Popular Mechanics

TRESTLE COFFEE TABLE

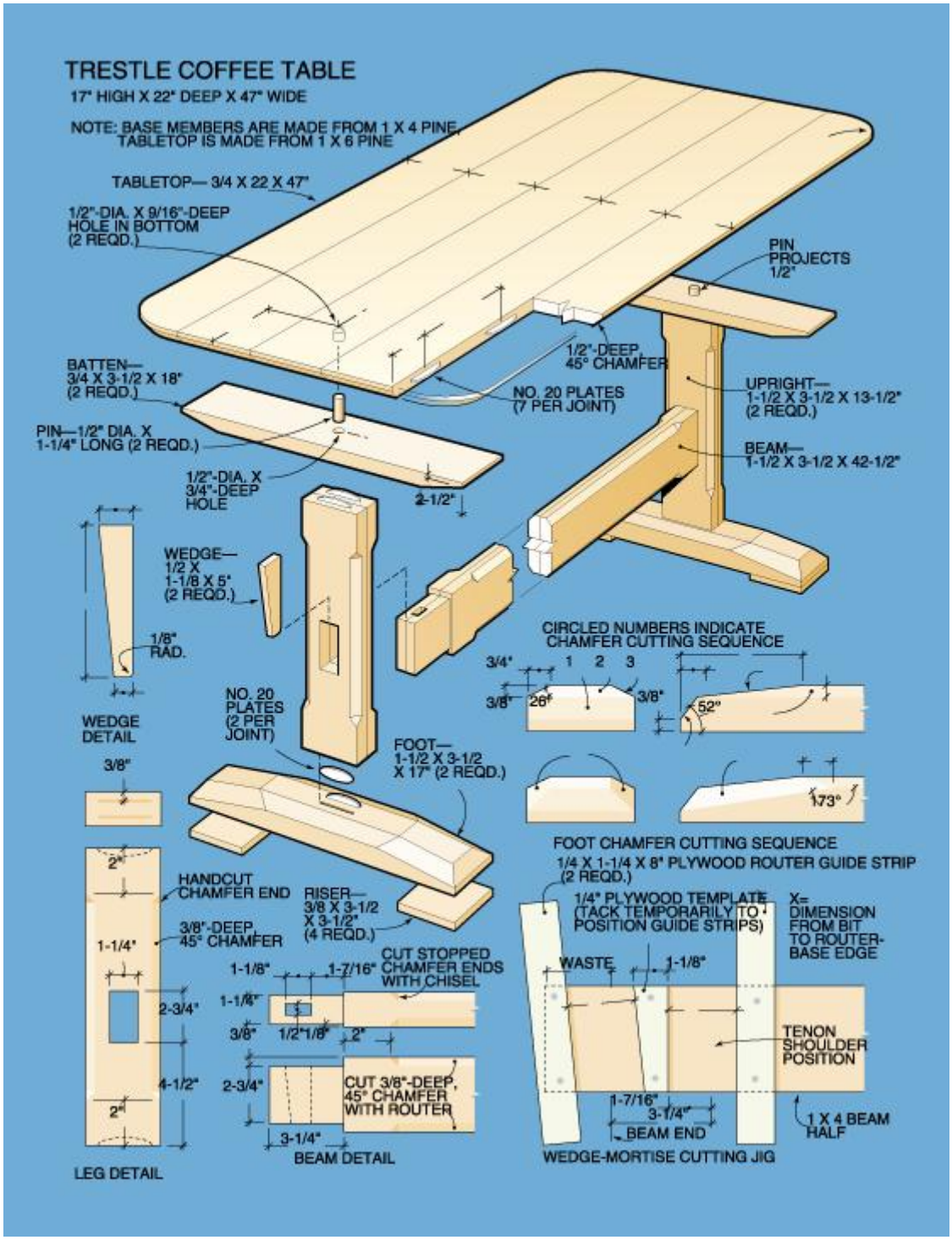
Interpret a centuries-old design with modern tools and materials.

TEXT & PHOTOS BY ROSARIO CAPOTOSTO

Believe it or not, knockdown furniture isn't a modern idea. Originally, all tables were simply loose boards set atop some sort of trestle or horse. By the Middle Ages, woodworkers realized that tabletop and trestle base could be joined more elegantly and they crafted designs with simple tools and rudimentary hardware. In colonial North America, the handcrafted trestle table had evolved into a practical feature of refined households.

