



Walnut Coffee Table

I've been hoarding some huge, air-dried walnut boards for over twenty years, waiting for the right projects to come around. This small coffee table was the perfect opportunity to finally cut one open and get my hands on the rich figure inside.

by Tom Caspar



1 All the pieces of this coffee table came from one 2-1/2-in. thick, 6-ft. long walnut board. Before running the board through a planer or cutting it into smaller pieces, I used a No. 40 scrub plane to uncover knots, checks and sapwood.



2 Resaw the board to make the top, legs and rails. Making the table from one board ensures that all its pieces will be similar in color and texture. They won't have to be stained to match.



3 Use a sturdy sled to plane boards that are wider than your jointer. Put shims under the board's high spots, so the board won't rock as it passes through the planer. This board will become part of the table's top.



4 Rout two dovetail-shaped grooves across the top's underside. Clamp the top to ensure that it's flat, then use a jig and template guide (see inset) to make grooves with parallel sides.

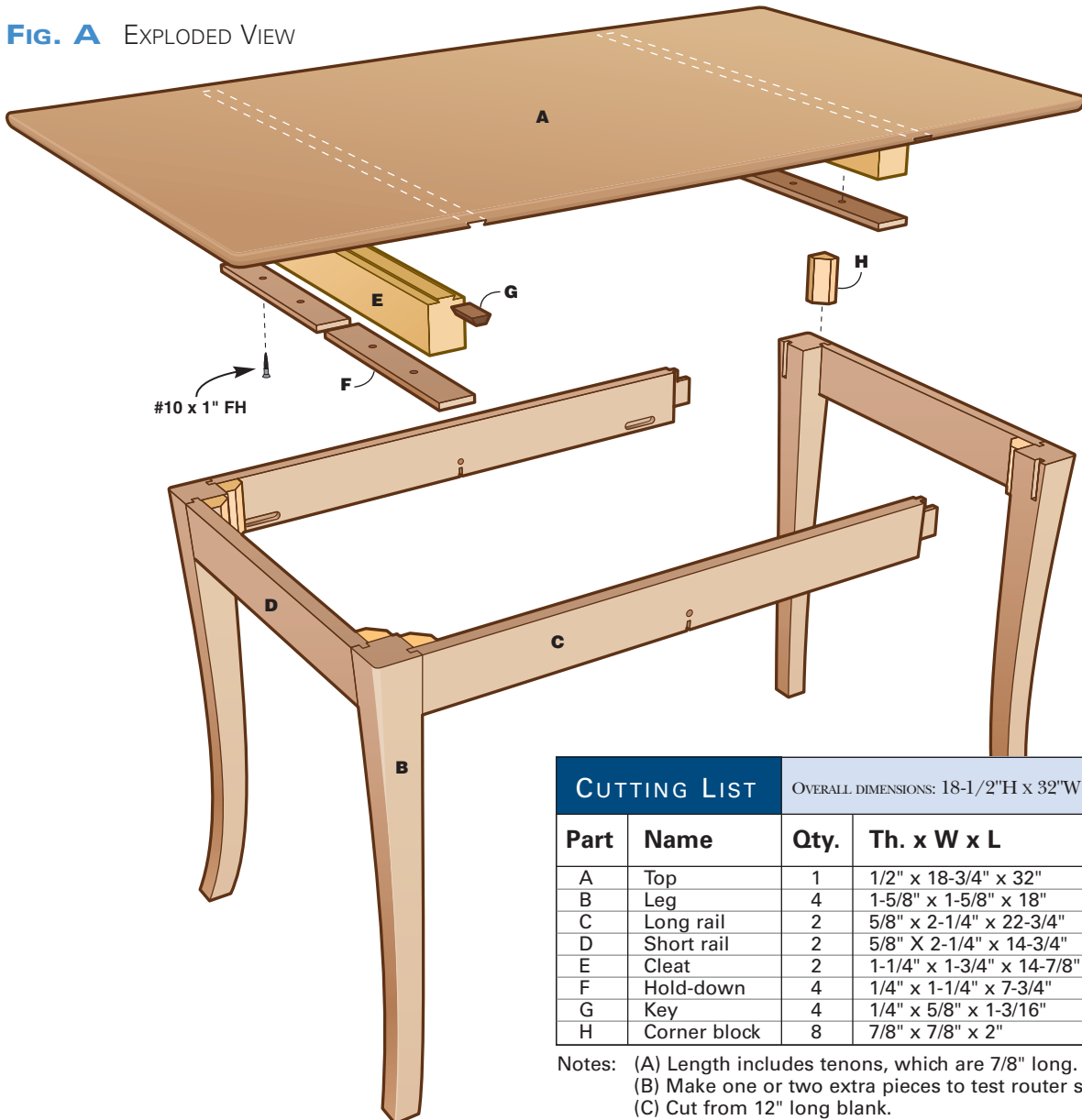


5 Make cleats to fit the grooves. This table's top is only 1/2 in. thick; the cleats keep it flat. The top would crack if the cleats were glued or screwed in place, so they slide in dovetailed grooves instead.



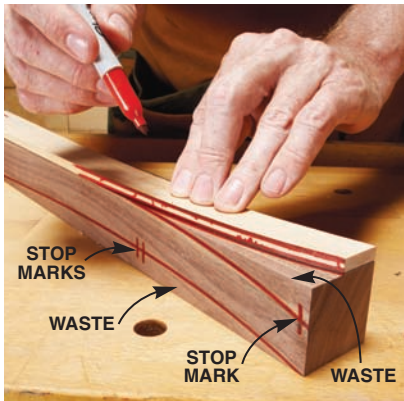
6 Slide the cleat in the groove to test its fit. Fitting can be very fussy, but it's worth spending the time to get it right. You should be able to slide the cleat all the way across the top by hand.

FIG. A EXPLODED VIEW



CUTTING LIST		OVERALL DIMENSIONS: 18-1/2"H x 32"W x 18-3/4"D		
