

# Smart Shop in a One-Car Garage

Space-saving solutions for a small work area

BY MATTHEW TEAGUE

Tales of bad shops are a woodworker's war stories. After living in five houses in seven years, I have plenty of them to tell: ladders under closeted trapdoors that descended into windowless basements, ceilings that were only an inch taller than I am when I stand barefoot, abandoned radiators, wasp nests, snow, water—good Lord, the water—and a hole in the middle of one shop floor (about 2 ft. in diameter and 2 ft. deep) just behind the infeed side of my tablesaw. Oh, yes, I could tell you some stories. But that's not my point. My point is that when I moved into a rented house with a one-car garage—9 ft. wide and 18 ft. long—most of my coworkers wondered how I would fit a shop into such a tight space. But after the shops I've endured, I felt like I'd finally arrived.

I spent a lot of time planning to condense workspaces and to make sure that machines work efficiently with one another, and I found quick and simple solutions for storage. I think I've turned the 160-sq.-ft. garage into a smoothly running shop; it's just the kind of place where I want to spend a Saturday or unwind after a day at the office. What's more, when I move, the shop can go with me; everything simply lifts off the walls or rolls out the doors.

## A garage transformed

A few months ago, the garage my shop was to be housed in had bare stud walls and one electrical outlet, stored a motorcycle and was littered with enough garden tools to dig a new sea. Luckily, my roommate, who owns the house, was amenable to revamping the space, provided that I pitch in with some of the work. He wanted insulated walls, electricity and wide barn doors on the front—or at least as wide as possible on a 9-ft.

run of wall. Renovating the garage would be a hefty task, and I had to do it fast. I had promised my future in-laws a dining set, and if they had to wait much longer, I feared they would take their daughter back.

While I desperately needed a good workspace, I had to remember that I only rent the house. I didn't want my shelving and workstations to be built in. I wanted to be able to lift them off the walls and move them out when I find and buy Connecticut's affordable house. And I didn't want to sink a fortune into cabinets—it's a workshop, after all, and what comes out of the shop is far more important than what goes in. I needed a shop that was well thought out and engineered for a smooth workflow, but not one that was overbuilt. I forgot about all of the garbage that littered the little garage, and started planning on a clean sheet of paper.

## Mapping out the territory

Fitting the major machines—tablesaw, jointer, planer, bandsaw, router table, drill press and chapsaw—into a room designed to hold a car (a tiny 1920s Model A, at that) is about as difficult as it sounds. I started on graph paper with paper cutouts of all of my tools. Everything had to be drawn to scale because half a foot in such a tight spot could make or break the shop. As in most