Our coffee-table reinterpretation of such timeless furniture is actually designed to find a home in the living rooms of the 1990's. It's constructed of ordinary 1" Common pine and put together with the aid of the basic power and hand tools now at the disposal of every home artisan.

Because this table is stained and clear-finished, it pays to choose your wood carefully. Select the straightest pieces you can find and make sure to buy extra so you can work around knots and other types of defects.


TRESTLE COFFEE TABLE
17" HIGH X 22" DEEP X 47" WIDE
NOTE: BASE MEMBERS ARE MADE FROM 1 X 4 PINE. TABLETOP IS MADE FROM 1 X 6 PINE
TABLETOP— 3/4 X 22 X 47"
1/2"-DIA. X 9/16"-DEEP HOLE IN BOTTOM (2 REQD.)
PIN PROJECTS 1/2"
1/2"-DEEP 45° CHAMFER
BATTEN— 3/4 X 3-1/2 X 18" (2 REQD.)
NO. 20 PLATES (7 PER JOINT)
UPRIGHT— 1-1/2 X 3-1/2 X 13-1/2" (2 REQD.)
PIN—1/2" DIA. X 1-1/4" LONG (2 REQD.)
BEAM— 1-1/2 X 3-1/2 X 42-1/2"
1/2"-DIA. X 3/4"-DEEP HOLE
2-1/2"
WEDGE— 1/2 X 1-1/8 X 5" (2 REQD.)
1/8" RAD.
WEDGE DETAIL
NO. 20 PLATES (2 PER JOINT)
FOOT— 1-1/2 X 3-1/2 X 17" (2 REQD.)
CIRCLED NUMBERS INDICATE CHAMFER CUTTING SEQUENCE
3/4"
1 2 3
3/8"
26°
3/8"
52°
173°
FOOT CHAMFER CUTTING SEQUENCE
3/8"
2"
HANDCUT CHAMFER END
RISER— 3/8 X 3-1/2 X 3-1/2" (4 REQD.)
1-1/4"
3/8"-DEEP 45° CHAMFER
2-3/4"
4-1/2"
2"
LEG DETAIL
1-1/8"
1-7/16"
CUT STOPPED CHAMFER ENDS WITH CHISEL
1-1/8"
3/8"
1/2"
1/8"
2"
2-3/4"
CUT 3/8"-DEEP, 45° CHAMFER WITH ROUTER
3-1/4"
BEAM DETAIL
1/4 X 1-1/4 X 8" PLYWOOD ROUTER GUIDE STRIP (2 REQD.)
1/4" PLYWOOD TEMPLATE (TACK TEMPORARILY TO POSITION GUIDE STRIPS)
X= DIMENSION FROM BIT TO ROUTER-BASE EDGE
WASTE
1-1/8"
TENON SHOULDER POSITION
1-7/16"
3-1/4"
BEAM END
1 X 4 BEAM HALF
WEDGE-MORTISE CUTTING JIG

Making the Top

Use your circular saw to crosscut five 1x6 boards slightly longer than finished length. Then rip the board's oversize in width using a straight strip as a guide and joint the edges with a hand plane.

Arrange the boards so that the direction of the annual rings alternates from one board to the next and mark the plate-joint centres. To cut the plate slots, place both the work and the joiner on a flat surface. Keep the upper face of each board down to ensure that the upper surfaces of the pieces will be aligned (fig. 1). Mark and cut the plate slots in the edges of the tabletop stock.

1. Place plate joiner and workpiece on a flat surface. Mark and cut plate slots in the edge of the tabletop stock.

2. Apply glue to slots and insert plates. Then apply glue along boards' mating edges and assemble.

3. Remove dried excess glue and use a cabinet scraper to level and smooth any misaligned joints.

Apply glue to the slots, insert the plates, and assemble the tabletop (fig. 2). Then clamp the top with pipe clamps. To keep the top from buckling, clamp 2x4s across the boards. Place waxed paper under the 2x4s to prevent them from becoming glued to the top.

After the glue is dry, use a paint scraper to remove excess glue and level the joints with a cabinet scraper (fig. 3). Smooth the top with a belt sander, followed by a random-orbit or pad sander. Then cut to exact length and width (fig. 4).

4. Cut tabletop to exact length and width with circular saw. Guide cut with straight board clamped to the top.

5. Cut 3"-radius rounded corners with sabre saw and circle-cutting jig--cut from bottom side of tabletop.

6. Use a router and piloted chamfer bit to cut bevel around bottom edge of tabletop. Sand top smooth.

To cut the radius at each corner, attach a circle-cutting guide to your sabre saw and set the pivot point 3 inches from each edge on the underside of the top. Then, make the cuts (fig. 5). Finish by routing the chamfer around the lower edge of the tabletop (fig. 6) and sanding the top smooth.

