

# How to Add Quarter

Make classic fluted columns of any length, without a big lathe

BY JEFF HEADLEY

Many aspects of period furniture design are linked to classical architecture. One of the most obvious connections is the fluted quarter columns that adorn the front corners of many pieces, from chests of drawers to tall case clocks. The design has evolved through the years; on Federal pieces, for example, the fluting was replaced with inlay and stringing.

The good news is that while the column design may vary, the case construction is fairly constant. So once you've built one piece with this feature, you can easily incorporate it into a wide range of pieces. And quarter columns work on contemporary pieces, too.

Unlike some methods that require turning the whole column on a lathe, mine relies mostly on shopmade jigs and tools. The limited amount of turning can be done on a mini-lathe regardless of the



## Columns add elegance

Many pieces, from chests of drawers to bookcases, desks, and tall clocks, use quarter columns. Instead of the abrupt termination of a conventional corner, flutes on the quarter columns create shadow lines that attract the eye. The carcass design must include a notch to receive the quarter column, but this is relatively simple to add. Instead of using a large lathe to turn the column and a complicated router jig to cut the flutes, Headley turns just the base and capital of the column on a small lathe and shapes the central section with hand tools.



Photos: Mark Schofield; drawings: Christopher Mills

# Columns to Your Furniture

column's length. If you've long admired quarter columns but thought they were beyond your skill level, this article will prove you wrong.

## A simple notch receives the column

Carcase construction using quarter columns is similar to that of a regular chest of drawers. The case is dovetailed and the rails are attached to the case sides with sliding dovetails. You'll notice that my sliding dovetail isn't much more than a rabbet with an angled bottom shoulder, but this joint will last lifetimes longer than a regular rabbet that has no mechanical strength.

The front is notched at both ends to receive the quarter columns. The inset from the front is 1¼ in., or ¼ in. to ⅛ in. more than the radius of the quarter column. However, the distance from the end must also allow for the depth of the



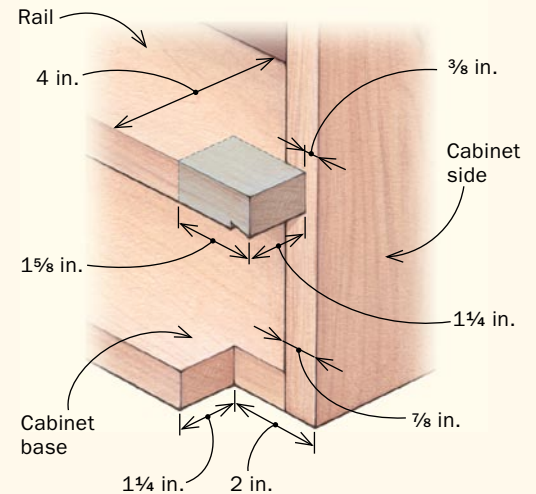
## CREATE THE RECESS FOR THE COLUMN

The design and construction of a traditional square-cornered cabinet must be slightly modified in three steps to receive quarter columns.

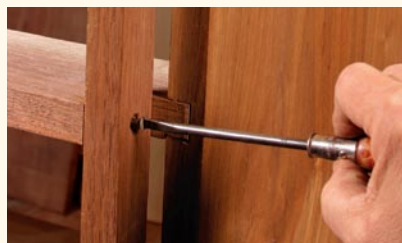
### 1. NOTCH THE RAILS



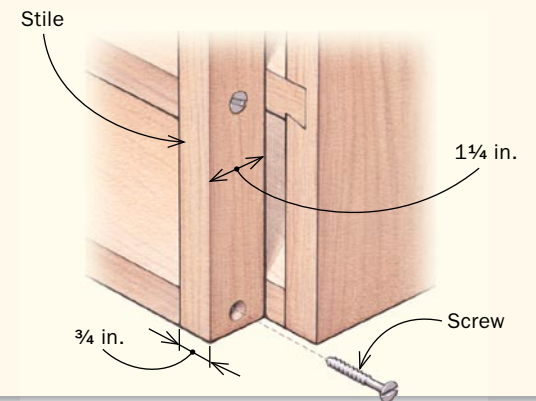
**Not a square.** The extra width accommodates the stile that is attached in the next step.



