

Do It Yourself

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Mahogany End Table

From "[Woodworking](#)"

episode DIW-104 -- [More Projects](#) »

DIY Woodworking host Bruce Johnson demonstrates some of the basic principles of woodworking while building a traditional mahogany end table.

Note: [Project Plans](#) available using 

Materials:

Select mahogany lumber
1/4" oak plywood
Circular saw or table saw
Saber saw
Measuring tape
Pencil
Jointer
Router
Biscuit joiner and wooden biscuits
Cordless drill
Drill press and plug-cutter bit
Bar clamps or pipe clamps
Woodworker's glue
Clean rags
Wood screws
Optional: countersink
Drawer pulls
120-grit sandpaper
Optional: red-oak stain
Clear satin polyurethane varnish
Protective eyeglasses and ear protection

Making the Legs, Top and Side Pieces

Building an end table from raw materials is less complicated than you might imagine, especially when the project is broken down into basic



Figure A



Figure B



Figure C

steps.

The first step is to make table legs consistent with arts and crafts style furniture. The legs will be 1 3/8" square, and because it may be impossible to find kiln-dried mahogany that thick, they'll be formed by gluing two 3/4" boards together. This creates 1 1/2" pieces that can be trimmed to the correct thickness with a jointer.

Whenever working with power tools, wear protective eyeglasses and ear protection, and follow all the manufacturer's safety recommendations.

Begin by cutting a piece of 3/4" mahogany lumber to a length of 29". Next, cut the board lengthwise into 1-1/2"-wide strips. For the four legs you'll need a total of eight strips. Glue the first two strips, applying woodworker's glue along the surface of one (**figure A**). Rub the two pieces together to spread the glue evenly, then clamp them (**figure B**), making sure the boards are flush. Wipe off any excess glue with a damp rag, and let the legs dry overnight. It's not necessary to pad the clamps because the legs will be trimmed with the jointer, thus removing any clamp or saw marks. Repeat the process to create the remaining legs.

Unless you're able to find 21-1/2"-wide mahogany stock, you'll make the top by gluing two or three smaller boards. Cut the boards to a length of 21" each. Use a jointer to square the rough edges in preparation for gluing (**figure C**).

Lay out the boards, and inspect them for their grain pattern and any surface flaws. Use the more attractive sides to form the surface that will show. Once you've found the best combination, position the boards, and line up the ends. Make a couple of pencil marks across the joints. When gluing narrow surfaces such as these edges, you'll need to give the joint some extra strength. You can accomplish that by using a biscuit joiner (**figure D**). It cuts slots in a board's edges, into which football-shaped wooden wafers are inserted and lined up with identical slots in the adjoining board, then glued in place.

Clamp the first board securely to your workbench, then align the notch on the biscuit joiner with the first pencil mark. Turn on the biscuit joiner, and let it come to full speed, then steadily plunge the head into the edge of the board (**figure E**). Remove the joiner, and clean out any wood shavings. Repeat at each pencil mark on all of the boards.



Figure D



Figure E



Figure F



Figure G



Figure H

Once all of the slots are cut and cleaned out, squirt woodworker's glue into each one and along the edge of both boards **(figure F)**. Place a biscuit in each slot on one board **(figure G)**, then press the two boards together so the pencil marks line up.

Place the boards in clamps, tighten them snugly, and use a damp cloth to wipe away any excess glue **(figure H)**. If you clamp the wide board to a workbench while the glue dries, make sure the board lies flat against the surface. If one end is higher, the finished board won't sit flat on its base.

The sides and back of the table are 8" wide and can be made without any gluing. Cut the boards to length (17" for the two side pieces, 16" for the back) with a table saw or other saw.

Drawer Dividers and Assembling the Framework

The next undertaking is creating the dividers between the drawers **(figure I)**. They provide additional stability between the two front legs and support for the drawers.

The rails on which the drawers will slide attach to the back of the dividers and extend the entire inside depth of the table. They may be made of leftover mahogany or scrap wood. Cut the rails slightly longer than needed, as they'll be cut to an exact fit after the framework is assembled. The width of the rails isn't critical, but a wider piece (e.g., 3") provides a larger gluing surface and makes for a stronger joint. Lay out the dividers and rails **(figure J)**, and mark them for biscuit joints. Use a biscuit joiner to cut slots at the locations of the joints. Insert biscuits as described above, and glue and clamp the structure together **(figure K)**.

