagonal dimensions. That's a good solution, but it typically means the saw reaches into the center of the room. When I have a large project going, such as a run of cabinets, I like having the center of the shop available for assembly. I orient the tablesaw parallel and close to the shop's longest wall, which leaves me with more than enough room to

Photos: Michael Pekovich

Basement Shop on Wheels

With mobile machines and tables, the shop can change shape as needed

BY ANATOLE BURKIN

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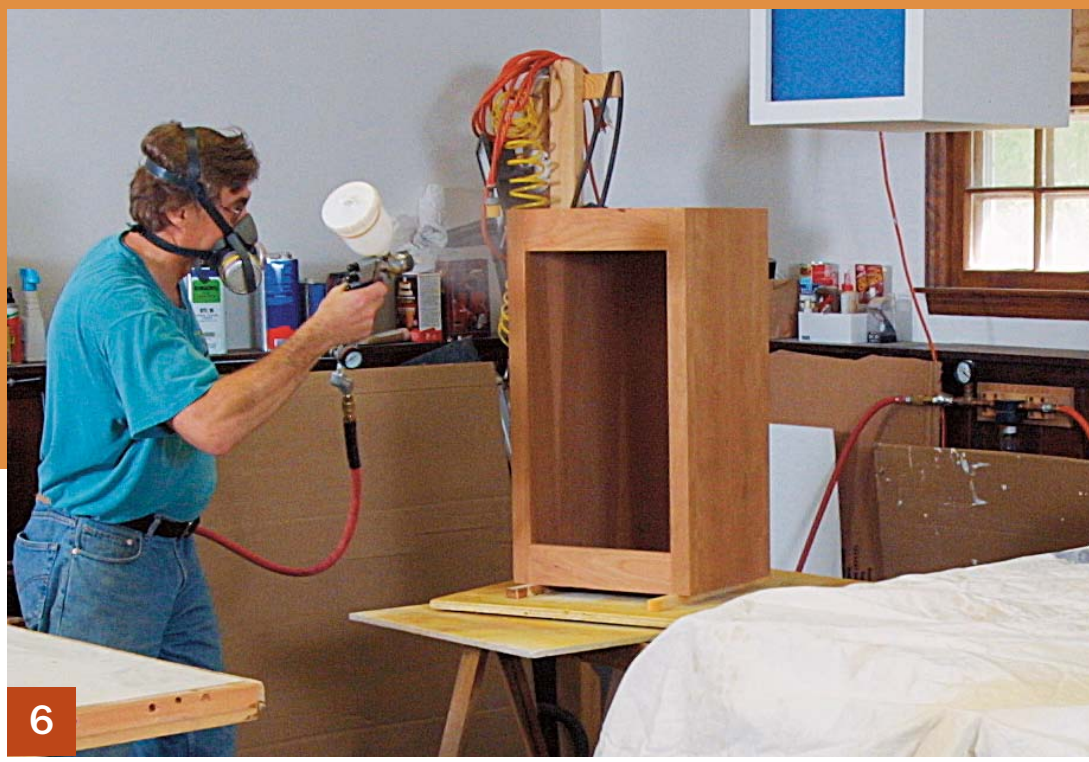

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cut a full sheet of plywood. The tablesaw's outfeed table is set on casters so that I can wheel it out of the way and use that space for spray finishing.

In a crowded space, adjoining tools can be set up to work with, not hinder, one another. Although I'd like to have a sliding table for my tablesaw, I haven't the space. But I use my 8-in. jointer, which is parked to the left of the saw, to assist with sheet goods. At a scrap metal yard I picked up a set of metal rollers from a conveyor assembly. I made a wooden frame for the roller that allows it to be clamped to the jointer bed and provides support when handling sheet goods. Total outlay was about $2.

The jointer-tablesaw pairing didn't work at first because the jointer fence was higher than the tabletop of the saw. Lowering the jointer seemed like a lot of work, so I raised the tablesaw on blocks. It turns out that the added height has made repetitive tasks, such as tenoning, much more comfortable for my 6-ft. frame.