### 2. ADD THE STILE



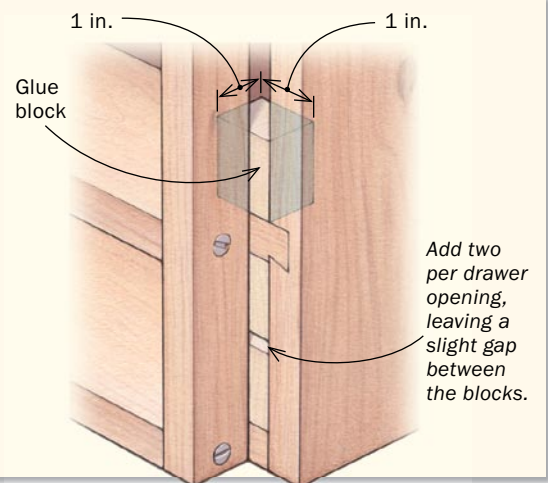
**Just a few screws.** The front corner of the column meets a stile that is screwed to the notched ends of the drawer rails.



### 3. ADD GLUE BLOCKS



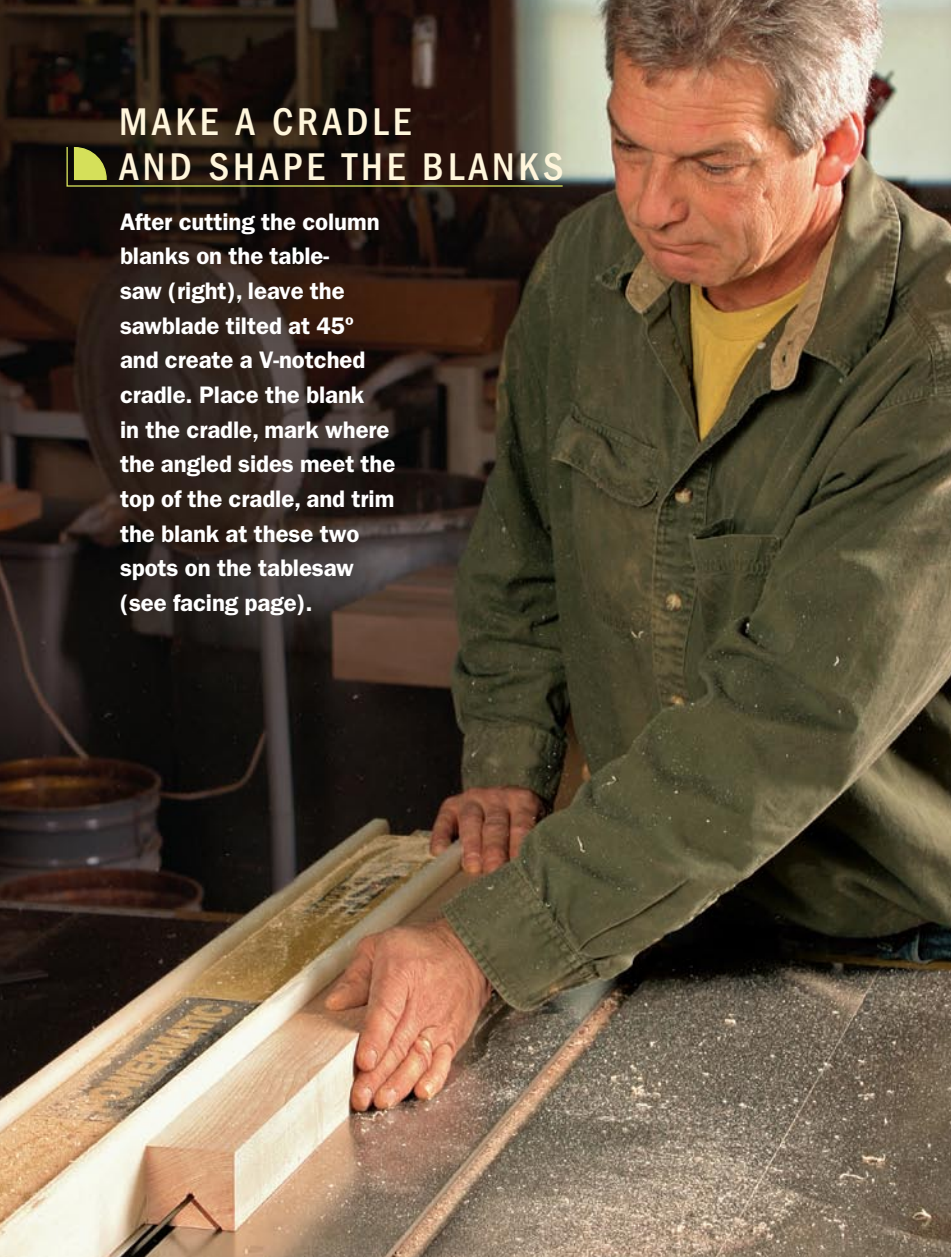
**Glue blocks for rigidity.** Add glue blocks to connect the stile to the side of the case, forming a stiff-sided recess for the quarter column. A rub joint holds them in place without clamping.