Part	Name	Qty.	Th. x W x L	Notes
A	Top	1	1/2" x 18-3/4" x 32"	
B	Leg	4	1-5/8" x 1-5/8" x 18"	
C	Long rail	2	5/8" x 2-1/4" x 22-3/4"	(A)
D	Short rail	2	5/8" X 2-1/4" x 14-3/4"	(A)
E	Cleat	2	1-1/4" x 1-3/4" x 14-7/8"	(B)
F	Hold-down	4	1/4" x 1-1/4" x 7-3/4"	
G	Key	4	1/4" x 5/8" x 1-3/16"	(C)
H	Corner block	8	7/8" x 7/8" x 2"	

Notes: (A) Length includes tenons, which are 7/8" long.
 (B) Make one or two extra pieces to test router setup.
 (C) Cut from 12" long blank.



7 Trace a pattern on two adjacent sides of each leg blank. On one side, draw lines to indicate where to stop the saw when cutting the leg's first side. Stopping the saw creates small bridges that allow the waste pieces to remain connected to the blank.



8 Make mortises while the legs are still square. To start, rout two stopped grooves in each leg. Clamp a stop block to the router table's fence to limit the groove's length.



9 Complete the mortises with a mortising machine. The grooves made on the router table guide the chisel. The result is a precise haunched mortise with absolutely straight sides.

There's something that pleases a woodworker's soul when you make a whole project from just one board. It's really satisfying to study a big plank with all its problems, such as knots, sapwood and runout grain, and figure out how you're going to cut it into smaller pieces (Photo 1). Thick, large boards are a luxury, though. You can certainly make this table from separate boards instead, using standard 1 and 2-in. thick wood.

MAKE THE TOP

1) Resaw boards for the top (A, Fig. A, Photo 2). Cut them 3/4 in. thick, then joint and plane the boards 1/2 in. thick (Photo 3). Glue the top together and cut it to exact size.

