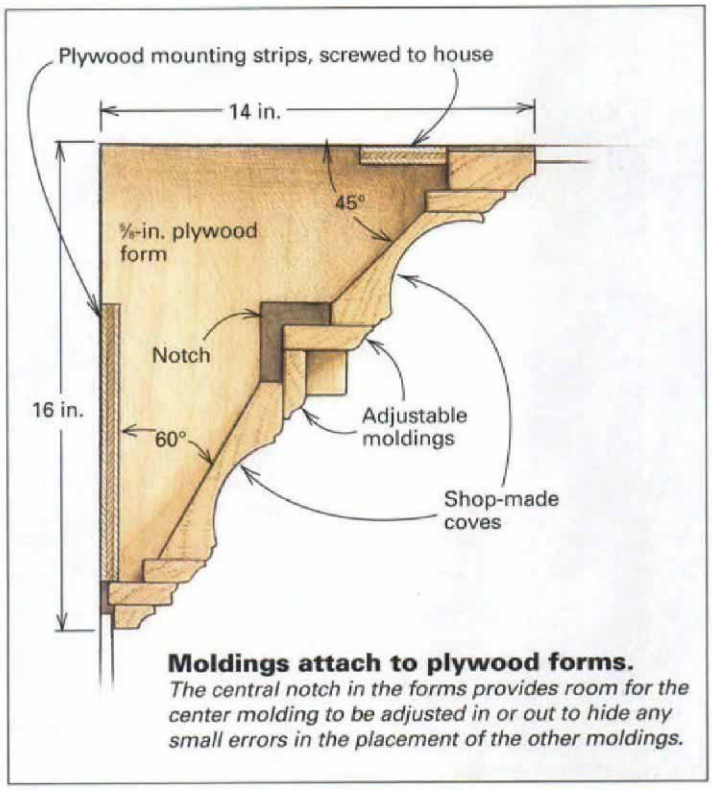


Moldings attach to plywood forms. *The central notch in the forms provides room for the center molding to be adjusted in or out to hide any small errors in the placement of the other moldings.*

A Large Cornice Made From Built-up Moldings

A molding head on a radial-arm saw shapes the coves, and plywood forms support the moldings

by Barrie Graham

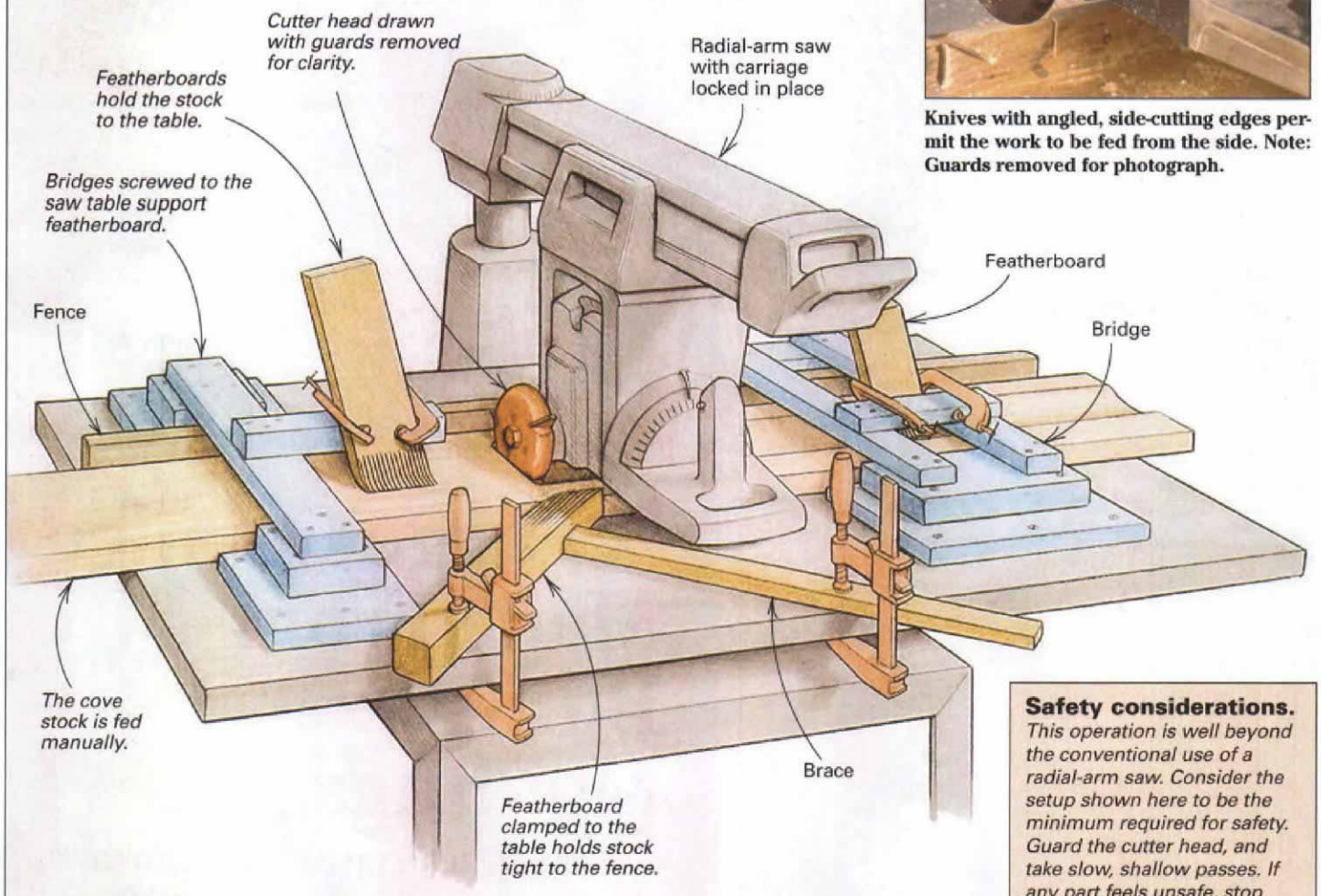
Although I am a cabinetmaker, the scarcity of craftsmen here in rural Quebec often leads me to jobs that are outside cabinetmaking's usual realm. Such was the case when the owners of a local Victorian home asked me to design and make the cornice moldings for the three-story turret they were adding.