Add two per drawer opening, leaving a slight gap between the blocks.

## MAKE A CRADLE AND SHAPE THE BLANKS

After cutting the column blanks on the table-saw (right), leave the sawblade tilted at 45° and create a V-notched cradle. Place the blank in the cradle, mark where the angled sides meet the top of the cradle, and trim the blank at these two spots on the tablesaw (see facing page).

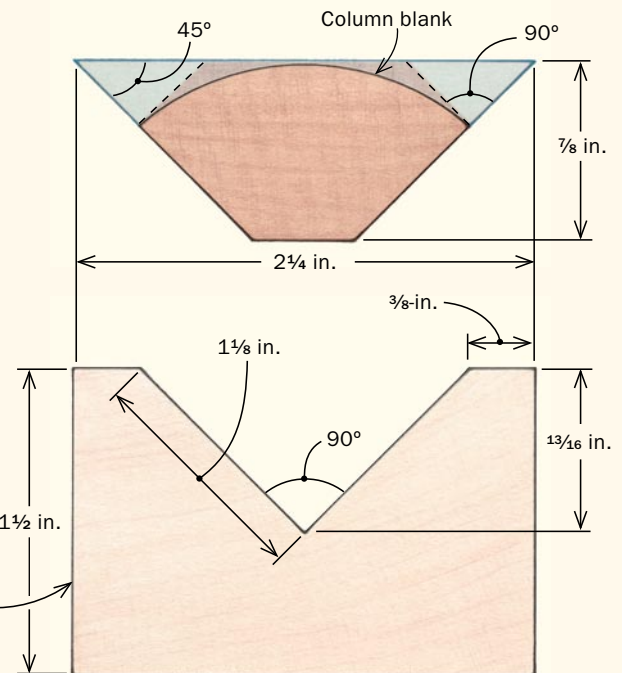


**Simple cradle.** The quarter column sits in a hardwood cradle while the fluting is added. To make the cradle, make two 45° cuts to form a V-shaped notch.



**Rip the blanks.** You don't need thick stock for the columns. From 7/8-in.-thick stock, cut two blanks with sides at a 45° angle.

### CRITICAL DIMENSIONS



Hardwood cradle blank, a minimum of 4 in. longer than the quarter-column blank

dovetail and the width of a stile that will be added later. The base and sub top of the carcass are notched before being glued to the sides. Rather than figuring and measuring incorrectly, cut and dry-fit each rail into the case, and then mark the opening, allowing for the stile and the quarter column.

When all the rails have been notched and fitted, nail or screw a stile to each end of the rails. You should now have a 1 1/4-in.-square notch. Add glue blocks to

secure the stiles to the case sides. Bevel the corner between the two glued edges.

