

# Build a Classic Corner

This 18th-century beauty is all curves, but the joinery is straightforward

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The corner chair, sometimes called a roundabout chair, became fashionable in England and America in the late 17th and early 18th centuries. Supposedly created for a gentleman to sit on while wearing his broad coat and sword, it may owe its name simply to the fact that it sits nicely in the corner of a room. Regardless, it provides today's sitter with an optimal amount of back and arm support, especially when writing at a table or a desk.

Though the chair has lots of curves, the construction is simple mortise-and-tenon joinery without the compound angles found on many chairs. If you aren't a confident carver, eliminate the shell, replace the ball-and-claw foot with a pad foot, and you'll still have a very handsome chair.

## Shapely legs for a shapely chair

The two side legs and the back leg transition into the arm supports, while the front leg terminates at the seat. Pay close attention to the end-grain orientation when you lay out the stock: The front leg should be oriented for a bull's-eye grain pattern on the exposed knee. The other legs should have straight, vertical grain.

Transfer your patterns onto 16/4 stock machined to 3 in. square, but leave enough length for two knee blocks per leg. The knee blocks serve primarily as a transition between the legs and the seat rails.



# Chair

## Legs first

## MACHINES AND HAND TOOLS WORK AS A TEAM

Chair construction begins with the legs. Lay out the pattern, cut the joinery, and then shape the curvaceous legs starting at the bandsaw and moving on to a variety of hand tools.

While the leg blanks are square, lay out and cut all the mortises, then create the tenons that enter the arm rail. All the tenon shoulders must be at the same elevation for the arm to fit flush. Cut around the perimeter of the blank using a dado blade. The tenon is not centered, so set the elevation of the blade carefully for each cut. Drill a 7/8-in.-dia. hole in a piece of scrap to use as a gauge when rounding the tenons.

Cut away the knee-block stock and then rough out the cabriole legs on the bandsaw. Cut the square sections housing the mortises proud of the pattern, as you will flush them to the fronts of the glued-in seat rails later. This is particularly important for the front leg because you will remove a large amount of stock, and leaving it square also aids clamping the leg to the rails.

Shape the legs and carve ball-and-claw feet (see Master Class, *FWW* #186), but hold off on the knee shell until the post of the front leg is rounded into the adjoining seat rails.

### Curved rails, square joinery

Try to get all the rails from one board for grain and color consistency. This is particularly important for the two front rails, which should be laid out end to end or book-matched for a pleasing pattern on the curved faces.

Starting with the front rails, lay out and cut the tenons, and then trace the front and back profiles on the top of each rail. Bandsaw close to the lines, then clean up the surfaces with a curved-sole spokeshave and cabinet scrapers. Leave extra material on the front at each end so you can fair the rail-to-leg joints after they are glued.

The slip-seat frame is supported in the back by cleats, but it rests on a



**Cut the leg tenons using a dado set.** While the leg blanks are still square, cut the tenons on the tops of the side and back legs that connect them to the arm rails.