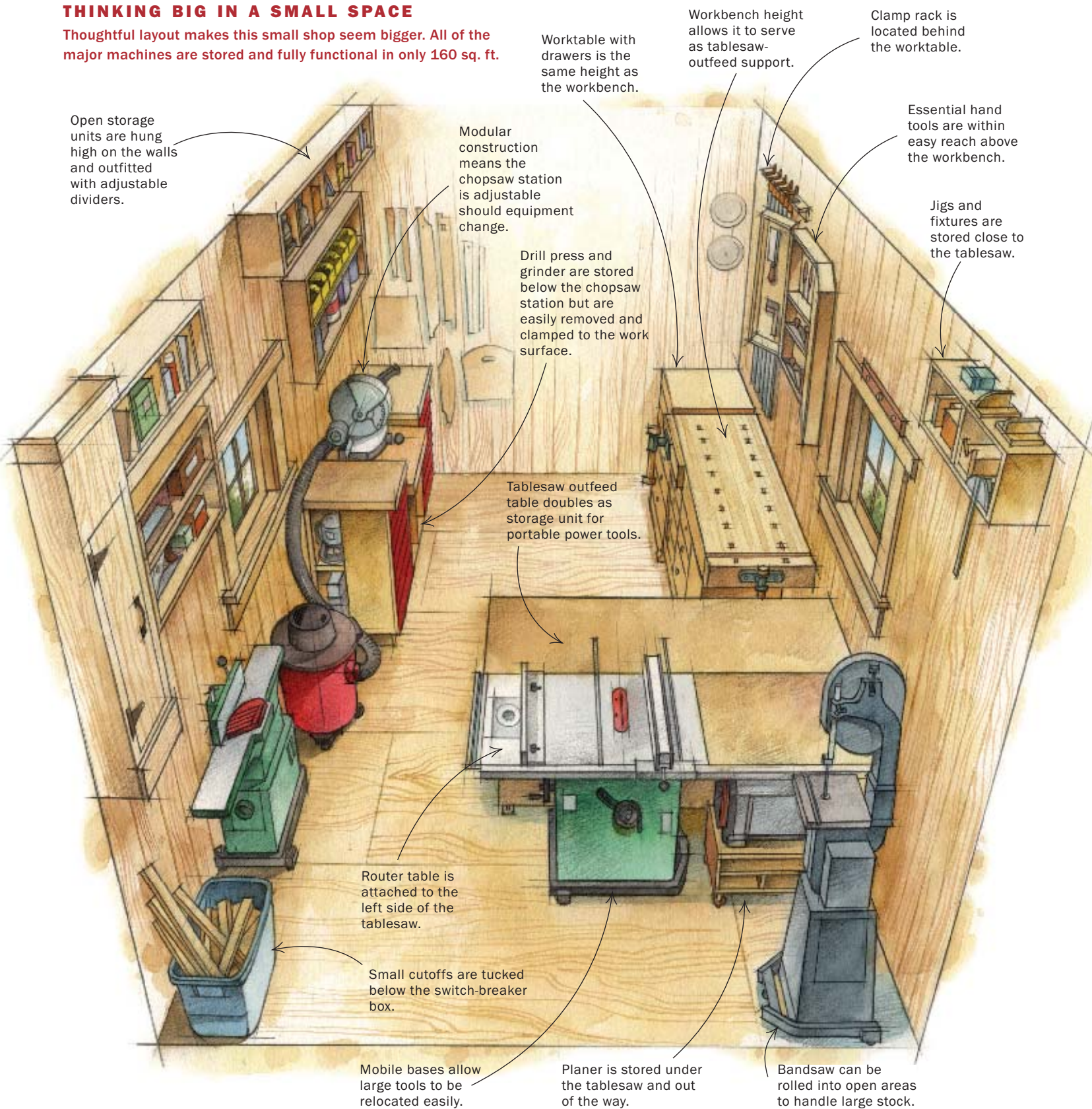
shops, large stationary tools are key, but they also demand the most space, so the tablesaw seemed a good place to start.

As soon as I put pencil to paper, I saw that I was going to have to forgo my wide 52-in. Biesemeyer fence—there simply wasn't room. I downgraded to a shorter fence by changing out the rails, which at this point only meant lopping off the end of my tablesaw



**THINKING BIG IN A SMALL SPACE**

Thoughtful layout makes this small shop seem bigger. All of the major machines are stored and fully functional in only 160 sq. ft.



Open storage units are hung high on the walls and outfitted with adjustable dividers.

Modular construction means the chop saw station is adjustable should equipment change.

Drill press and grinder are stored below the chop saw station but are easily removed and clamped to the work surface.

Table saw outfeed table doubles as storage unit for portable power tools.

Router table is attached to the left side of the table saw.

Small cutoffs are tucked below the switch-breaker box.

Mobile bases allow large tools to be relocated easily.

Worktable with drawers is the same height as the workbench.

Workbench height allows it to serve as table saw-outfeed support.

Clamp rack is located behind the worktable.

Essential hand tools are within easy reach above the workbench.

Jigs and fixtures are stored close to the table saw.

Planer is stored under the table saw and out of the way.

Bandsaw can be rolled into open areas to handle large stock.