### Shape the quarter round

With the corner notch complete, cut out a thin template the same radius as the quarter column with a 1/8-in. straight section on each end. You want the blank for the column to start out slightly too large, so you can handplane the sides to fit the notch perfectly. One way of producing the columns is to glue four blocks together

with brown grocery-bag paper in between them, turn the four-part piece into a cylinder on the lathe, then use a chisel to split the brown paper glue line to reveal four quarter columns. I've done this, but there are a number of drawbacks. Of course, you need a long lathe. But also: You have to wait for the glue to dry thoroughly; you hope pressure from the lathe centers doesn't cause the pieces to separate during turning; and you end up with two more columns than you need.



**Trim the sides.** With the blade set at 90°, cut away the sides of the blanks where they extend above the top of the cradle.



**Test the fit.** Place the blank in the cradle and check that the sides terminate flush with the cradle's top.



**Check the radius.** Make a template that matches the column's radius, but with an extra 1/8-in. straight section at each end.

I prefer a simpler method, using a handplane to contour the pieces. Start with a piece of 7/8-in.-thick straight-grained wood, angle the tablesaw blade to 45°, and rip two V-shaped strips with 2 1/4-in.-wide tops. For both laying out the curve of the column and scraping the fluting, you need to hold the blank in a cradle. On a piece of dense, straight-grained hardwood such as oak or maple, make two 45° cuts to create a 90° notch centered on the wide side of the cradle, leaving a 1/4-in.-wide shoulder on either side. Set the column blank in the cradle and use the template to draw the radius on each end of the blank. Now mark where the sides of the blank reach the top of the cradle. Take the blank to the tablesaw, and with the blade at 90°, trim away the excess beyond the mark.

You are now ready to establish the quarter column's curve. Clamp the blank between dogs on your workbench. Use a handplane to create a multi-faceted curve, and refine the curve with a scraper. Don't use sandpaper. Residual grit from the sanding will blunt the scratch stock, which is used next.

### Form the flutes with hand power

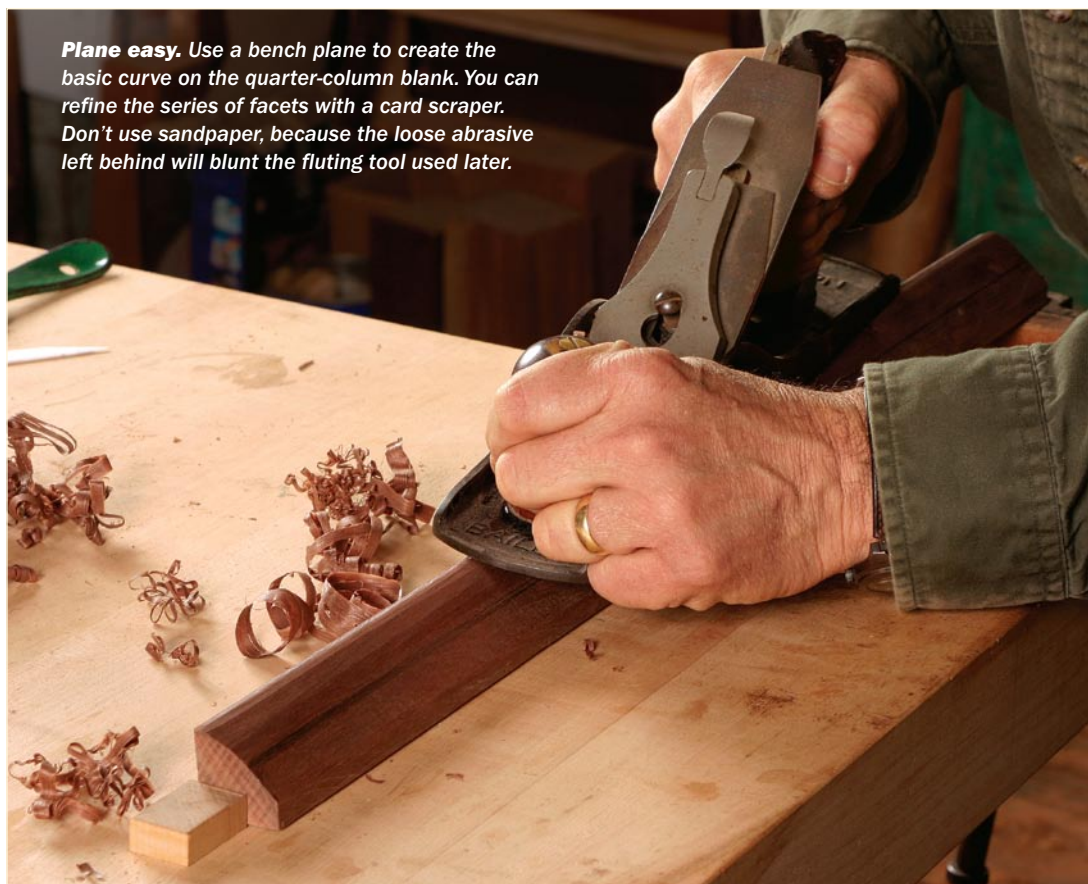
With two quarter rounds ready to be fluted, you can choose from a variety of styles. The simplest is flutes that extend the length of the column (we'll get to the turned capital and base later). The quarter column I'll make has the added beauty of stop-fluting—so called because the flutes stop about two-thirds of the way down and transition into beads. The transition varied