**Round the tenons.** Guided by a drilled template, round the square tenons using chisels and carving gouges.

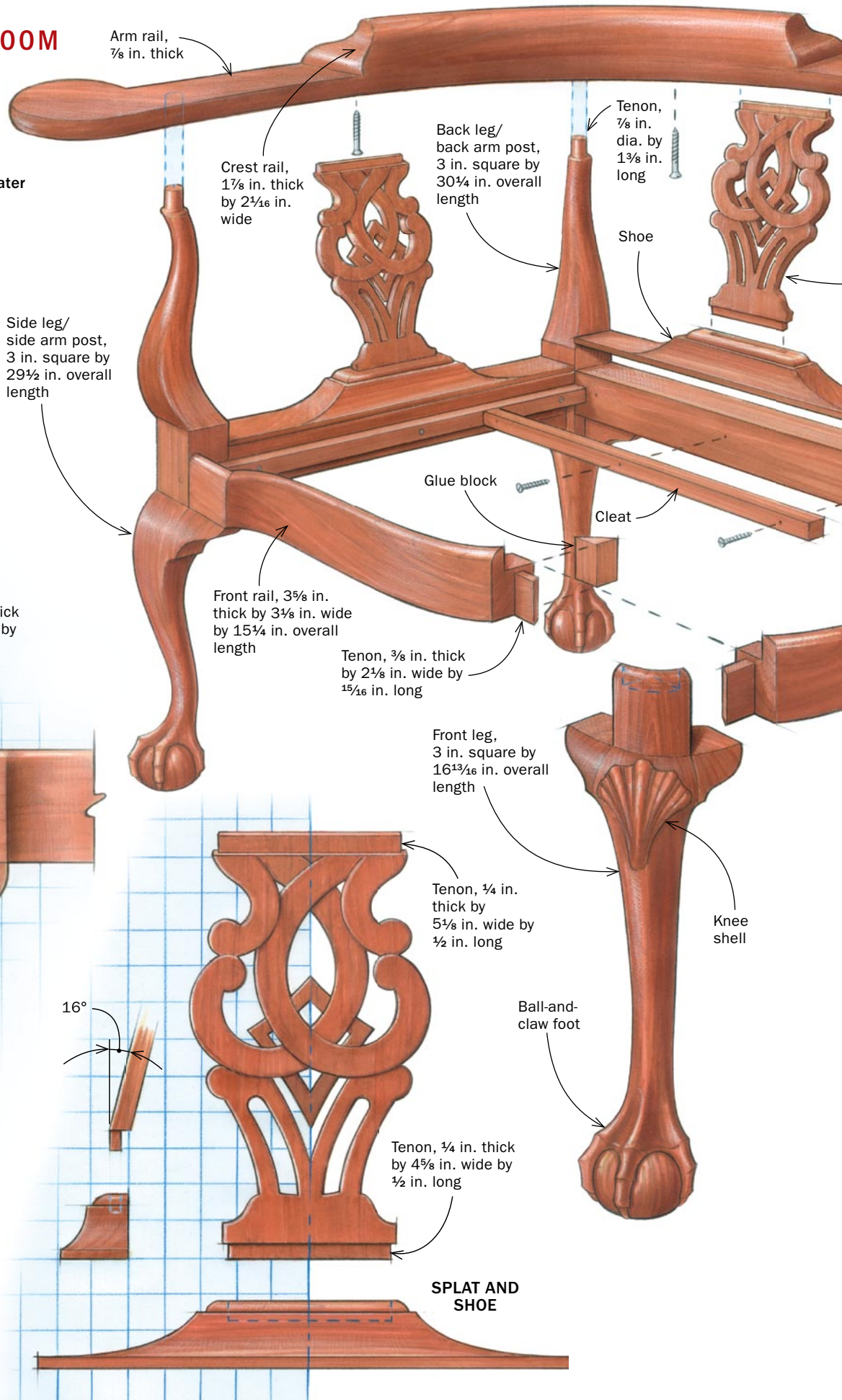
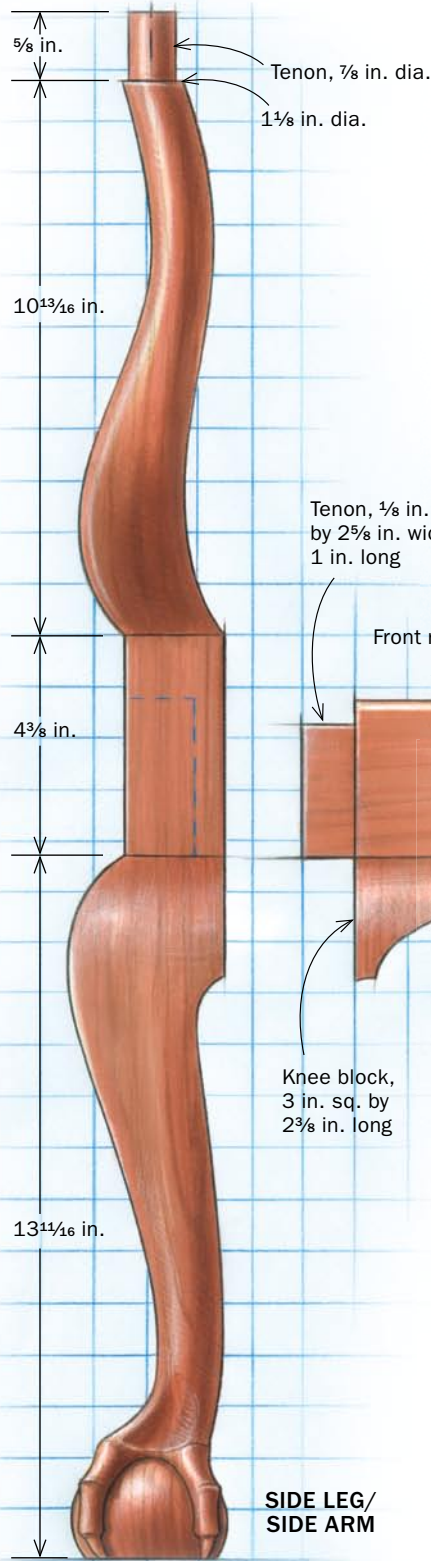