Making the Beam

Build the 1 1/2"-thick trestle beam by first cutting two 48" lengths of 1x4 stock. Temporarily nail the two boards together to establish alignment holes. Use a rule and square to lay out the mortise locations (fig. 7). Separate the boards and carry the lines across the mating faces of the work pieces.

7. With beam halves nailed together temporarily, use square to lay out wedge mortises on beam edges.

8. With plywood mortise template in place, use cardboard spacer to position router guide strips on one beam half.

Cut a tapered mortise template out of 1/4" plywood to exactly match the size and shape of the finished tapered mortise. Then tack this into position on one of the beam halves. Install a 3/4"-diameter straight bit in your router and measure the distance between the bit edge and the router base edge. Cut a cardboard spacer strip to match this dimension. Use the cardboard spacer to align the router guide strips on each side with the plywood mortise template (fig. 8). Then, adjust the bit depth to 1/4", remove the template, and make the cut. Follow by routing the remaining ends of the two beam halves in the same way. Before gluing the boards together, apply a coat of sealer to the slots. Also apply a coat of paste wax to the shoulders of the slots to help repel glue. After the glue is dry, cut off the waste.

9. With beam halves glued, clamp strips to sides and tack-guide strips to edge. Then rout edges of beam tenon.

10. Repeat the process on faces of beams to finish tenons. Make tenons slightly longer than finished length.

To form the beam tenons, first lay out the shoulder cuts on the ends of the work piece. Clamp two 3/4" x 1 1/2" x 14" boards to each face of the beam at one end to provide a wide, stable base for the router. Space guide strips with the cardboard spacer, adding approximately 1/2" extra to the length of the tenon. Tack the strips to the beam and make the cut (fig. 9). After finishing the top and bottom shoulder cuts, repeat the process to make the broad cheek tenon cuts (fig. 10).

Glue together pieces of 1x4 stock to make the leg and feet blanks. Prepare the pieces oversize in length and drive a few nails in the waste areas at the ends to keep the assemblies from shifting when they're glued and clamped. Plane the edges after the glue has had time to dry.

Legs & Assembly

Lay out the leg mortises, and bore 3/4" holes at the ends of each mortise. Remove most of the waste with a sabre saw. Cut a thin cross-section slice from the end of the beam tenon. Align this on the leg mortise outline and nail plywood strips around it to make a template frame. Install a template bit in your router -- it has a pilot bearing above the cutting edges. Make the first cut with the bearing aligned with the plywood frame. Then readjust the bit so it's guided by the first cut and finish the mortise. Square the edges with a sharp chisel (fig. 11).

11. Use a router, template, and straight bit to trim leg mortise to exact size. Then chisel corners square.

12. After marking slot centers on feet, shim plate joiner to make cuts. Then cut matching plate slots in leg ends.

Cut the feet and battens to exact length and plane to width. Mark the feet blanks and battens to indicate the leg face positions. Then mark centrelines across the pieces. With a foot resting on edge on a flat work surface, shim the plate joiner to cut a slot centred 7/16" above the leg face position. After making the first slot in one of the pieces, raise the joiner with an additional 5/8"-thick shim and cut the second slot.

Cut the corresponding slots in the leg ends (fig. 12). Make the first set of slots with the joiner and stock laying on your bench. Raise the joiner with the 5/8" shim for the second set of slots.

13. Use handsaw to cut foot end bevel and sharp block plane to trim the rough-sawn surface smooth.

14. Cut long bevels along the top edges of feet with a sharp bench plane, then mark and shape compound bevels.

Mark the feet ends for the first bevel cut, as shown in the

Legs & Assembly (cont.)

15. After routing stopped bevels on beam and legs, use sharp chisel to cut flat, triangular facets at bevel ends.

Rout the stopped chamfers and trim the bevel ends flat (fig. 15). Then join the legs, battens and feet.

Make the beam wedges and assemble the table base. Use a drill guide to bore a blind 1/2" hole in each batten. Place dowel centres in the holes, align the top and press to transfer the batten hole locations. Glue a 1/2" dowel in each batten.

Finish your trestle coffee table with Minwax Wood Conditioner, followed by two coats of Minwax Colonial Maple Stain, and three coats of Minwax Clear Semi-Gloss Polycrylic Finish.