## MULTIPURPOSE CHOPSAW STATION



**A well-thought-out corner of the shop.** The chop saw station not only provides good outfeed support for the saw, but it also stores the grinder and the drill press and houses two banks of drawers.

cutout with scissors. I soon saw that large tools had to be mobile; if I left open floor space, any tool could be pulled out easily and put to use. There still were a few wrinkles—like where my router table would go and how I could consolidate my grinder, chop saw and drill press into one smooth-running workstation—but after a little thinking and shopping around, I solved those problems, too.

I also kept an eye on the horizontal arrangement of tools and workstations, making sure that the outfeed from certain tools—like my tablesaw and jointer—wouldn't be hindered by workbenches or tabletops. After a few more hours of moving around the cutouts and positioning the major machines, I started thinking about storage space and drawing quick sketches of the outfeed situation. In the end, I came up with an arrangement that housed the major tools in just about 80 sq. ft.—about half the square footage of the entire space. It was time to run electricity and build the walls.

After cleaning the garage of all its old tools and odds and ends, my roommate and I hired an electrician pal to wire the space. We positioned all of the outlets 44 in. up from the floor—just above



**Drawers are like clamps—you can never have enough.** Metal drawers slide in sawkerfs in the carcass. Hardware and fasteners are stored in watchmaker's cases. Drawers for cutting tools are padded.



**A portable work station.** The drill press and grinder are both stored below the chop saw but are easily removed and clamped to the work surface.

bench height—and ran them every 4 ft. We also dropped in four 220-volt outlets conveniently located to reach the beefier machines.

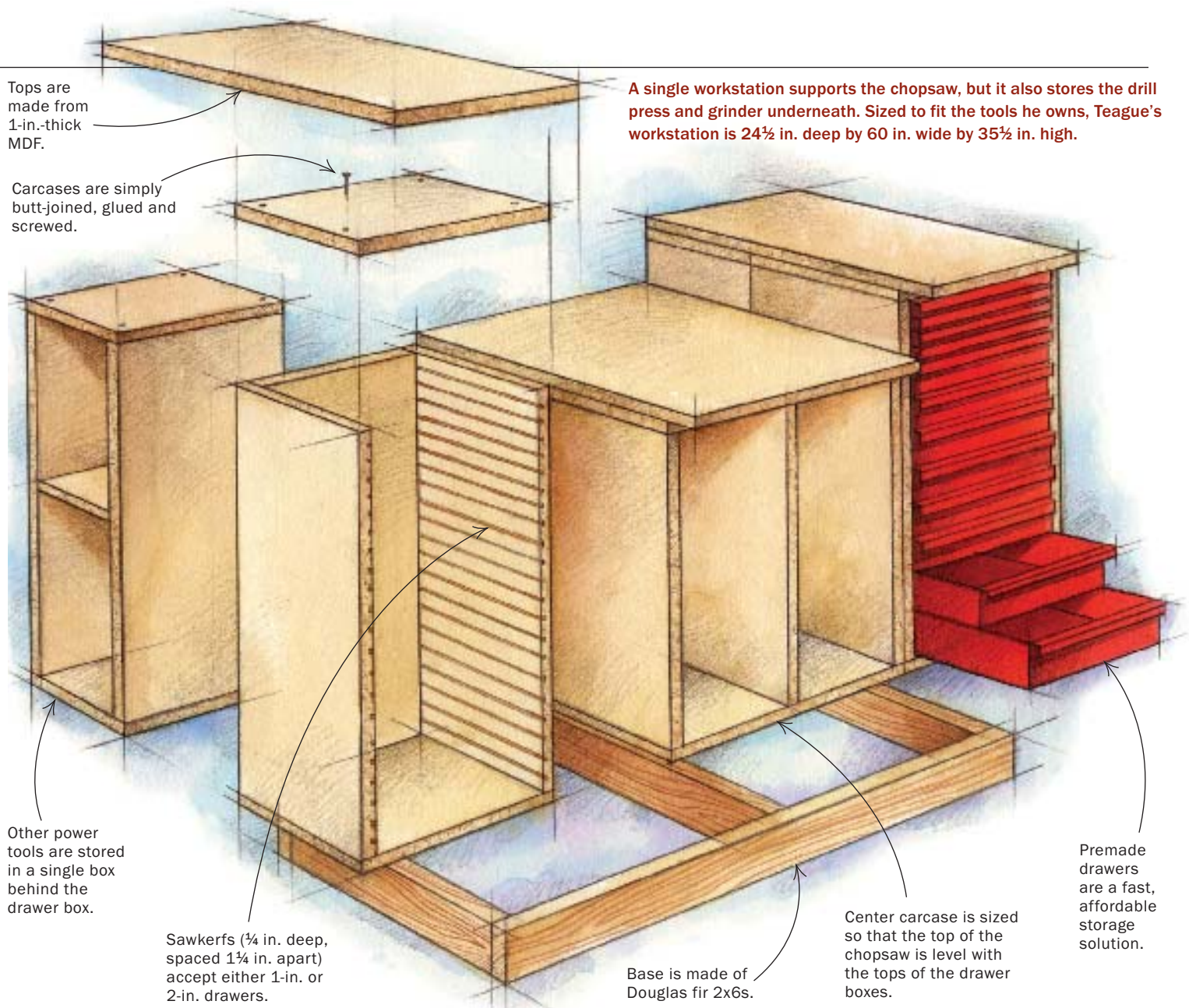
We insulated the walls and hung T-111 siding, which is stronger than drywall and does a better job of holding tool cabinets. The light color of the siding opened up the space, and the rough wood surfaces gave the shop a warm, inviting feel. We then built and hung the barn doors, which took only a weekend to accomplish.

