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Hi Mike,

I have a few more details on the construction of the reproduction Thacher Calculator shown on http://www.sliderulemuseum.com/SR_scales.htm

I downloaded the scales from your website and had them printed on photo paper at Staples. The employees there were very helpful but a little confused when they first saw the scales on the monitor. They thought something was wrong and that they were just seeing a computer code. I explained what it was to be used for and one of them seemed genuinely interested. He was old enough to remember using slide rules in school. I had two sets of prints made just in case something went wrong my first attempt, and it did. At home I sprayed Krylon Crystal Clear on the scales to prevent smudging.

The slide or drum is a 4" outside diameter cardboard tube, 22" long with a 1/4" wall thickness. Larry from Marshall Paper Tube Co. in Randolph, MA helped provide the tubes and the wood plugs for the ends of the slide. I cut the drum scale to size, laid it out on the cardboard tube, and marked where I was going to start it so that the two ends would meet perfectly. I then sprayed 3M Super 77 adhesive on the back of the scale, lined it up with the marks I had made previously, and rolled the cardboard tube over the scale. I'd like to say it worked the first time, but I had to rip the scale off the cardboard tube before the adhesive set up because the ends had not lined up. Fortunately the second attempt went perfectly.

The outer scale set, or envelope, was a little more difficult to make. I cut two 1 1/2" lengths of 4" inside diameter tube to act as the rotating ends. They were too tight a fit so I made a cross-cut in them to allow them to spread open. A carpenter friend of mine cut the bars for me from pine. They have a triangular cross-section with two 3/8" sides and a 1/4" inch base.

I then cut out the scales for the bars and glued each one to one of the pine strips again using the 3M adhesive. I found they folded over the top of the bar more easily if I lightly scored the center of the scale lengthwise with a razor. I then glued a 3/16" wide strip of felt to the bottom of each bar. This would prevent wear on the drum scale and provide some resistance to hold the drum in place during use.

The last step was assembly. I covered the drum with wax paper and slipped the two outer rings over each end, clamped them in place, and carefully lined up and glued each bar in place using CA adhesive. The bars were originally about 24" long. I cut each one to length, leaving a little extra on each end, and then sanded them to the exact size using a miter sander.

Lastly, I built a stand from 3/4" pine and I now have a new Thacher Calculator that is just as accurate as the original. The whole project took just a little over a month, with maybe a total of about 20 hours of work. My wife and co-workers all think I'm nuts, but for a slide rule collector like myself it was a lot of fun. Even my two sons (ages 16 and 13) finally admitted it was "kind o' cool."

Enjoy,

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