

Mission End Table

We hope that you enjoy this free woodworking project provided to you as a special thanks for being a member of Lowe's Woodworkers.

Few trends from the 1920s remain strong today—except for the clean, simple furniture designs popularized by Gustav Stickley. The mission, or craftsman, style that Stickley helped make famous is still a fixture in showrooms and homes, bringing its rectilinear shapes and subtle curves to contemporary use. Mission means construction that's as sturdy as it is simple. Consider this end table; the piece captures the key design elements of mission furniture and becomes a family favorite that will last for years to come.

Instructions:

General: Cut all parts as you assemble the project, using the Cut List as a guide and adjusting as needed for fit. **Predrill** for and **countersink** all screws. Set all nails, fill holes with wood filler, and sand smooth.

Step 1: Build the leg assemblies. Note: Each leg is made up of four beveled strips for a continuous grain pattern.

a. For each leg, cut four strips $2\frac{1}{4}$ inches wide and 22 inches long (you'll trim the legs to their finished length of $21\frac{1}{4}$ inches once they're assembled and dry).

b. Bevel **rip** the **edges** of each leg **face**; set your saw blade to slightly more than 45 degrees. This step will help ensure tight joints when the legs are assembled later.

c. Lay out the strips with the edges touching and beveled cuts facing up (see Figure 1, Step 1). Place a strip of packing tape, sticky side up, under the full length of each joint. Press the strips down into the tape for a strong bond; make sure that the edges of the strips continue to butt up against one another.

d. Apply glue to all beveled edges; then roll the strips together (see Figure 1, Step 2). Secure the rolled-up assembly with a piece of tape on the last joint (see Figure 1, Step 3). Wrap the assembly with elastic bands (bungee cords or an inner tube cut into strips can help hold the assembly until the glue dries). Nail in several places along the joints to secure the pieces, and set aside the assembly to dry (see Figure 1, Step 4). Repeat for the remaining legs.

e. After the glue dries, cut each leg assembly to length.



PHOTOGRAPH: MICHAEL HANSON / STYLING: LEIGH ANNE MONTGOMERY

Step 2: Make the top.

a. Cut the top slats $\frac{1}{2}$ inch longer than the length shown in the Cut List to allow room for trimming later.

b. Label the face sides of the top slats. On the back sides of the top slats, drill offset **pocket holes** approximately 6 inches on center (see Figure 2). Do not drill pocket holes on the two outside edges.

c. Apply glue to the adjacent edges of two top slats. Placing wax paper under the joint will keep the assembled top from sticking to the work surface as the glue dries. Lay the boards on a flat surface. Clamp a caul, or scrap-wood pad, across them to keep them flat, if necessary. Screw the joint together.

d. Repeat this process with the remaining top slats.

e. After the glue dries, cut the slat assembly to the finished length.

f. Fit a router with a $\frac{3}{8}$ -inch rabbeting bit; cut a **rabbet** out of the top and bottom edges of each **end** of the slat assembly to create a **tongue** that is $\frac{1}{4}$ inch high and $\frac{3}{8}$ inch wide (see Figure 3).

g. Cut a $\frac{1}{4}$ -inch-high and $\frac{3}{8}$ -inch-wide **groove** in each breadboard edge using a table saw fitted with a dado blade, or a router fitted with a slot-cutting bit.

h. Attach a breadboard to each end of the slat assembly by applying glue to the tongue of the center top slat only (this will allow the top to expand and contract during humidity changes).

i. Sand the top.

j. Use a router fitted with a ¼-inch roundover bit to shape the upper edge of the top; use a ½-inch roundover bit to shape the bottom edge (see Figures 2 and 3).