2) Rout two dovetailed grooves across the bottom of the top (Fig. B and Photo 4). First, install a 1/2-in. wide dovetail bit and a 1/2-in. dia. template guide in your router. Next, build a jig, composed of four pieces, to guide the router. Use 1/2-in. thick material. Assemble the jig using two 5/8-in. thick spacers to fix the distance between the rails. The router's bit and template guide setup makes a groove that's exactly the same width as the distance between the jig's rails.

DOVETAILED CLEATS

3) Make cleats (E) from a stiff hardwood that resists splitting. Maple is

ideal. Make one or two extra pieces to test your router-table settings.

4) Shape the cleat's dovetailed key on the router table (Photo 5). Set the height of the router bit so that the key is a paper-thickness shallower than the grooves in the tabletop. (You don't want the cleat to drag against the bottom of these grooves when you insert it.) Adjust the router table's fence until the cleat fits right (Photo 6). Remove the cleats from the table.

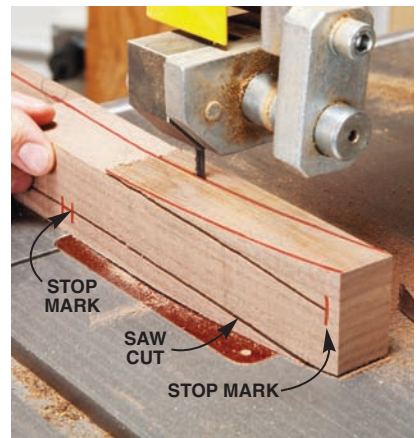
5) Finish the top by shaping a shallow curve on both of its long sides (Fig. D). Bend a 3-ft. long stick to form the curve. Cut the curve using a jigsaw or bandsaw. Round over the bottom edge of the top using a router (Fig. B). Use a smaller roundover bit on the top's upper edge. Use a file to soften the top's four corners.

SHAPE THE LEGS

6) Make a pattern for the legs (D) from 1/4-in. thick wood (Fig. G). Mill leg blanks and trace around the pattern on two adjoining sides (Photo 7).

7) Mill mortises before bandsawing the legs. Begin by routing grooves for the tenon's haunch (Fig. E, Photo 8). Deepen the mortises with a mortising machine (Photo 9).

8) Cut the legs on the bandsaw (Photo 10). Saw one side first, then turn the leg 90 degrees. Lay the pattern on the leg and mark the portion



10 Bandsaw the leg. For the first cuts, saw up to the stop marks, then back out. Rotate the leg 90 degrees, as shown here, and saw the full length of the leg's curve.



11 Plane the top 6 in. of the leg's outer faces, which are rough from the bandsaw. This creates a guide surface for planing the rails later on.



12 Spokeshave the leg's concave lower half. It's easiest to shave the outer edges first, then the middle. I use an old convex-bottomed scraper-shave to smooth the lowest section of this curve, where a flat-bottomed spokeshave can't reach.



13 Rout a roundover along the leg's outside corner. Make a rounded subbase to follow the leg's contour (see inset). The subbase will work fine on the leg's flat section, too, because the subbase's curve is so slight.



14 Assemble one side of the table without glue, then plane the rail approximately flush with the leg. You must remove a fairly large wedge-shaped section from the rail to follow the leg's taper, so start out with a heavy cut.