Now you can assemble the framework of the table. The sides will attach to the legs with biscuits, so begin by laying out two legs with a side piece between them, flush along the top. Use a pencil to mark locations for the biscuit joints that will attach the legs to the side pieces.

Because the legs are thicker than the edges of the side pieces **(figure L)**, the biscuit joiner will need to be readjusted to center the slots in the legs. To cut slots in the center of a 1 3/8" leg, set the biscuit joiner to 11/16" **(figure M)**. Once you've cut aligning slots in the legs and side pieces, glue and assemble each side, clamp the pieces securely **(figure N)**, and allow them to dry.



Figure I



Figure J



Figure K



Figure L



Figure M

Once the pieces are dry, follow the same steps to attach the back piece between the two rear legs. The front will be joined by the two drawer dividers, each of which is $\frac{3}{4}$ " thick. The lower divider will be flush with the bottom of the side pieces (21" from the floor). Because the side pieces are 8", this leaves a vertical space of $6\frac{1}{2}$ " for the two drawers--each of which will be $3\frac{1}{4}$ " high **(figure O)**.

The total inside distance from front to back is $18\frac{1}{2}$ ". To recess the drawers slightly, cut the rails to a length of $18\frac{1}{4}$ ". Apply glue to the ends of the two rails and both ends of the lower divider. Slide the rails and divider inside the framework **(figure P)**, and line up the assembly flush with the bottom of the back panel. Place a clamp across the front to secure the divider. You may also want to place clamps between the back and front of the divider to pull the rails tight against the back **(figure Q)**.

Repeat the steps to attach the middle divider. After the glue has dried, remove the clamps, and secure each rail with two finish nails in the back. Do the same for the dividers, with a finish nail at an angle through the bottom **(figure R)**.

Attaching the Top

The top of the table will be attached flush along the back, with an even overhang on either side and a slight overhang in front.

Before attaching the top, you may want to install a splash board--a long wooden strip that prevents items from falling off the back of the table. The splash board is $18\frac{3}{4}$ " long, the same as the width of the framework, and $1\frac{1}{2}$ " high. Cut out the splash board with a table saw, and round the corners with a saber saw. Attach the splash board with three screws from underneath the top. You may want to countersink the screws so that their heads are recessed.

With the splash board in place, set the top on the framework and center it. You'll attach the top to the framework with screws hidden beneath wooden plugs.

You can make plugs by cutting cross-sections from a dowel of the appropriate size, but to ensure that they match the wood of the top, use a $\frac{3}{8}$ " plug-cutter attachment for your drill press to cut plugs from scraps of mahogany. Cut the plugs from a piece of wood about $\frac{1}{2}$ " thick, and pop them loose with a screwdriver.



Figure N



Figure O



Figure P



Figure Q



Figure R

To attach the top, select the spots where you want to drive screws, then drill 3/8" holes about 1/2" deep into the top in those locations. In the center of the holes, drill 1/8" pilot holes through the top and into the side panel. Insert 1" or 1 1/2" screws to attach the top.

Swab a small amount of glue into each hole. Insert the mahogany plugs, aligning the grain of the plugs with that of the tabletop. Tap each plug into place (**figure S**), leaving just a bit extending above the surface that can be sanded flush.

Making the Drawers

The drawers are the final components of your end table. The two drawer fronts are mahogany, but the sides and backs can be made from a less expensive wood such as poplar.

Each drawer opening should measure 3 1/4" by 16". Using a table saw, cut the drawer fronts from 3/4" mahogany. Cut the sides from scrap mahogany or other lumber such as 1/2" poplar. The sides are the same height as the front: 3 1/4".

Using a table saw, cut a slot about 1/2" above the bottom of the drawer sides and front to hold the 1/4" plywood bottom (**figure T**).

Using a router or a table saw, cut a notch 1/2" deep and 1/2" wide at each end of the drawer front. This will allow you to attach the drawer sides to the front with a joint that will conceal the side pieces. Attach the sides with glue and finish nails. The back piece, supported by the plywood bottom, can now be attached to the sides with glue and nails.

The final step of the assembly is to mount drawer pulls at the center of each drawer front.

Staining and Finishing

Before you stain the end table, sand it lightly with 120-grit sandpaper. A red-oak stain will accent the grain of the mahogany. Rub the stain into the wood with a clean rag, a staining pad or a brush (**figure U**), and wipe off any excess.

Mahogany has large pores, so a clear satin polyurethane varnish is well suited to it. Apply two coats with a natural or synthetic brush.



Figure S



Figure T



Figure U

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