The existing wood floor in the garage would have been nice on the feet, but it was too old and uneven to allow my heavy mobile tools to move easily. We laid down plywood flooring over the existing wood floor and covered it with a few coats of water-based polyurethane.

I have to admit I was shocked that everything worked just as it had on paper. Now I was ready to roll in the machines.

### Large tools rest on mobile bases

My tablesaw sits approximately 4 ft. inside the barn doors, leaving enough space on the left side of the saw for my jointer to



## Workstation assembles easily



**1** **Set the boxes in place.** The main carcass is centered on the base and screwed into place.



**2** **Keep the carcasses flush and secure.** Clamps hold the drawer box in place while it is screwed to both the base and the center carcass.



**3** **Exploit every inch.** Storage boxes are set behind the drawer boxes and screwed in place.

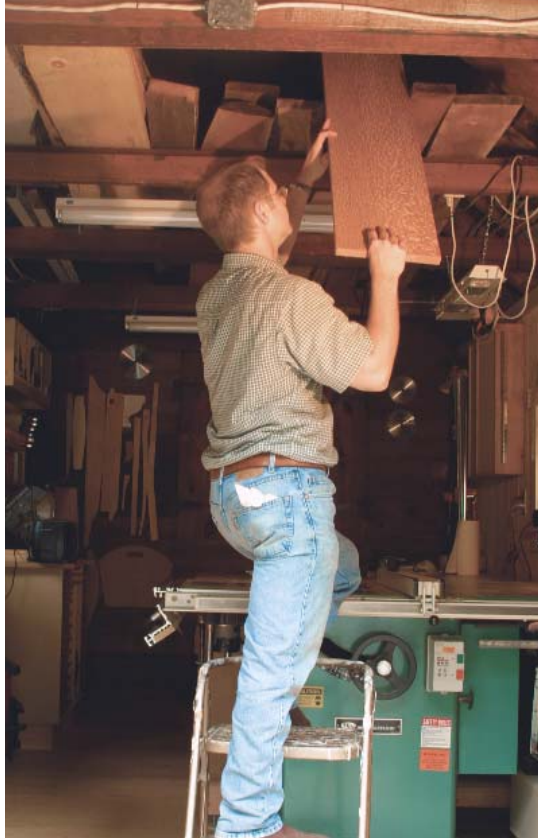


**4** **Use a thick top.** The 1-in.-thick MDF is coated with a few washcoats of shellac and will stand up to heavy work.

stand against the opposite wall. And because I put the jointer on a mobile base, I can move it around if I need to joint especially long boards. My small lunch-box planer, which always has worked wonderfully for me, was relegated to the cubbyhole below the right-hand side of my tablesaw. It saves floor space, but because the planer is light and kept on a shopmade mobile base, its usefulness is not limited.

