

WOODWORKING BASICS

Build a Sturdy End Table

By WJ Staff

Using techniques from our last Woodworking Basics article, we take the next step up to a laminated tabletop.

SEE PAGE 5
for a list of
supplies and
lumber

*Tabletop: Wipe-on oil finish
Legs and aprons: Paint*



MORE ON THE WEB



To watch a video of building this table or to download a PDF plan for it, please visit woodworkersjournal.com and click on "More on the Web" under the Magazine tab.



This is the second installment of our *Woodworking Basics* article series. In the April issue step stool project, we covered, in part, cutting the ends of prepared stock square and cutting legs and aprons to length. Those same techniques will be used in this small table project. If you missed that issue or want to refresh your memory, you can find a video and downloadable article PDF covering the previous project at woodworkersjournal.com. This time around, we will assume you have those basics well in hand.

Solid Wood Tabletop

This small table has very similar parts to the step stool – legs, aprons and top. Again, we will avoid using power tools to keep things simple. The biggest difference in this project is that the tabletop is not made of plywood but pieces of solid wood instead (beautiful mahogany in this case). This change adds beauty but introduces several woodworking problems to solve. First, solid wood expands and contracts widthwise with seasonal humidity changes. For that reason, if we attached the tabletop to the legs and

Shaping the Legs and Drilling for Dowels



Photo 1: Measure in $1\frac{1}{8}$ " at the bottom of the leg and $4\frac{3}{4}$ " up the edge of the leg to form a long narrow triangle. Use your hand saw and the techniques from our last Woodworking Basics article to cut the section away.



Photo 2: Mark out the same angle on an adjoining face of the leg. Remove that triangular section. Now the leg has a $1\frac{1}{8}$ "-square "foot" and two adjoining angled faces, called tapers.



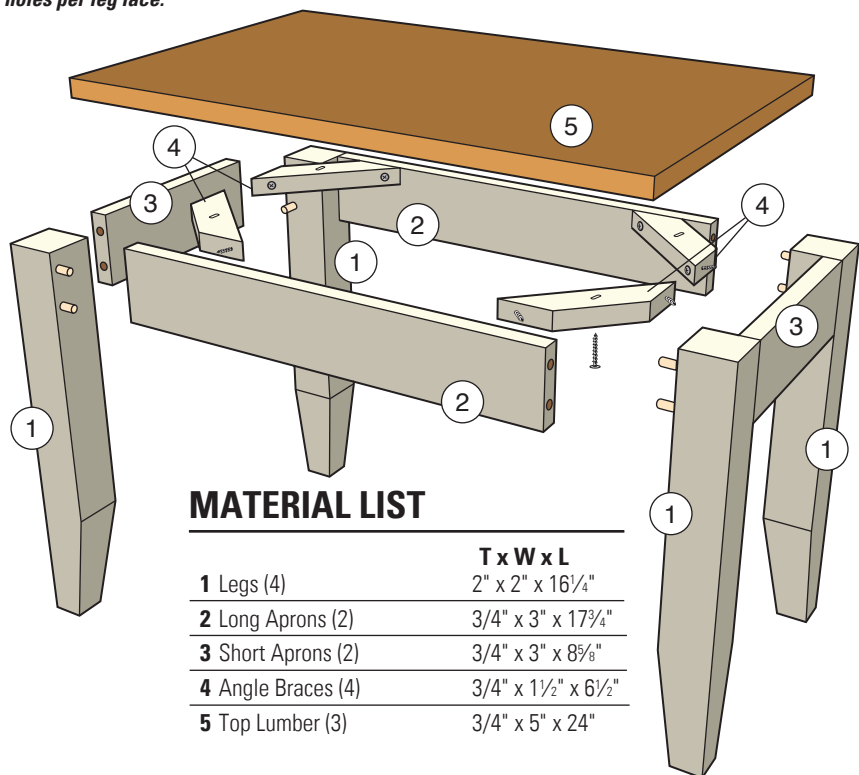
Photo 3: Mark a line $1\frac{1}{2}$ " down from the top of a leg. Use that line to locate a doweling jig set up for $3/8$ " dowels. Use the Drawing below to position the dowels on the proper faces. Drill two dowel holes per leg face.