Plenty of room for the chopsaw

Although the chopsaw is small, it's called upon to handle very long stock. Finding the perfect spot was a compromise. There isn't room for a dedicated chopsaw stand with 8-ft.-long wings on both sides, so I use my European-style workbench to serve as one wing. A piece of scrap laid across the table serves as a low-tech outfeed support. To the left of the chopsaw, I use another one of those scrap-yard conveyor rollers to make it easy to slide stock into place.

Chopsaws spray sawdust all over the place, and while I haven't totally solved the

Sawdust is captured by a box, which is connected to the dust collector. *A roller bolted to the left of the table provides stock support. The workbench (with the aid of a piece of scrap) provides support to the right of the chopsaw.*

problem, my method works okay. The key component is a capture box behind the saw to catch dust that's kicked back. A 5-in. port is added to the top of the box and connects to my dust-collection system. Additionally, I run a small hose from the saw's dust port (where the bag goes) and snake it a few inches into the 5-in. dust-collector hose. Whatever doesn't go up the hoses eventually settles into the capture box.

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Thicknessing machines

I have more thicknessing machines than I really have a right to own, but I've figured out a way to keep them from being a nuisance. For taking a thin pass or thicknessing highly figured woods, nothing beats a portable thickness planer with rubber infeed and outfeed rollers. Bigger machines, such as my 15-in. thickness planer, are good for hogging off material, not delicate passes. And when it comes to removing tearout from highly figured woods or sanding shopmade veneer, I appreciate every penny I spent on my drum-style thickness sander.

Because I only use one of these tools at a time, I have one dust hose hanging from the ceiling to serve them all. To save space, I mounted the small planer piggyback on the larger one. Although the portable unit can be lifted off and placed on a bench, I typically just leave it in place and plane boards at chest height. Below the planer and sander I've installed shelving to store sanding belts and other tools.

A simple, functional router table

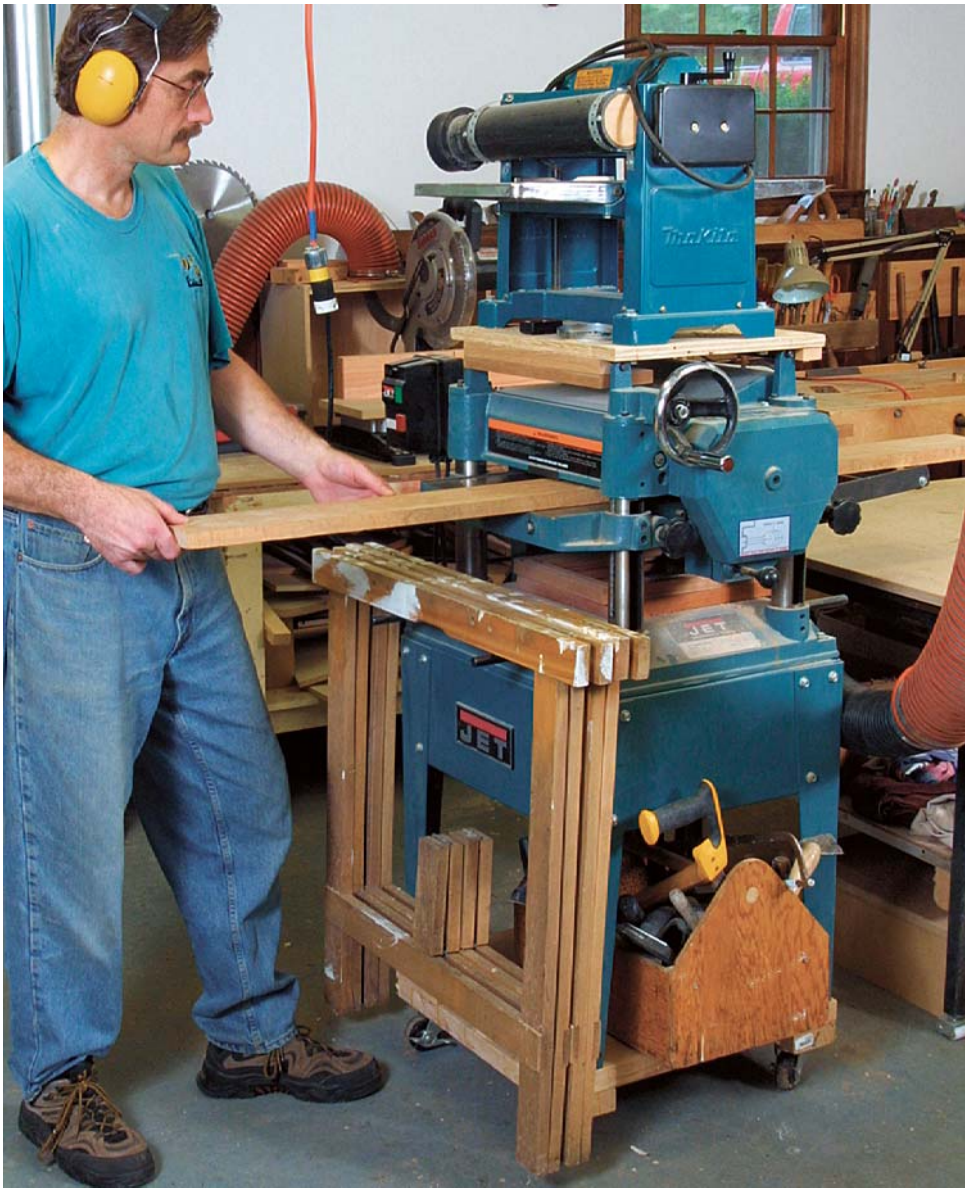
My router table has evolved over the years. It now features dust collection above and below, bit storage and a top large enough to hold a second router.