One big hiccup always had been my router table. It made sense to save space by housing the router table in the tablesaw, but most models mount on the right side of the saw—a setup I'd never been happy with. And with the right side of the saw against the wall, where it clearly had to go, I couldn't stand in front of the fence when routing—doing otherwise always had seemed unsafe. Still, a stand-alone router table was going to take up more room than I had to spare. Browsing through catalogs and the Internet, I found what is the only left-mounted router table that I know of; it's made by Bench Dog (800-786-8902; [www.benchdog.com](http://www.benchdog.com)). Although my choice meant losing 3 in. between the tablesaw and the jointer, I still had plenty of working space. Plus, I was able to get rid of my free-standing router table altogether.

The left-mounted router table works great now, but because my tablesaw table is larger than average—even for a cabinet saw—I



**A place for everything.** Space above the rafters is used for storing—and even drying—lumber.

had to redrill a few holes in the top of the tablesaw and install spacer blocks to make the router table fit. But the afternoon's work has proven well worth it. Not only does the table save space, but it also works better than any free-standing router table I've ever had. I dropped in a router lift (*FWW* #155, pp. 56-61) to make it even more user friendly. Now I can change router bits topside with a quick-action wrench, saving both time and hassle.

As planned, the bandsaw rolled into the front corner of my shop, just behind the tablesaw. It is close enough to the doors that I am able to roll it out and use the open doorway as outfeed space as needed. But this is only in a pinch. For most of my woodworking—chairs, small tables and chests of drawers—the bandsaw has plenty of room just where it is.

This arrangement took care of the major stationary tools, and I still had two long walls for the chopsaw station and the workbench. I ended up designing

and building a modular chopsaw station that houses not only my chopsaw but also my drill press and grinder. It holds a bank of ready-made drawers and leaves a few cubbyholes in back to store routers and such.

Using the tablesaw's outfeed table as storage for power tools gives me plenty of open floor space, while exposed rafters work



## HAVE WHEELS, WILL TRAVEL



**Buy a mobile base.** Storing the bandsaw and jointer on mobile bases allows Teague to pull them out into the open when he has to handle especially long stock.



**Or make one yourself.** Teague's planer base is nothing more than an MDF box with locking casters screwed to the bottom, and it includes shelves as well.

well as lumber racks. Once the major machines were in place, the rest of the shop almost designed itself.

### Condensed work areas

One key to working in a small shop is to condense your workspaces for both economy and ease. I wound up building units out of medium-density fiberboard (MDF) to handle tablesaw outfeed, as well as my chopsaw, grinder and drill press.

While I would have loved a nice, long tablesaw-outfeed table that could handle large sheet goods, there was hardly room. When working with plywood or MDF, I cut the sheets to rough size with a circular saw in my driveway, then trim them at the tablesaw. Ninety-nine percent of the time, the 2-ft.-wide outfeed table provides all of the support I need for the tablesaw. And if I'm cutting large sheet goods, the workbench is positioned to serve as outfeed support. But I had to get more out of the outfeed table than just outfeed support—I needed a place to store handheld power tools and to serve as another work surface for assembly and other tasks.

The outfeed table is a heavy setup, but I needed the heft to make it sturdy. I assembled the table with knockdown fasteners so that the whole workstation could be disassembled for easy transport when I move. I installed a 1-in.-thick MDF top and covered it with a few coats of shellac—not only does the shellac provide a moisture barrier, but it also makes the MDF less prone to scratches. Four 4-in. lag bolts serve as levelers, making it easy to bring the outfeed table flush to the tablesaw.