**Cabrioles, back to back.** The back and side legs are really two cabriole legs in one separated by a square post in the middle. Careful bandsawing now (left) will reduce hand shaping later (below). Chisels, rasps, files, and spokeshaves can all be employed to bring the cabriole legs to their final shape.

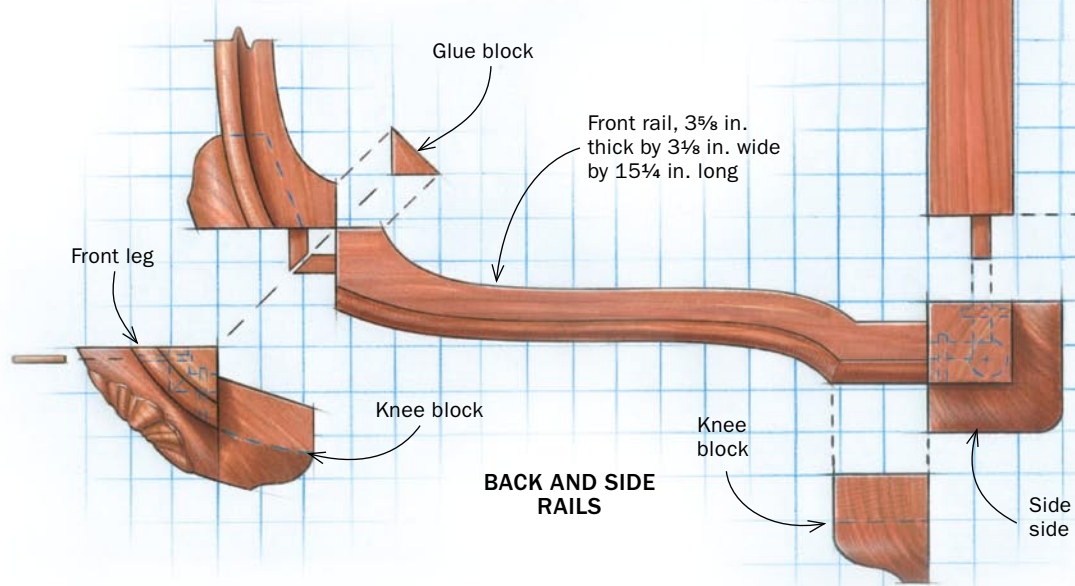
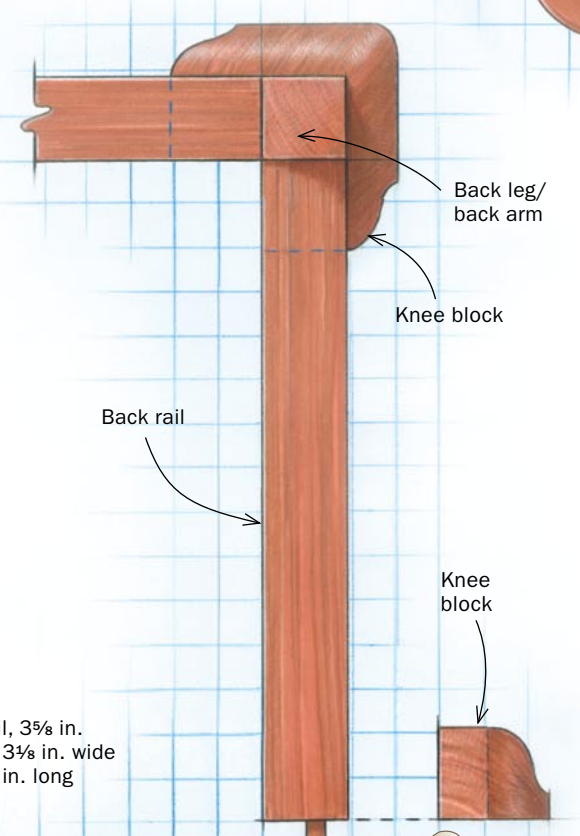
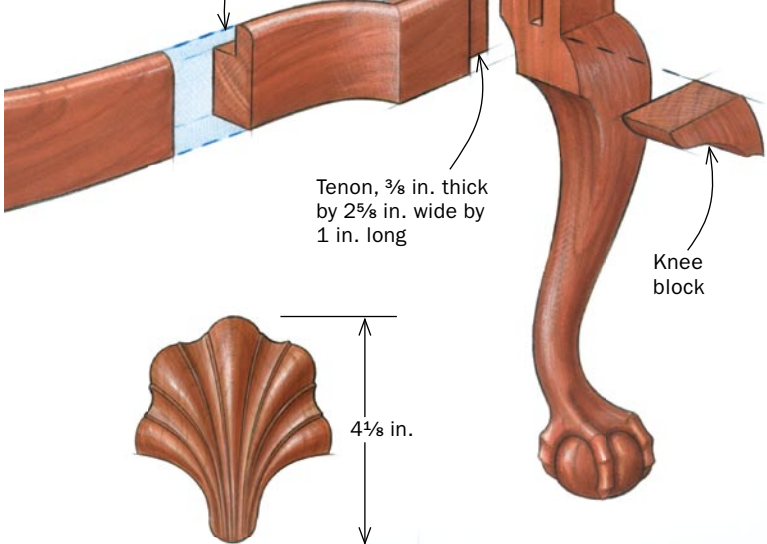
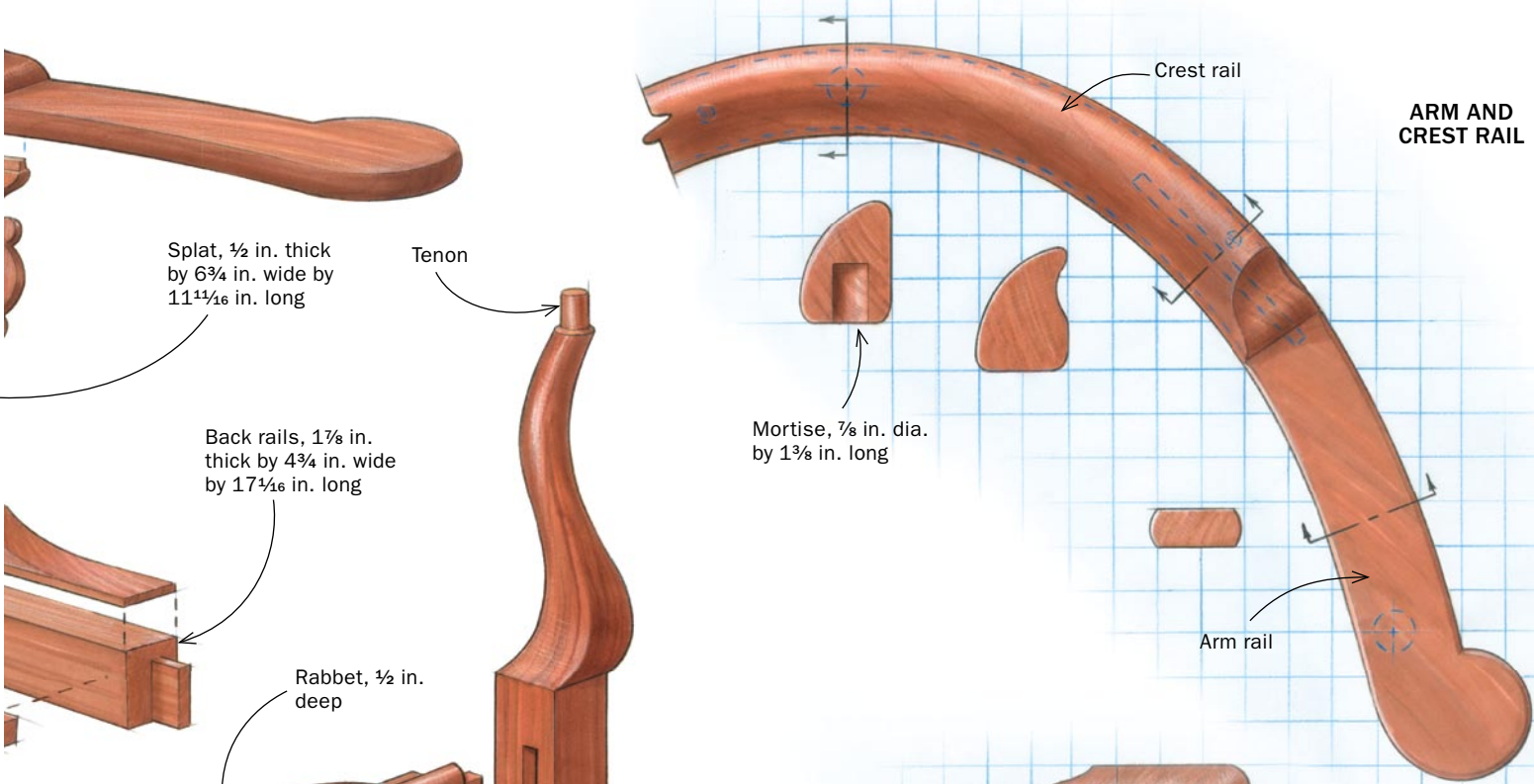


