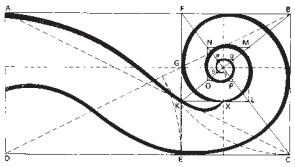

Maker's Bench

A Labor of Love at First Sight

by Angela Thompson

When I was in the eighth grade, I remember the day my mom took me to our local violin shop so I could pick out my very first violin. I gazed across the violins hanging on the wall and knew which one I wanted within seconds, before I even put it under my chin and drew the bow. What attracted me to this particular fiddle? The varnish.

I think many players have a similar experience at some point in their lives. Varnish is arguably the first thing that our eyes are drawn to when looking at an instrument. It may be the color or the way it has been antiqued. When I was younger, I loved the look of dark varnish. The violin I chose was a deep, almost purplish red, if you can imagine. I thought it was so beautiful and while I liked how it sounded, I loved how it looked.

In May, I finished my second violin. I am so proud of the hard work I put into every step of the construction process; it was difficult and very time consuming and I enjoyed tackling all the new challenges. But, to my surprise, the greatest challenge of all was varnishing. I have been reflecting on the details over the summer and would like to share what I learned.

There are two types of varnish: oil and spirit. Spirit varnish is generally alcohol and lac based and oil varnish is made from resin and linseed oil. I used oil varnish for my violin. We actually make our own oil varnish at the shop, which consists of cooking down a larch turpentine until it becomes hard and then combining it with hot linseed oil until it has the desirable consistency. The intensity of color is determined by how long and at what temperature you cook the resin, but slowly (about 20 hours) and at a moderate temperature (220-240 degrees Celsius) tends to yield a nice medium golden color. Cooking the resin longer will result in a darker color.

Before beginning the varnishing process, I let my violin sit in the light box to tan for several weeks. It darkens the wood a little, so it doesn't look too bright under the varnish. We also applied a coat of potassium nitrite that darkened the wood even more so overnight.

One of the most crucial steps of varnishing is the first coat of what is called the "ground." The ground is what you often see most in antiqued instruments—it is the golden areas where varnish has been wiped away to create patina. The ground is the oil varnish we made thinned out with a mineral spirit—in this case we used Gamsol. The ground seals the wood to protect any varnish from seeping in and "burning," which looks exactly as it sounds—a dark blemish that appears as if the wood was scorched. It

Angela's Violin

is also possible to cause burning from the ground, so the procedure involves wetting the wood with Gamsol before applying the ground, and wiping it off after so none is left sitting on the surface.

What makes this step so tricky is knowing which areas are most susceptible to burning and making sure to not leave any excess, ensuring it looks even without obvious dark or light spots. The areas that needed the most attention and care were the top, top edges and anywhere with endgrain, where potential bad split and endgrain are very absorbative. I ultimately applied four coats of ground, each taking approximately 1.5 to 2 hours to complete. With each subsequent coat I worked out any unevenness.

The color of varnish you see on any particular violin is a result of the varnish itself and what, if any, pigments are mixed into the varnish. There are premade varnishes you can buy from suppliers that have various colors such as amber, golden brown, dark brown, golden yellow, among others. When you make the oil varnish yourself, you have some idea of whether it will be light or dark based on how long you cook the resin, but I am learning that no two varnishes cooked at the same temperature and for the same time will look the same. In order to achieve the color you want, you can add pigments to the varnish. I mixed a few different lake pigments: golden yellow, brown-red and black. There was no set method in creating the color that I wanted. I mixed the pigments into the varnish and applied a small amount on my violin to check. When it wasn't quite right, I simply adjusted the color with more pigment. When I liked the overall color but wanted it to be darker, I added a little more black for intensity.

Applying the varnish was fun and exciting. I used a combination of brushes, prosthetic sponges and the palm of my hand, being mindful of how much I was applying and making sure it wasn't pooling anywhere. It was especially satisfying varnishing the top and back. I smeared the varnish all over and patted it out evenly with my hands. Once the entire violin was covered, I put it in the light box for a day or two to dry completely before applying the next coat. Overall, I applied six coats. Four were over the entire instrument, and two were partial coats on the ribs and scroll where it was lighter and needed more color to catch up.

After achieving the perfect color for my violin, there were several steps I learned to do for the first time. The following steps helped create depth and interest to the varnish. First, I did some shading by wiping the whole instrument down with alcohol

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(the solvent for varnish) to tone down the glossy look and lighten the edges and areas that naturally get worn. Next, I airbrushed onto the entire instrument a mixture of gum arabic and water in order to create what is called "crackle." The gum arabic is lightly and slowly sprayed onto the instrument and then dried with a hair dryer. With heat, the gum arabic reacts with the varnish, creating texture. What I was looking for was a slight puckering, or tiny craters and peaks. Some instruments have a very dramatic and obvious crackle, but I was going for a more subtle look on my violin. This was important for the next step.

My favorite, and perhaps most perplexing, task was developing the patina. In this step, I had to make "schmutz." The schmutz is a mixture of black, dark green and yellow oil colors with linseed oil. The significance of adding schmutz is to create an understated dirty look. Essentially, I smeared black paint all over my violin. The paint settled into the grain lines and those low spots formed from the gum arabic. I wiped it over the violin evenly, let it sit in the lightbox overnight, and finished removing the excess the following day. It took a lot of attention to detail, making sure grain lines in the top weren't too dark or too light. I used a pointed stick wrapped in a paper towel so that I could remove the dirt with precision. I even touched up the lighter grain lines by painting them darker to match. It added such a beautiful quality to the look of the varnish and of all the details, I love it the most.

At this point, the overall look of the instrument is finished. From here I just had to spray on shellac to protect the varnish and build a base for French polishing. French polishing has a learning curve. The goal was to polish out most of the corduroy on the top and smooth and shine the rest of the violin. I had learned how to do this in school but was quickly reminded how tricky and laborious it is to do it right. You take a cloth with built up shellac and benzoin, add just the right amount of alcohol and oil so that the cloth glides across the surface without tugging. Ideally, it moves the shellac around until you reach the desired smoothness. This final step was completed over multiple days because the alcohol added to the cloth softens the varnish as you polish. I could only polish in one area for so long before needing to give it time to harden again. By the end, my violin glimmered beautifully.

I learned considerably more about varnishing for my second violin than my first. All of the steps after applying the colored coats were new to me this time around, and it made a world of a difference. Not only did I feel I achieved an attractive color, but everything I did after varnishing created a finished look that far exceeded my expectations. Altogether, I spent about a month from the time I started the ground and finished polishing, although, naturally there were days I was unable to work on it. I am incredibly grateful to my teacher, David Folland, who took countless hours of his valuable time to show me all these specific procedures in fine detail. And there is so much more detail I just couldn't fit into this article. There have been entire books written on varnishing techniques and luthiers continue to study the art and find innovations.

I know my tastes in varnish have evolved since I was a young girl picking out my first violin, but I'm confident that one day (and hopefully soon!) someone will look at my violin with the same excitement and awe and know that it's the violin for them.

Angela Thompson is a violin maker, repairer and player. She is a 2016 graduate of Belmont University in Nashville, Tennessee with a Bachelor's degree in violin performance, and a 2020 graduate from Minnesota State College Southeast in violin repair, where she is now a substitute teacher. Angela is a member of the Violin Society of America and currently works under the instruction of acclaimed luthier David Folland in Northfield where she repairs instruments and continues the study of violin making.