Federal-ish Mahogany Dining Table
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I have always liked the clean lines of Federal-period furniture. That provided the motivation for updating our old oak country-style dining table. The immediate challenge is that modern-style dining tables were not widely made or used in the Federal period so I had some difficulty finding good examples I could copy. I went through many, many iterations of drawings, many golden-ratio calculations, and surreptitiously took measurements of a few tables in furniture stores. I finally settled on a design that, to my eye, has Federal elements. It’s a racetrack table, with four tapered legs attached to a curved apron. It’s also an extension table with two leaves, not a feature that would have been part of a Federal-period table. All told, I call this table Federal-ish.

Completed table

I used period-appropriate mahogany. To get the wood, I rented a U-Haul and drove up to Highland Hardwoods in Brentwood, New Hampshire. I found some great 16/4 mahogany boards so that all the pieces of the table top and aprons could come from single boards. I’d never done curved aprons, and the joinery between the legs and the apron also was new to me.
So, after getting the mahogany home, I decided I’d better first do a mockup of half the table in poplar. A quick trip to the Woodery in Lunenburg provided the poplar.

Some of the mahogany boards

The poplar mockup came together relatively quickly, and I liked how the design looked in three dimensions. And, I learned, more or less, how to do the joinery. Following is how things proceeded for the mahogany version.

For the tabletop, I resawn boards from one of the 16/4 boards. Then, I jointed and planed them down to 7/8”. I spent a decent bit of time fussing with grain patterns to take advantage of the book-matched boards.
Choosing grain patterns and layout

After gluing up the panels, I had some trouble getting everything level and (horrors) the table top shrank to less than 7/8” and was not so even. So, I cut the top apart, resawed some 1/8” veneer from other boards, glued the veneer onto each board to bulk up the width, and then did another glue-up for the table top. This time everything came together the way I wanted.

The next step was to cut the tabletop to size. I made a template from MDF using a trammel for the semi-circle ends, rough cut the table to size with a jigsaw, and then used a router with a flush-trim bit and the template to bring the table to size. Finally, I routed a bullnose edge around the table.

Turning to the aprons, I resawed 8-foot long plys that were 3-1/2” wide and 3/16” thick. Before cutting the plys, I had some trouble getting the long board jointed flat so I built extension tables for my jointer. After cutting the plys, I ran them through a drum sander to clean them up and reduce them down to 1/8” thick.
Next, I bent the plys on a form to make the apron. I built the form on a plywood base and used 6 layers of ¾” MDF. I carefully shaped and faired the first one. The second layer was roughly cut, glued and screwed onto the first layer, and then flush-cut with a router. I repeated that for the successive layers and then wrapped the form in packing tape.

I selected the show plys so that the grain would look continuous around the table and used West System epoxy and pretty much all my clamps to lock the plys onto the form. It got a bit tricky and panicky as the epoxy was slipperier than I’d expected so the plys slid around a bit as I was clamping them to the form. Fortunately, I had enough open time with the epoxy to get everything in place and clamped tightly.
To give the eye a place to rest at the bottom of the apron, I added a bead along the bottom of the apron with a beading bit and router.

I attached the legs to each “corner” of the apron with bridle joints and so needed to cut shallow notches in the curved part of the aprons for the legs to slot into. I finally settled on using two jigs: one to support the curved apron and one to support a trim router.

Next, the legs. The blanks were 2-1/2 square, and I used riftsawn pieces to keep the grain relatively straight on all four sides. The notches in the top of each leg (to slip over the aprons for the bridle joint) had to be 3-1/2” deep. The first 3” of the notch were cut at the table saw using a tenoning jig. The last bit of the notch was cut at the bandsaw, starting with straight cuts to define the rest of the edge of the notch and then curved cuts to remove the waste.

The legs are tapered on all four sides. I started the taper about an inch below the bottom of the apron, with the legs tapering to 1-1/2” square at the bottom. Easy to do with a tapering jig on the table saw.
Legs and aprons

The legs were readily glued to the aprons. I spent some time aligning the aprons on the underside of the tabletop (just enough springback in the aprons to make this a bit fussy). Once aligned, the aprons were trimmed to length. The next step was to attach the aprons to tabletop halves using a combination of figure-8 connecters along the sides of the table and shop-made blocks for the ends of the table where a figure-8 connector wouldn’t allow wood movement in the right direction. Finally, to prevent racking, I added a heavy block behind each leg on the underside of the table that reinforced the connection between the leg and the apron.

To accommodate a couple of leaves, I made extension slides by encasing heavy-duty steel drawer slides in mahogany so they would look, at least on a casual inspection, like wooden extension slides. I liked the heavy-duty slides for their strength, and I think a couple of people could sit on the table without causing any problems (though I haven’t tried that yet!). The slides were screwed to the bottom of the table halves with elongated holes (except for the hole nearest the middle of the table which was just directly screwed in.) For the leaves, I matched the apron design. To line up the leaves and table halves, I added brass table-leaf alignment pins.
Assembly complete (note the support blocks that strengthen the joint between legs and apron)

All that remained was to finish the table. I decided that I’m too old to wait for the mahogany to darken on its own so decided to add some color. After doing a raft of sample boards, I started with a water-based dye (using a mix of TransTint reddish brown and medium brown) and sealed it with shellac. Next, a coat of Antique Walnut General gel stain used as a glaze to make the grain pop, and another seal coat of shellac. Once that had dried, I put on four coats of General Arm-R-Seal, and then rubbed it out after about a month. I think the multi-layer approach with dye and stain provided a rich, deep finish. Of course, I hit some bumps here too. The first attempt at dye and shellac worked fine on the legs and aprons but didn’t look right on the top. The color was blotchy and the shellac didn’t level out all that well. So, I sanded off the finish on the top and redid the dye followed by a thinner cut of shellac. The second time was the charm. The only other tricky thing here is that I had to remove the tabletop before finishing so that the finish wouldn’t lock the extension slides and aprons to the tabletop. Once the finishing was done, I added brass table-leaf fasteners from Lee Valley.

In the end, I was very happy with the table. Truth be told, the project took about two years from start to finish given the amount of time I could dedicate to it (and the number of steps I had to repeat when I wasn’t happy with how something had turned out). It was a lot of fun (with moments of intense frustration), and I learned a lot of new skills along the way, especially getting over each bump in the process.