The dust collection might not meet the standards of John White's router cabinet (see pp. 55-61), but I'm happy with it. A large reducer (10 in. to 5 in.) is set into the base of the cabinet and connects to the dust collector. On top, the fence has a port for a 2½-in.-dia. hose. A pair of doors allows easy access to the router. The cabinet is set on wheels so that it can be moved to a corner when not in use.

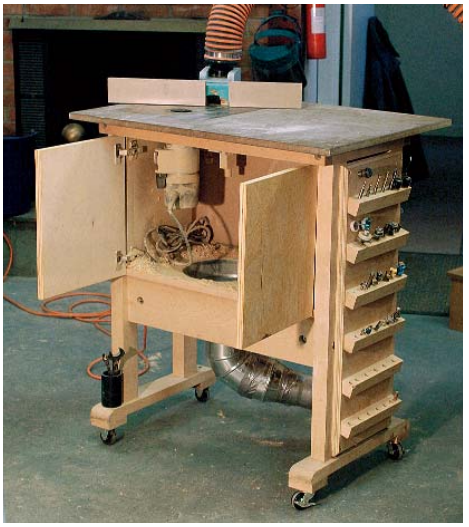
Places to store tools

I have a small, simple tool rack near my workbench in which I keep chisels, handsaws, mallets and hammers. The workbench has two shelves to store all of the handplanes I own. Now that the shelves are full, I know I have enough of them.

Most other small tools are kept in mobile shop-built carts. One houses everything I



Machines to surface stock. *The 15-in. planer can remove stock quickly. The benchtop planer riding piggyback excels at taking light passes without leaving knife marks. And a drum sander (not shown) speeds up what most consider the least enjoyable part of woodworking.*



Traveling router cabinet. *Dust collection is provided below, via a 10-in. to 5-in. reducer, and above, via a 2½-in.-dia. hose connected to the fence. The table is big enough to add another router if needed.*

own for drilling and screwing. Most of the time it sits next to the drill press, but when I'm assembling parts, I roll the cart to where I'm working. The other cart contains measuring tools as well as all-around stuff, such as mechanic's wrenches and drivers. Both carts can also serve as stock carriers, for moving parts from one machine to another. (The mobile router table can also be used this way.)

The idea of putting all of my clamps in a trash can isn't new. But to keep the long pipe clamps from tipping over the can, I built a simple rack that is screwed into the can and keeps the clamps more or less upright. The can is mounted on a dolly, so I can move it around.

Low-cost electrics and pneumatics

I originally lit my shop using cheap shoplight fixtures that cost about $7 apiece, and that worked out to about a buck a year before they began failing. I recently swapped them with flush-mount fixtures of a higher quality that have electronic ballasts, which are quieter and turn on instantly. The fixtures also use T-8 bulbs, which are more energy efficient. I connected them using a plastic track system that is quite compact and easy to install. Most home centers sell these fixtures, and it's an inexpensive way for a nonelectrician to set up a very satisfactory lighting system. I spent about $250 for the five fixtures and hardware.