# ANATOMY OF AN HEIRLOOM

This chair is loosely based on one that was made in New York around 1765. The cabriole legs, relief-shell carving, and curved front rails reflect the earlier Queen Anne period, while the ball-and-claw feet and intricate splats reflect the later Chippendale style.



**ARM AND CREST RAIL**



**BACK AND SIDE RAILS**

A set of full-size plans created for this article by Society of American Period Furniture Makers members Robert Whitley and Craig Bentzley is available for \$175 by contacting [cbentzley@verizon.net](mailto:cbentzley@verizon.net).

# Shapely rails BUT STRAIGHTFORWARD JOINERY

The chair's front rails are S-shaped and include a rabbet to support the upholstered seat. Each back rail begins life attached to a shoe that receives the carved back splats.

## FRONT RAILS

**Rough-cut the rabbet.** Remove the bulk of the waste using a dado blade. Cut to the lowest point of the rabbet with one pass, then clamp a stop block to the tablesaw and raise the blade into the stationary front rail as shown to make the deeper cuts.



rabbet cut into the inside top faces of the front rails. To cut the rabbet, first lightly scribe a parallel line 1/2 in. from the front of each rail to establish its edge. Remove most of the waste with a dado blade, then trim to the scribe line using a gouge and chisel. Again, leave a little extra to be removed adjacent to the front leg after glue-up.

The two rear rails also incorporate a shoe that will house the bottom of the back splat. The shoe starts out as part of the back rail but is cut away. This ensures a perfect grain match and provides a bigger section to handle when shaping the shoe.

Before cutting the tenons, use a router table to shape the cove and the quarter-

round bead on the front face and top edge of each shoe. Now cut the tenons on each end and cut the shoes' side profiles on the bandsaw. Finish shaping them with a chisel and scraper. Excavate the mortise in the top of each shoe and then carefully carve the bead returns at each end of the mortise. When both shoes are profiled, saw them from the rear rails.