Step 3: Build the end assemblies. Note: Each assembly consists of two legs, a skirt, a stretcher, and three end slats (see Figure 4).

a. To lay out the arch for the first stretcher, mark the start points of the arch ¾ inch in from each end. Mark the center of the curve 1½ inches up from the bottom edge of the stretcher. Bend a flexible metal ruler or a thin strip of wood to meet these points, and then mark the curve with a pencil.

b. Cut the arch, and use the first stretcher as a template for the remaining three stretchers; cut to shape. Set aside two stretchers for connecting the end assemblies in Step 4.

c. Cut a ¼-inch-deep x ½-inch-wide rabbet along the entire length of the inside top edges of all four stretchers.

d. Cut a ½-inch-deep x ½-inch-wide rabbet along the entire length of the bottom inside edges of two skirts.

e. Drill two pocket holes on the inside face in each end of all skirts and stretchers.

f. Place a skirt piece with a rabbet between two legs so that the tops of all three pieces are flush; insert a ¼-inch spacer under the skirt to offset the face of the skirt from the face of the legs.

g. Attach the skirt to the legs using glue and pocket hole screws.

h. Attach the stretcher to the legs in the same manner, with the bottom of the stretcher 2 inches up from the bottom of the legs.

i. Insert the slats into the rabbets in the skirt and stretcher so that the gaps between the

slats and the legs are even; glue in place (see Figure 3).

j. Measure and cut ¼-inch-deep x ¼-inch-wide fillers to fit in the rabbets on both sides of the bottom of each slat, and glue the fillers in place (see Figure 4).

k. Repeat for the other end assembly.

Step 4: Connect the end assemblies. Note: The end assemblies are spanned by stretchers, skirts, a top, and a bottom shelf (see Figure 4).

a. Attach the remaining skirts and the stretchers to each end assembly using the same process described for the end assemblies in Step 3f.

b. Measuring diagonally, check the assembly for square; if it is out of square, correct the angles using a bar clamp. Leave the assembly in place until the glue dries.

Step 5: Install the bottom shelf and top.

a. Carefully measure and cut the ¼-inch-thick plywood bottom shelf to size; you will need to notch the four corners to fit around the legs.

b. Attach the bottom shelf to the rabbets in the stretchers using glue and nails.

c. To attach the top, first install corner blocks to the skirts using pocket hole joinery (see Figure 4). Center and drill an oversize hole through each corner block.

d. Position the top on the table frame so that there is an equal overhang from side to side and from front to back. Then use a washer and a pan-head screw to secure the top to the corner block, driving the screw up through the oversize hole into the top.

Step 6: Apply a finish to the table.

a. Sand the entire table.

b. Apply a stain as desired.

c. Brush on two coats of polyurethane, sanding between coats. Allow to dry.

d. Apply a coat of paste wax, and buff the table to achieve the desired sheen.

Project #SP06FP1 ■

CUT LIST

Part Name	Material	Size (in inches)	Quantity
legs	1 x 6	¾ x 2¼ x 21¾	16
top slats	1 x 4	¾ x 3¾ x 18	7
breadboards	1 x 4	¾ x 2¼ x 22	2
skirts	1 x 6	¾ x 1¾ x 14½	4
stretchers	1 x 4	¾ x 3½ x 14½	4
end slats	¼ x 4	¼ x 3 x 15¼	6
fillers	¼ x 4	¼ x ¼ x 1¾	8
bottom shelf	¼-inch plywood	¼ x 17½ x 18	1
corner blocks	1 x 4	¾ x 2¾ x 2¾	4

LOWE'S LIST

Lumber*

- 1 (4-foot-long) ¼ x 4, red oak
- 1 (4-foot-long) 1 x 3, red oak
- 2 (4-foot-long) 1 x 4s, red oak
- 3 (6-foot-long) 1 x 4s, red oak
- 1 (6-foot-long) 1 x 6, red oak
- 1 (8-foot-long) 1 x 6, red oak
- 1 (48- x 96-inch) sheet of ¼-inch-thick oak plywood

*Availability varies by market.