The shop did not have 240-volt power when I moved in. To keep down costs, I went with PVC conduit, installed on the rear outside wall of the house. Then I routed enough wire through the conduit to give me a gang of three 240-volt circuits. A 12-gauge extension cord, snaked along the main dust-collection duct, brings 240-volt power to the middle of the shop.

I find a lot of uses for compressed air: everything from pneumatic tools to clearing out dust from wood pores before spray finishing. I didn't want to go to the trouble of plumbing my shop, but at the same time I didn't want just one large coil of hose to drag from one part of the shop to the other. The solution is a three-in-one manifold and filter that allows me to provide clean, dry air to three locations both inexpensively and quickly. One long hose runs out to the garage. Another long one snakes along the ductwork and provides air to the opposite side of the shop. Near the compressor, a short run of hose provides air for spray finishing.

Storage and organization are vital in a small space. The area under every machine tool or bench is utilized for storage.

Spray finishing without a booth

I like to spray finish. You can't beat a spray gun for speed and the amount of control it brings to the task. But I don't have room for a spray booth. Nonetheless, I can spray in the shop without worrying about dust specks by using a two-pronged approach. First, I clean the shop before finishing. I'm not overly fussy about the cleanup except in the corner where I spray. Second, I use fast-drying finishes, such as water-based products or shellac. I don't spray slow-drying or highly flammable finishes.

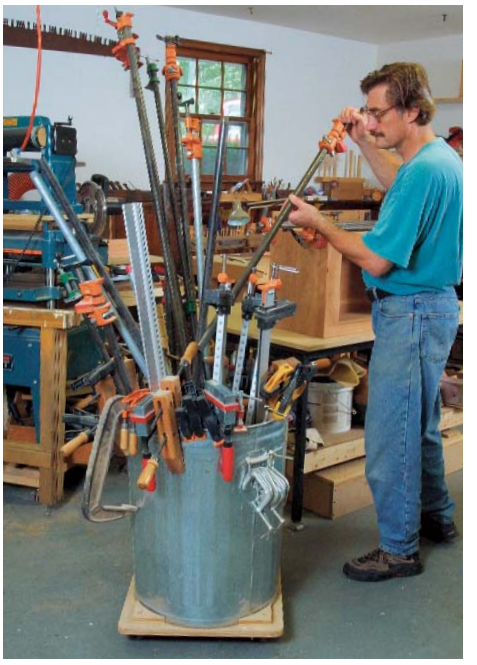
Spray finishing also requires a method of removing the overspray. I installed a large industrial fan in a box made of medium-density fiberboard (MDF) and hung it in front of a window. When I spray, I open the window and press-fit an extension duct to the fan box, which helps direct the air outdoors without fouling the window casing. The fan box has a slot for a coarse furnace filter in front, which catches much of the finish before it reaches the fan. Without the extension duct in place, the fan doubles as an air cleaner. For that application, I use a fine-particle filter. (In warm weather, one could just flush the air outdoors.)

The tablesaw outfeed table doubles as my spray-finish bench for small objects. To keep it and the saw clean, I cover the entire setup with a large drop cloth. For larger pieces, I unclamp the outfeed table from the saw and roll it out of the way. And to keep finish off the walls and floor, I keep on hand large pieces of cardboard, such as those used to package appliances.

A shop is never done

I've been itching to get my hands on an old lathe but haven't found one yet. In the meantime, I've rearranged the shop in my head a number of times to make room for a newcomer. Try as I might, I'm not sure I can fit one more large tool in that space. Which leaves me thinking that maybe it's time to consider a freestanding building or moving to another location with the sort of shop space everyone craves: a large barn with a loft. I could get a few hundred bucks selling all of the used casters, enough to buy a nice, new handplane. But until then, I'll enjoy the space I have. □

Anatole Burkin is the executive editor.



Clamps to go. *Stored in a metal trash can, clamps can be wheeled to the assembly area, then rolled into an out-of-the way corner when not needed.*