by region: On Philadelphia and Charleston pieces, among others, the transition line ran straight across; in northern Virginia and the Shenandoah Valley, the line curved upward toward the center as I'll demonstrate. John Shearer, a rather flamboyant late 18th-/early 19th-century builder, curved his downward toward the center.

Whatever style you choose, both the flutes and the beads are cut with a two-handed, shopmade tool that rides on the shoulders of the cradle you just made.



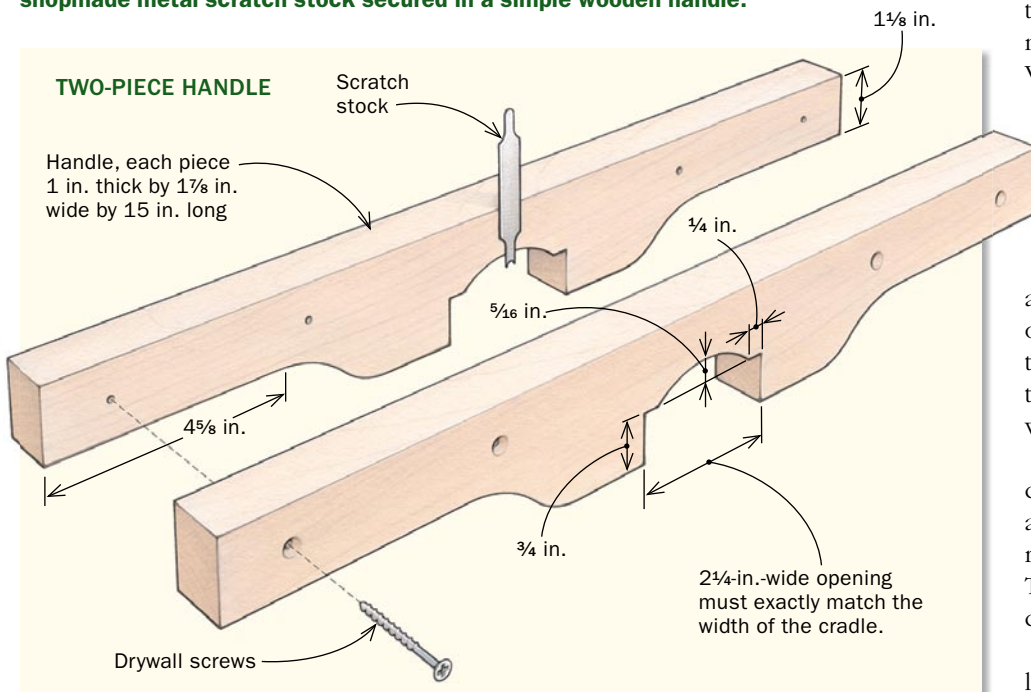
**Transfer the shape.** Place the template against the end of the blank and mark the desired curve.