FIG. B TOP DETAILS

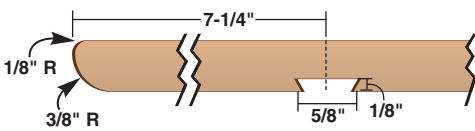


FIG. C CLEAT DETAILS

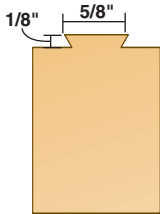


FIG. D PLAN VIEW OF TOP

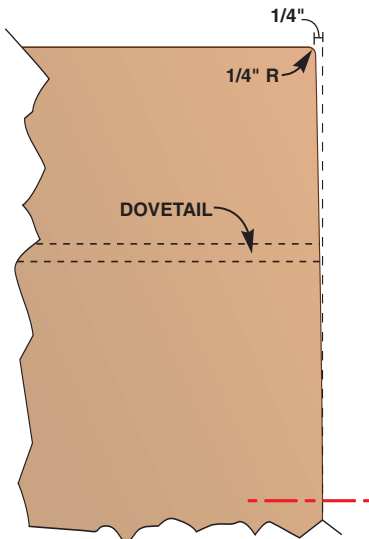


FIG. E JOINERY AND SLOT DETAILS

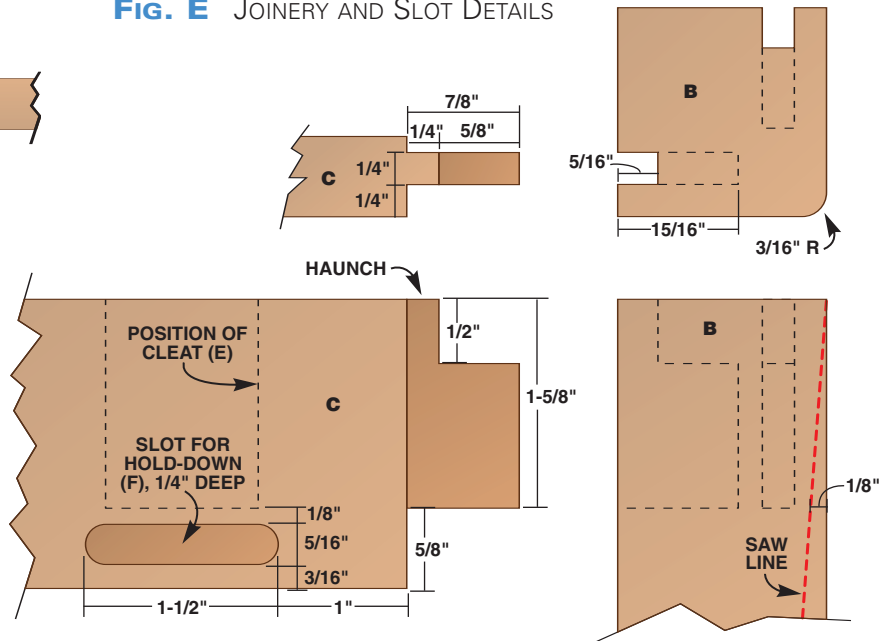
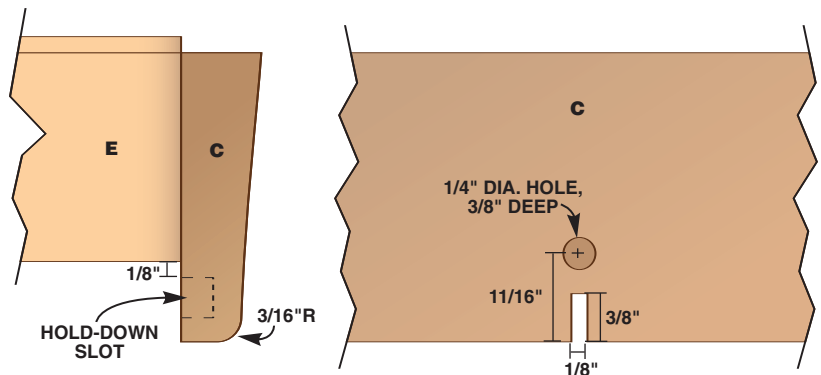
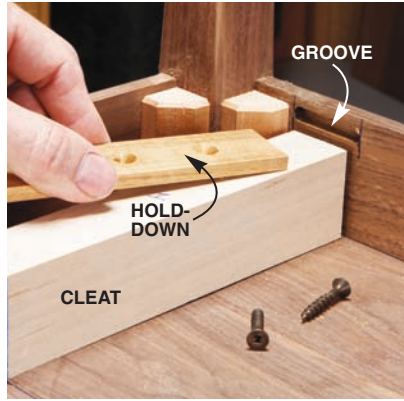