Dry-fit the four legs to the seat rails to ensure that all joinery is correct and that all four legs land firmly on the floor.

## One long arm made from three parts

The construction of the arm rail is simplicity itself: The bottom two parts are butt-

joined and held together by the crest rail. The arc of the arm is not a constant radius, so use care when laying out the parts.

To ensure matching profiles, nest the two arm blanks together using double-stick tape and rough-cut them on the bandsaw. Clean them up on the router table using a template and a bearing-guided bit. Bandsaw the crest rail to rough shape. Using the arms as a template, clean up the crest rail on the router table, using a flush-trimming bit. Now cut the ogee-shaped ends on the bandsaw. Glue and screw the three parts together but leave any further shaping until later.

Once the glue dries, locate the mortises in the arm rail for the leg tenons. First, use the drawing to locate the mortise for the back-leg tenon and drill it on the drill press. Place the tenon gauge you used earlier over the end of each side-leg tenon, and then use a Forstner bit to mark the center of each tenon. Use a clipped nail to drill a small hole in the center of each tenon. Inserting another clipped nail in each hole, place the dry-assembled chair base upside down on the arm rail. Align the two sections, push the nails into the rail, and drill mortises centered on the nail holes. You can now finish shaping the arm rail.

## The back splats complete the chair

To make the back splats, first dry-fit the arm rail to the base to establish the distance between the top of the shoe and the arm rail. On a piece of scrap the same thickness as the back splats but an inch or two longer, cut an angled tenon that fits into the shoe. Rip off a 1/4-in.-thick piece

## BACK RAILS



**Shape the shoes.** Use a bullnose bit in a router table to cut the shoe's cove. Cut the bead with a corner round bit.



**Bandsaw the ends.** With the front profile cut, draw the side profiles on the back of the shoe and cut them on the bandsaw.



**Take off your shoes.** When you've finished shaping the shoes, cut them away from the back rails. Remove the small tab at each end.

## Arm rail

### CURVE IT AND CARVE IT

The armrest flows around the back and sides of the chair. You need to locate the mortises accurately for the arm posts and the splats.



**Two parts shape the third.** After shaping the two sections of the arm, screw them to the crest rail to act as a template for shaping it to match. Use a flush-trimming bit in the router table.



**A tricky cut made easy.** A hand screw provides a stable platform for bandsawing the ogee-shaped ends of the crest rail.



**Trick for marking mortises.** Use a clipped brad nail to drill a hole in the center of the side-leg tenons. Then place another clipped nail in the hole (above). Place the back leg tenon into its mortise in the arm rail. Set the side leg tenons an equal distance from the inside edge of the arm rail (right). Push down on the legs so that the nails mark the arm rail.



and crosscut it in two. Clamp these two parts so they overlap and use them as a measuring stick to determine the distance. Crosscut the scrap piece to this size and use it to mark the location of the mortises for the splats on the underside of the crest rail, including the center points.

Resaw the splats from one board, but leave them about 1 in. extralong. Because the mortises for both ends of the splats are perpendicular to the floor but the splats lean outward from the seat, you must angle the tenons accordingly.

With the same measuring stick used earlier, determine the total length of each splat, locate the tenon shoulders, and tweak the tenon angles. Transfer this information to the side of the splats and cut them to final



**Finish shaping the crest rail.** Use a flat chisel to rough out the front curve and then refine it using a spokeshave and scrapers (left). On the back side at both ends of the crest rail, use carving gouges to create the small, tapering recesses that are purely for ornamentation (above).

## Back splats HOW TO GET A PERFECT FIT



**Scraps help.** Use a scrap of wood to find the height of the splat and the angle and location of the joinery.



**Chop the mortise.** Carefully clamp the arm rail so that you can chop the splat mortises.



**Angle the tenons with accuracy.** Use a tenon jig and narrow dado set to form the tenons at each end of the back splats.