**Plane easy.** Use a bench plane to create the basic curve on the quarter-column blank. You can refine the series of facets with a card scraper. Don't use sandpaper, because the loose abrasive left behind will blunt the fluting tool used later.

## ONE SCRATCH STOCK HANDLES FLUTES AND BEADS

The flutes and beads are scraped into the column blank using a small, shopmade metal scratch stock secured in a simple wooden handle.



profile shown in the drawing. Round over the handles at either end, run in screws, remove them, and then rip the blank in half. When screwed back together, the halves grip a piece of metal known as a scratch stock that scrapes the profiles on the blank. I filed and then snapped off a 1/4-in.-wide strip from a card scraper, but other sources include sections of an old bandsaw or hacksaw blade. Grind and file the convex profile to cut the flutes on one end and the concave profile for the beads on the other, being careful not to overheat and discolor the metal, which will cause it to lose its temper.

Secure the rounded quarter column in the cradle by screwing a block into the V-notch at each end, but make sure that the blocks remain below the surface of the column. This way, you can scrape to the end of the column.

When laying out the flutes on the column, leave the two outside shoulders slightly wider than the shoulders dividing the flutes. This way, you can trim the sides of the column to fit later. Now transfer the location of the flutes to the ends of the blank so that you can align the scratch stock in the tool with them. Although this quarter column has five flutes, you need to set the metal scratch stock in only three locations: The far outside position will do both outer flutes; the center outside position will do the two adjacent flutes; and the central position will cut the central flute.

If you plan to do stop-fluting, mark the transition lines on the column. Begin scraping, stopping as close as possible to the transition line. When you have done



**The cradle determines the tool.** Use the cradle and the curved quarter-column blank to help lay out the scratch-stock holder.

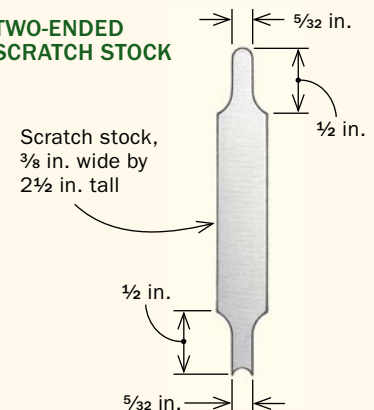


**No slop allowed.** To cut straight flutes, the cheeks of the scratch-stock holder must fit snugly against the sides of the cradle.



**Two profiles on one piece.** Start with a piece of card scraper or old hacksaw blade. On one end, grind the rounded profile for scraping the fluting (left). On the other end, grind the concave profile for the beaded stop-fluting (above). Any burr raised is insignificant, and the tool is used in both directions.

### TWO-ENDED SCRATCH STOCK



## SCRATCH THE FLUTES AND STOPPED FLUTES

Lay out where the fluting will transition into the stop-fluting (beading). Calculate the position of the center point of the middle flute and that of the two flutes to its right. Mark these as lines on the top end of the blank. These will be used to align the scratch stock in the holder.



**Lay out the transition.** If you plan to combine fluting and stop-fluting on your quarter column, lay out the staggered transition.



**Align the scratch stock and scratch the first flute.** Mark the centerline of the middle and two right-hand flutes on the end of the blank. When the scratch stock is aligned and at the correct depth (left), screw the two parts of the holder together. Push and pull the tool along the cradle to create the flute (above). Reposition the scratch stock to create the adjacent flute on the right, then just reverse the tool to create a symmetrical flute on the left.

### FLUTING

Outside shoulders start off at least  $\frac{3}{16}$  in. wide to allow column sides to be planed to fit.