Because of the house's grand scale and the fact that the cornice could be viewed only from 40 ft. below, it had to be big. The cornice that I designed measures 20 in. across its face and was built up from ten individual pine moldings (drawing left). Other carpenters would install the cornice from scaffolds, so the installation had to be as simple as I could possibly make it for them. My solution was to build a series of shop-made plywood forms

Drawings: Bob La Pointe. Photo this page: Andy Engel.

Featherboards ensure a safe, smooth cut. *Mounted on bridges ahead of and behind the cutterhead, featherboards keep the stock from vibrating. Successive shallow passes are taken, and because the operator can see the cut being made, he can judge the proper feed rate for the smoothest cut.*

Knives with angled, side-cutting edges permit the work to be fed from the side. Note: Guards removed for photograph.



Safety considerations. *This operation is well beyond the conventional use of a radial-arm saw. Consider the setup shown here to be the minimum required for safety. Guard the cutter head, and take slow, shallow passes. If any part feels unsafe, stop and find another way.*

that screwed to the house, forming a nailing surface for the overlapping moldings of the cornice (photo facing page).

Molding the coves—I made all the smaller molding profiles with a molding head on a table saw. These were fairly straightforward. However, the 7-in. wide cover took some thought because I don't have a shaper or molder that can cut such a large profile in a single pass.

I considered making the coves on a table saw, using a molding head with knives sharpened on one edge. I could feed the stock into the knives at a right angle, taking successive, shallow passes.

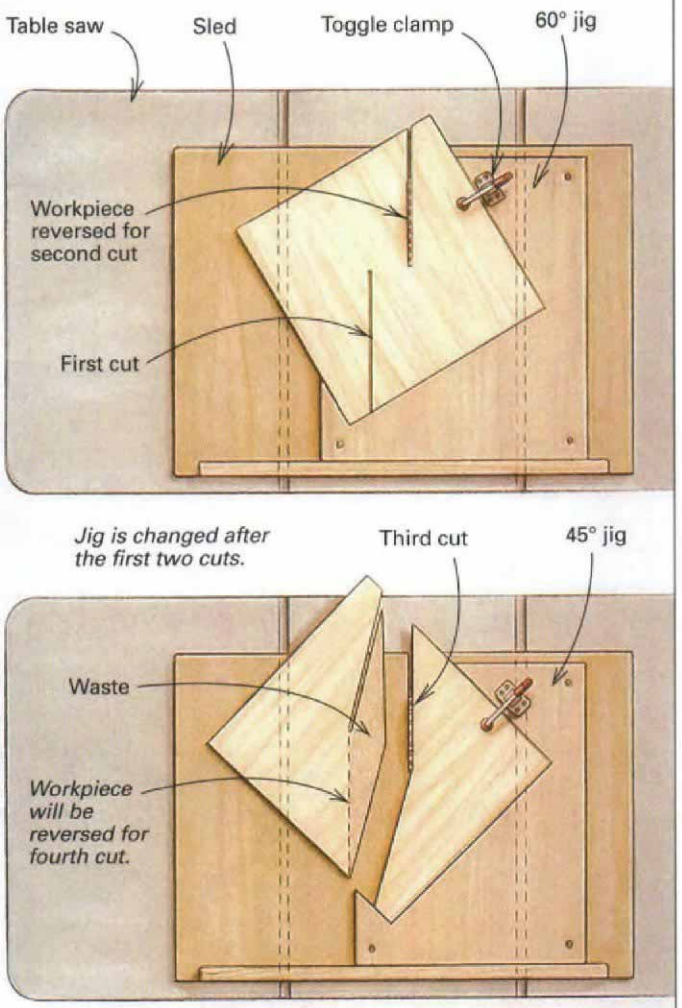
However, I made the coves on a radial-arm saw instead, locking the carriage in place and using the same right-angle feed. Because the stock passed under the cutter, I could watch the profile take shape, and I could minimize tearout by controlling the feed rate.