**Carving tips.** To give a three-dimensional look to the back splat, carve away material where the pattern intersects. After making the initial chop cuts at each intersection (above), remove the paper pattern and complete the carving (right).



length with the ends at an angle of approximately  $16^\circ$ . Use an angled tenon jig to cut the tenons. Trim them to width with a handsaw and a bench chisel.

Once you are satisfied with the joints, spray-mount the pattern to the front of each splat. Bandsaw the outer profile and use a scrollsaw or fretsaw to cut the inner pattern. This design has an interlaced effect created by carving away material at the points of intersection. Make the initial cuts with the pattern attached, but remove it to complete the carving to get a better

feel for the final look. Complete the splats by smoothing all the saw cuts and lightly chamfering all the exposed edges on the rear faces with curved and flat files.

### Carve and shape as you assemble

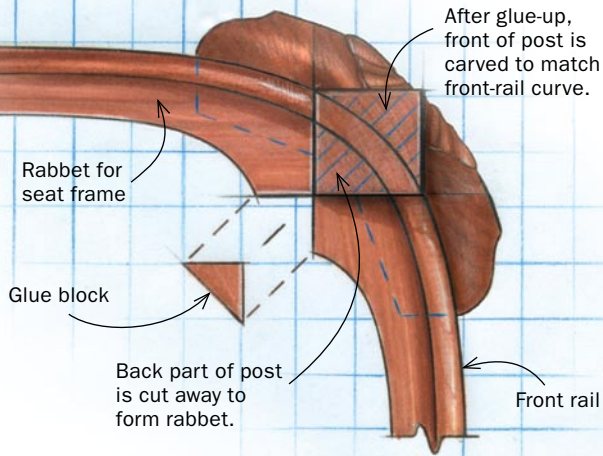
Add the front knee blocks, which should fit flush to the bottom of the rail and the face of the adjacent leg post. Once fitted, simply rub-glue them into position. Sometimes a bed-spring clamp helps hold them in place until the glue sets up. Now glue the front rails to the front post, and then

shape the front post to form a continuous curve. Then you can carve the knee shell (see Master Class, *FWW* #210) and then cut away the rabbet in the back of the front leg post for the seat frame.

I prefer to glue up the remainder of the base in two stages, as it is less frantic and there is enough flex in the base to allow this. Because you can't use the front leg post for clamping when gluing on the side legs, you'll need to attach clamping blocks to the front rails. These are simply sandpaper-backed blocks attached with a

## Assembly CLAMP, THEN SHAPE

Keep the front leg post square to provide a flat surface for clamping the front rails to it. After glue-up, you can also extend the seat-frame rabbet onto the back of the front post.



**Finish shaping the front post.** After you have clamped on the front rails, you can extend their curve and rabbet onto the post.

separate clamp. Once this assembly is dry, add the back leg and the back rails.

Now assemble the top half of the chair. Dry-fit all the parts. If necessary, plane off some of the base of the shoes to get the shoes and splats to fit. Glue the shoes to the back rails, glue the splats into the shoes, and then glue the arm rail to the leg tenons and the top of the splats. You may require several bar clamps to ensure that the arm rail is firmly attached and flush to the shoulders of the two side and rear legs as well as the top shoulder of each splat.

Once the glue is dry, you can finish shaping the base starting with the leg-to-rail joints. Now that you no longer need the flat surface for clamping, you can attach the knee blocks to the back and side legs. Last, create the thumbnail edge on the front rails and intersecting front leg using a chisel and rasp, but be careful not to go beyond the pattern lines.

Glue and screw the seat-frame supports inside the back rails, and add a small angled glue block inside the front leg and front rail intersection for added strength.

Make the slip-seat frame for upholstering the chair (see Master Class, p. 90). Give the chair a final hand-sanding and then apply your choice of finish. I brushed on several washcoats of garnet shellac and then several coats of an oil/varnish mixture. □

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**Final assembly.** Clamping the arm/crest rail to the rest of the chair can be tricky given the chair's numerous curves. Do a dry-fit first. The easiest way to fine-tune the fit is to plane a bit off the shoes at the base of each back splat.