Photo 4: Center the doweling jig on the ends of the aprons and bore matching holes to the ones you just drilled into the legs.

aprons with glue blocks as we did with the step stool project, that expansion could break the glue joints between the legs and aprons, or its contraction could cause a crack to form in the tabletop. We solve this problem by attaching the tabletop with screws driven through elongated holes in the angle braces. These slotted holes, oriented parallel to the tabletop's width, will allow the mahogany to "move" through the seasons as needed.

There is a second woodworking problem you may have to address regarding the tabletop. It's made from three pieces of solid lumber that we sourced from *rockler.com*. They are pre-dimensioned at $3/4$ " x 5 " x 24 ". When you put



MATERIAL LIST

	T x W x L
1 Legs (4)	2 " x 2 " x $16\frac{1}{4}$ "
2 Long Aprons (2)	$3/4$ " x 3 " x $17\frac{3}{4}$ "
3 Short Aprons (2)	$3/4$ " x 3 " x $8\frac{5}{8}$ "
4 Angle Braces (4)	$3/4$ " x $1\frac{1}{2}$ " x $6\frac{1}{2}$ "
5 Top Lumber (3)	$3/4$ " x 5 " x 24 "

Laminating a 3/4"-thick Tabletop



Photo 5: Arrange the three tabletop pieces in a way that uses the figure of the wood most attractively. (This is entirely subjective.) Mark them in some way to keep the orientation of the boards clear.



Photo 6: Spread a thin coat of glue on each adjoining edge. Use a minimum of three clamps to squeeze those edges tightly together. Make every effort to keep the three boards in line with each other to make a flat panel.

Squaring up the Top and Sanding it Flat



Photo 7: Use a square of some type to draw a line across the tabletop near each end. Trim off these waste areas with a handsaw. Smooth the cut ends with sandpaper and a sanding block, removing any saw marks.



Photo 8: Starting with 80-grit paper, sand diagonally across the panel. Then sand diagonally the opposite way with 100-grit to remove all the 80-grit scratches. Finally, switch to 150- and 180-grits, and sand lengthwise.

them side by side, their edges may align perfectly well for a glue-up. If so, you are golden. (We tried many of these

boards to see how straight they were, and they aligned well.) But if your boards show a gap, you need to straighten

their edges somehow. We tested this as well and found that trimming just a tiny bit off the edges of the boards using a table saw fixed the problem. You can also solve it with a sanding block and 80-grit sandpaper to remove the high spots on the edge of a board. The video of making this project will demonstrate this edge-flattening technique.

A third detail to solve regarding the solid wood top is flattening it. When you glue the three boards together, there will likely be tiny misalignments between the edges. Solve this by sanding the panel flat. Start with 80-

Dowel Joinery: An Apron and Leg Joint Solution



Dowels solve the problem of joining end grain to edge grain (aprons to legs, for example) by forming strong joints. (It's similar to how the Beadlock system worked in our April issue's step stool project.) Doweling jigs, although not absolutely required, absolutely make the job of aligning dowel holes across a joint easy. The Rockler doweling jig shown at left comes in three versions for 1/4", 3/8" and 1/2" dowel diameter sizes. We used 3/8"-diameter dowels on this project. Precut, spiraled dowels are also available at Rockler.

