

Helpful tip for curved staircase hand rail.

By Brian Hughes

I recently did a curved staircase railing that was a little unusual. It was made up of three parts, wall mounted from the top, down over a knee wall, to a newel end at the bottom. Normally I would make the template right on the stairs to get the right arc and twist. In this case though the wall was so out of plumb that plan just wasn't going to work. Instead I took some brown wrapping paper and taped it to the wall all along the area where the railing would be. I marked off vertically at each tread 34" to somewhat guide me along the wall as I drew in the railing. I didn't just go from mark to mark but made a line that was graceful as it came down the stairs. This was very helpful because I could stand back and look at the line and change it as I saw fit. The building code for railing height is 34" to 38" vertically from the toe of each tread, which I maintained.

The template material I use is 3/16" x 1 1/2" flat strip which I hammer edge ways in a bending form right on the job. Hammer and twist until I get the bar to fit just exactly matching up to the drawing on the wall. I use 1 1/2" wide stock because it equals the building code for the space between the wall and hand rail. So when I'm back at the shop I can bend the real rail to fit inside the arc of the template and its just right.

The finished railing is 3/4" x 2" flat bar with a heavily hammered edge on top and a 1 1/2" half oval cap. This is a nice stout railing you can get a grip on! The arc is put into the half oval using a hydraulic press with special dies to avoid marring the edge. The half oval is then riveted to the flat bar, some in the shop some in the field.

There was some creative fastening to come up with as well, because naturally the builder didn't think about anything that was eventually going to be hung or set on the wall or stairs. The bottom stair tread on this job was hollow. My solution was to set in an "epoxy tube". I drilled a 1 1/2" hole through the stone and the plyboard and inserted a steel tube with a lag screw welded on the bottom to screw into the subfloor. My floor mount had a tang welded on it that went into the tube surrounded by epoxy. The newel plate then was fastened to the mount plate. It doesn't move.

As you can see from the photos I used some cast steel parts I purchased from a catalog. This was a tough decision to make as I hadn't used them before. I thought they were the best option to get the correct, French style look in a reasonable amount of time. I treated these pieces just as I would any other part: cut up, heat, bend, and make fit. They are covered with bronze gilders paste.

I would like to take this opportunity to thank my assistant, Mike Riemer, for making many of these parts for me. He has become a very talented artist blacksmith.