FIG. F RAIL DETAILS

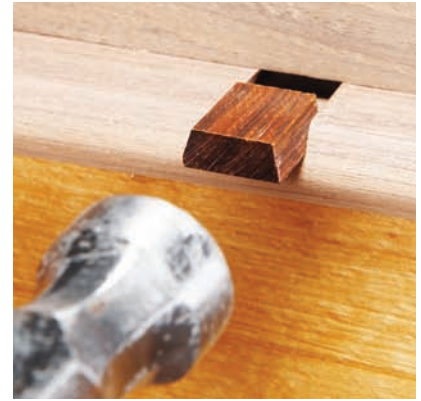




15 After gluing, finish making the joint flush with a No. 80 scraper. Mark both sides of the joint, then scrape until the marks are gone. This ensures that the joint is even.



16 Install hold-down pieces to clamp the base to the top. Slide each hold-down into a groove in the rail, then screw the piece to the cleat. This pushes the rails down tight to the tabletop.



17 Tap small keys into the exposed ends of the dovetailed grooves. Make them from an exotic dark wood to accent your table.

of the curve that was removed by sawing. Saw the other side.

9) Hold the leg between dogs on a workbench in order to smooth the bandsawn surfaces. Begin by planing 4-6 in. of the upper end of each leg's outer face (Photo 11). File or cut a 1/8-in. wide chamfer all around the leg's foot as you work on each face.

10) Smooth the lower half of the leg's outside face using a spokeshave (Photo 12). You won't be able to get down into the lowest section of the curve, however. I use a scraper-shave to smooth this area, but you could use a file or coarse sandpaper wrapped around a convex block.

11) Smooth the leg's inside faces. Mark the point where the curve starts (Fig. G). Begin forming the convex surface below this point with a smoothing plane. Don't plane the upper part of the leg, where the mortise is. That section must remain flat and square to make a tight joint with the rail. Use a spokeshave on the leg's lower section.

12) Round over the legs' outside corners using a router (Fig. E, Photo 13).

MAKE THE RAILS

13) Mill the rails (C and D) as square stock. You'll taper their front edges later on. Cut the rails' tenons using the tablesaw and a dado set. Hold the rails against a sub-fence attached to a miter gauge to set the tenon's length. Note that the tenons are offset, relative to the rail's thickness (Fig. E). Raise the dado set to cut all the tenons' outside faces first, then lower the blade to cut the inside faces.

14) Cut haunches on the tenons with a bandsaw using a fence and miter gauge. Use the same method to rip the lower half of the tenon. Crosscut this piece with the bandsaw, too, but cut 1/32 in. away from the tenon's shoulder. Use a chisel to pare the shoulder.

15) Taper the outside faces of all four rails (Photo 14). Assemble two legs and a rail without glue. Plane the rail more or less flush with the legs.

16) Round over the lower edge of all the rails (Fig. F).

17) Layout and cut decorative notches and holes in the long rails (Fig. F).

Rout slots for the tabletop hold-downs (F) inside the long rails (Fig. E) using a plunge router and a fence.

ASSEMBLE THE TABLE

18) Glue the short rails to the legs. Lay the assembly on your bench and scrape and sand the rails until they're flush with the legs (Photo 15). Glue the rest of the table together and scrape and sand the long rails flush.

19) Make corner blocks (H) and glue them into each corner of the base. There's no need for clamps; just apply a thin film of glue to each block and rub it up and down in position until it sticks.

20) Fasten the top to the base. Make hold-downs (F) and drill and countersink screw holes in them. Turn the top upside down and slide in the cleats. Place the base on the top and fasten the hold-downs to the cleats (Photo 16).

21) Make keys (G) to fit the grooves (Photo 18). Use the same router table setup you used to make the cleats. Glue the keys in the grooves. The front edge of each key should be even with the table's edge. There should be a 1/8-in.

gap between the key and the rail so the top can contract in a dry season.

22) Disassemble the table to finish it. Sand all the parts to 150 grit and brush on three coats of satin varnish.

FIG. G LEG PATTERN