Flutes,  $\frac{5}{32}$  in. wide by  $\frac{3}{32}$  in. deep

$\frac{5}{32}$ -in. gap between flutes

Scratch stock alignment lines

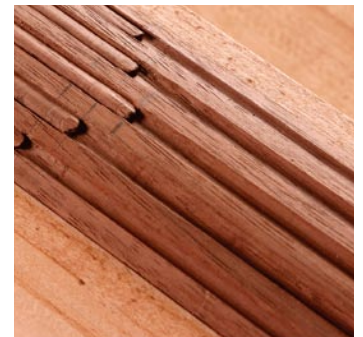
$\frac{1}{4}$ -in. gap between adjacent transitions

### STOP-FLUTING

Stop-flute,  $\frac{5}{32}$  in. wide by  $\frac{1}{16}$  in. deep



**Finish with stop-fluting.** After all the flutes have been cut, flip the scratch stock end-over-end, and create the beading.



**Carve the transition.** Try to have the scratched profiles almost meet, then use a #9 sweep, 3-mm-wide gouge to complete the intersection.

## TURN THE BASE AND THE CAPITAL

The only parts of the quarter column that are turned on a lathe are the capital above the column and the base below it. Leave the square sections slightly long and trim them to length when dry-fitting the three parts of the quarter column.



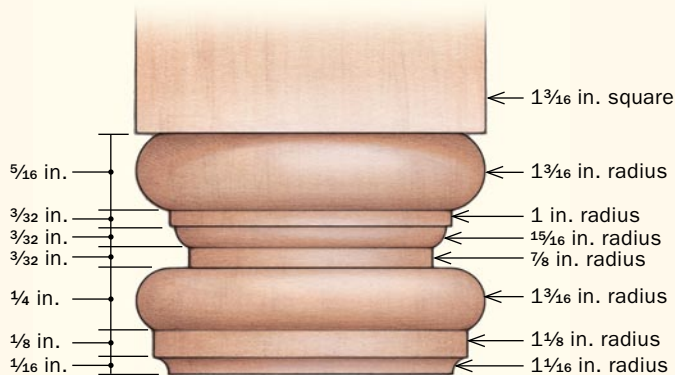
the fluting, flip the metal scratch stock and work on the beads. You will have to hand-carve the intersection of the flutes and beads, but try to keep this to a minimum.

### Turn the ends and install the column

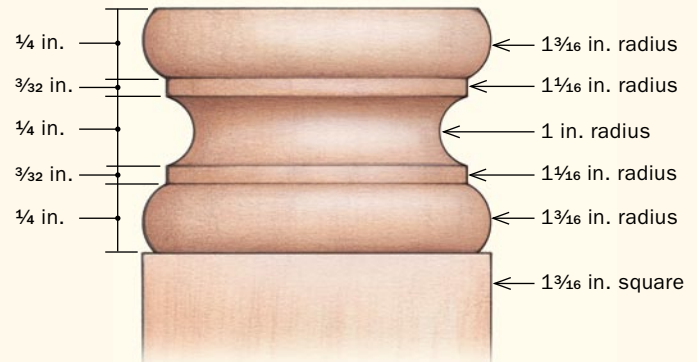
Starting with a 2 $\frac{5}{8}$ -in.-square block, turn a capital and a base to the desired shapes, leaving a slightly heavy shoulder so that you can adjust the length. Saw both turnings into quarters. You want these pieces to project a little from the case so you can plane them to fit the corner notch and the shaft of the column. Dry-fit the parts and handplane the sides of the column until it fits just inside the notch. It is best to lay the case flat on its back to fit and then glue and clamp the capital, the column, and the base into the notch. When dry, complete the rest of the piece. □

*Jeff Headley is the owner of Mack Headley and Sons, period furniture makers near Winchester, Va.*

### CAPITAL



### BASE



**Eight parts from one turning.** Rip the turned blank into four equal sections, four capitals and four bases.



**Plane to fit.** The radius of the turning is oversize to leave room for ripping and handplaning the sides until they fit.



**Glue in the columns.** With the cabinet on its back, trim the three parts of the column until they fit the recess snugly.