Dry-fit and Glue-up

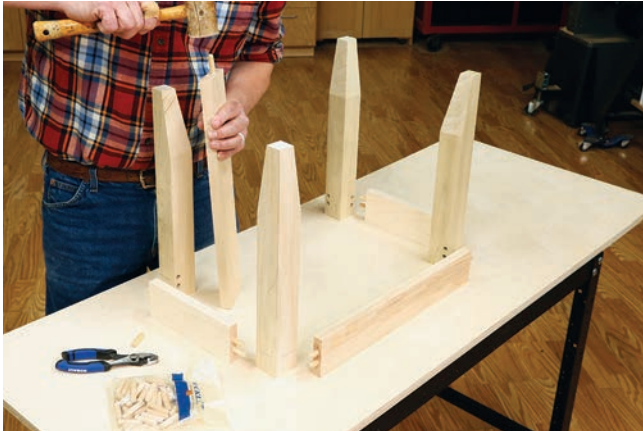


Photo 9: Test-fit the leg and apron subassembly pieces. Clamp them tightly to ensure all the dowel joints close up. Then take the pieces apart. You may need a pliers to get some of the dowels out.



Photo 10: Apply glue to the dowels and the ends of the aprons. Tap the pieces together with a mallet, if necessary. Clamp the leg and apron subassembly together and allow the glue to cure.

Making, Drilling and Attaching the Angle Braces

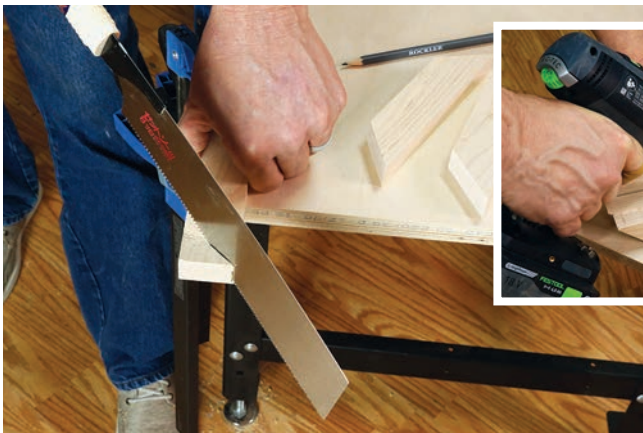


Photo 11: From the remaining apron stock, rip and crosscut $1\frac{1}{2}$ " x $6\frac{1}{2}$ " pieces to make the angle braces. Use a speed or combination square to mark 45-degree angles on each end, and cut these mitered corners.



Photo 12: Drill holes into the angle braces as shown in the inset photo. Clamp an angle brace into place and then drive $1\frac{1}{4}$ "-long panhead screws into the aprons. Attach all four angle braces.



Photo 13: Drill three $\frac{3}{16}$ "-diameter holes in a line in each angle brace, parallel to the short aprons. Then angle the drill to connect these holes.



Photo 14: Attach the tabletop to the leg and apron subassembly using the same screws as in Photo 12. Snug up the screws but do not overtighten.

grit paper and sand diagonally across the panel using a sanding block. Sand until the panel is flat. Then shift to 100-grit and sand diagonally in the opposite direction to remove

the 80-grit sanding marks. Now change to 150- and then 180-grit sandpaper and sand longways, with the grain. (Power sanders would speed this up!) Of course you need

to sand both faces. Finishing the end table is up to you.

Working with this solid top has advanced your woodworking skills considerably!



Here is a list of the tools and lumber used to build the Sturdy End Table project.

End Table Supplies

Clamps

- (2) 24" Sure-Foot Aluminum Bar Clamp Item #41812: \$34.99**
- (2) 36" Sure-Foot Aluminum Bar Clamp Item #41815: \$39.99**

Dowel Jig and Dowels

- Rockler 3/8" Doweling Jig Kit with Bit and Stop Collar Item #54854: \$24.99**
- Spiral Dowel Pins - 3/8" x 2" (50 per pack) Item #21154: \$6.99**

Lumber

- (3) Mahogany by the Piece, 3/4" x 5" x 24": 35847 \$19.99**
- (4) Maple by the Piece, 3/4" x 3" x 24" Item #38742: \$10.99**
- (2) Poplar Turning Blank, 2" x 2" x 36" Item #57045: \$14.99**

Screws

- #8 x 1 1/4" Washer Head Screws, 100 pack. #66656: \$13.99**

*To purchase these and other products online,
visit www.woodworkersjournal.com/hardware
Or, call 800-610-0883 (code WJ1577).*