It would have been nice to have a sliding compound-miter saw, a floor-standing drill press and a permanent grinding station that was always ready to go, but working in a small shop meant I had to accept some sacrifices. And because I was working on a budget, I couldn't upgrade all of my tools—not to mention that my tools had always worked well for me.

After a bit of head scratching, I devised a way to combine my chopsaw, drill press and grinder into one workstation that takes up only a small footprint and works smoothly. I didn't work out all of the dimensions ahead of time; I just built it box by box, sized to fit each tool. Almost accidentally, it worked out better than I'd hoped. Because it's built as a modular unit, the workstation is extremely flexible. Should I replace any of my current tools, I simply can change out one of the units and replace it with a new and correctly proportioned carcass.

### Well-organized storage

The bank of drawers on my chopsaw station provides more than 30 sq. ft. of storage space. I ordered premade metal drawers (around \$4 apiece) from Lee Valley (800-267-8735; [www.leevalley.com](http://www.leevalley.com)). Installation was simple. All I had to do was build a box and run sawkerfs every 1¼ in.; the 1-in. and 2-in.-deep drawers slide into place and can be rearranged however I like. The drawer-box carcass became the basis around which I built my chopsaw stand.

One of the best parts of working for this magazine is that I get to visit the best workshops in the world, and the good ideas I see are



### ONE TABLE, MANY USES

The outfeed table not only provides support for the tablesaw, but it also stores power tools and other materials. The shop vacuum can be used for dust collection at the tablesaw. The 1-in.-thick MDF top also serves as a sturdy work surface for assembly. Lag bolts in the base make it easy to level the table.



**Condense workspaces.** A router table that mounts on the left side of the tablesaw saves valuable floor space and still leaves plenty of room for moving around.



**Making it work.** A well-planned space—even if it's small—allows plenty of room for building furniture. Here, Teague works on a set of cherry dining chairs.

key to working in any shop—I hate floundering around a sloppy space trying to locate a bit or a tool. And for space reasons, organization is even more important in a small shop. I used watchmaker's cases from Lee Valley to hold screws and other hardware (see the top right photo on p. 46). With just a glance, I can find what I'm looking for.

#### Where MDF falls short

I was bent on using quick methods and economical materials, but when it came to my workbench, it was hard to accept compromise. I recently inherited an old workbench top from a friend, who had inherited it from another friend, who'd been given the bench by a boatbuilding pal many years ago. It is exactly the kind of workbench that makes you want to be a woodworker—an end vise, a front vise, a tail vise and a heavy

abundant. While visiting Tony O'Malley, a woodworker in Emmaus, Pa., I was struck by the efficiency and cleverness of his storage space. He had built storage units all around the top of his shop wall similar to the MDF units I had installed above my bandsaw, jointer and chopsaw station.

I built them using an ultralight MDF rather than the weightier MDF of my outfeed table—the weight helps in that situation, but it isn't necessary on the wall. The light stuff is also much more pleasant to use. As O'Malley did on his shelves, I ran dadoes in the top and bottom to make the storage units adjustable and adaptable: By rearranging the 1/4-in.-thick dividers, I can design separate cubbyholes for each tool.

Above both the chopsaw station and jointer, I screwed simple plywood shelves to the wall. The shelves hold screws, router and drill bits and help keep everything organized. Staying organized is

maple top scarred with history. I built a maple base for it and installed the same drawer boxes I'd used on an earlier bench. I don't think I could sleep at night if I stored my favorite chisels and planes in an MDF box above the bench. Instead, I made a simple cherry wall unit with two box doors. I picked my favorite and most

necessary hand tools and outfitted the box with custom tool holders. It was quick work, but the unit serves all of my needs.

Though the garage required a fair amount of renovation, the shop came together quickly and works better than I ever would

have imagined. A good workshop should be simple and sensible but designed with an eye toward efficiency. A sensible shop makes you work better and smarter. The best part is that when I move, the shop can be disassembled to move with me. □

**Watch it on the web**  
For a shop tour and more storage ideas, go to [www.finewoodworking.com](http://www.finewoodworking.com).

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