Hardware & Supplies

- 1 box 4d finishing nails
- 1 box (#8 x 1-inch) pan-head screws
- 1 box (#17 x 1-inch) wire brads
- 1 box (#18 x ¾-inch) wire brads
- 1 box (1¼-inch) PrimeGuard Plus screws
- 1 box (1¼-inch) Kreg pocket hole screws (coarse thread)
- wood filler
- wood glue
- polyurethane
- stain (Olympic, Golden Oak)
- paste wax

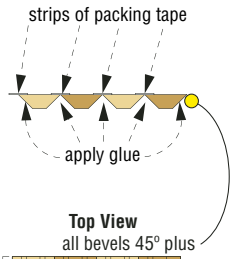
TOOL LIST

- table saw
- miter saw (or handsaw with miter box)
- router with ¾-inch rabbeting bit, ¼-inch roundover bit, and ½-inch roundover bit
- dado blade set
- framing square
- power sander and various grits of sandpaper
- drill/driver
- Kreg ProPack Pocket Hole System
- pneumatic nail gun (or hammer)
- bar clamp
- tape measure
- flexible metal ruler
- pencil

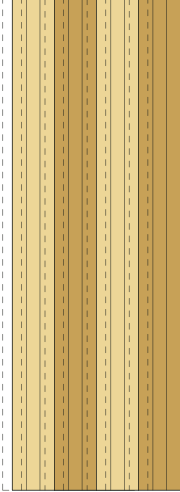
Figure 1

Step 1

Lay the four pieces of legs edge to edge on strips of packing tape. Apply glue to exposed edges.

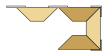


Top View
all bevels 45° plus



Step 2

Roll up leg pieces.



Top View

Step 3



Top View

Complete roll up and secure last joint with tape.

Step 4

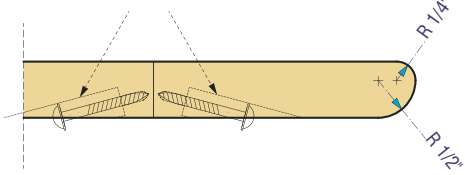


Top View

Wrap assembled leg with elastic bands in several places along the assembly. Nail two to three places along joint, and set aside to dry.

Figure 2

Pocket holes staggered at 6 inches on center.



Finished Dimensions:

Height: 22 inches

Depth: 22²/₁₆ inches

Width: 21¹/₄ inches

Figure 3

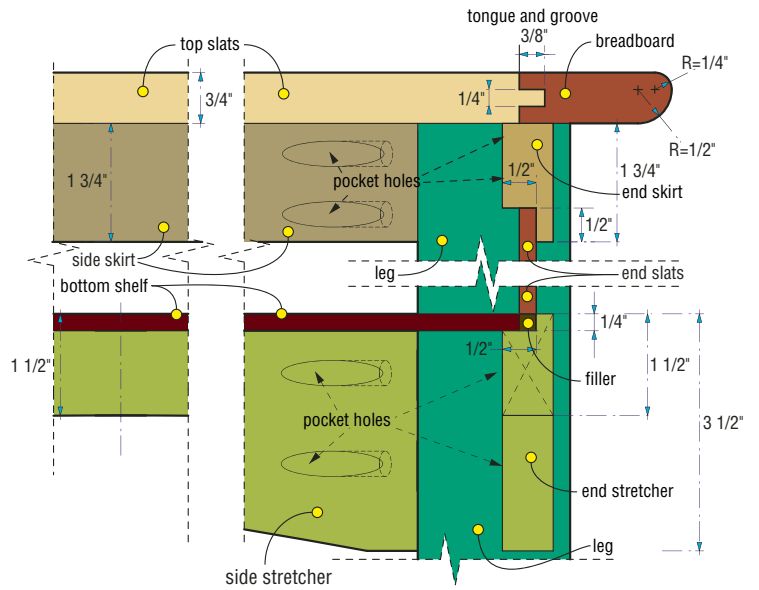


Figure 4