The other key to a smooth surface was minimizing vibration. To this end, I mounted featherboards on two bridges above the saw table (drawing above). They held the stock flat to the table, and another featherboard held it to the fence, resulting in a fairly smooth cut. It's not smooth enough for a stained interior molding, but it is more than adequate here because the machined surface of the cove matches the texture of the siding.

A jig speeds the cutting of the plywood forms—Before starting, I had drawn a section of the cornice for the client's approval. After machining all the moldings, I drew a final full-scale section of the cornice using the actual moldings as templates. I used this drawing to lay out the ⅝-in. CDX-plywood forms that would hold the molding to the house.

Because I had to make about 200 of these forms, I needed a method that made good use of both time and materials (drawing facing page). I started by cutting sheets of ⅝-in. CDX into rectangles that were the size of two forms laid face to face. Then, using simple jigs, I made four passes on the table saw that cut the primary angles on two forms. I later notched the forms using a table saw and miter gauge.

Two sled-mounted jigs speed cutting angles on 200 forms. *To make the plywood forms (photo right), the author made two offset 60° cuts halfway through each of 100 plywood rectangles, flipping the workpiece between cuts. Changing to a 45° jig, two more cuts shape the forms. Notches were cut later with a miter gauge and table saw.*



These plywood forms were assembled in 8-ft. sections and screwed to the house. Then the moldings were nailed to the forms, except at outside corners, where they float, nailed and glued only to other moldings.

I joined the completed forms into units by screwing 8-ft. long plywood strips to the top and bottom of the forms. The plywood strips are dadoed at 8-in. intervals to space the forms evenly and to hold them square.

Unsupported miters ease assembly of the cornice—The carpenters screwed the assembled forms to the house, taking care that they were level. Out-of-level forms would have introduced a twist to the moldings and added complexity to joints that already would be difficult.

None of the 20 corners on the turret is a 90° or 45° angle. To simplify installation of the cornice, the carpenters placed the forms as close to outside corners as possible, but not directly behind them. Forms placed behind an outside corner would have projected from the house at an angle and been shaped differently, in the same way that a hip rafter differs from a common rafter. But a hip rafter generally falls on a 90° corner, and the odd angles of the turret made this project an exercise in geometry that would have vexed Pythagoras.

As a result, all the moldings at the outside corners join in midair, here nailed and glued only to each other. There was a bit of play in the moldings, but that made getting good-looking joints easier. The moldings are stout, and the nearest forms are close enough to the corners that the joints are solid once nailed and glued.

To locate the midair miters, the carpenters held a piece of molding in place so that it ran past the outside corner. A straightedge held along the forms on the other side of the corner was extended until it intersected the back of the molding. This point, representing the back of the miter, was marked, and the piece was cut. After the first piece of molding was nailed up, the overlapping piece was held in place and marked for cutting.

The inside corners were simpler. The bottom and top moldings butted to the house and to the intersecting form, respectively. The other moldings simply lined up on the miters of the preceding moldings. After the moldings were cut to length, the inner miters were glued together with Titebond II (Franklin International, 2020 Bruck St., Columbus, OH 43207; 614443-0241).

The top and bottom moldings were nailed up first. Then the two big coves were placed. I had nailed and glued the three center moldings together in the shop. The plywood form's center is notched so that this center molding doesn't touch the form. It is nailed to the coves only; it can be adjusted to hide small installation errors in other moldings. Finally, the small cove was installed to cover the joint between siding and cornice. □

Barrie Graham is a cabinetmaker from Arundel, Quebec, Canada. Photos by the author, except where noted.