Schaff Piano Supply Company Presents:

Lacquer Stick Work

Basic Techniques

By Chuck Behm

Finish / Case

Lacquer Stick Work*

-Rationale-

Lacquer stick work is appropriate for some repairs in case work, less so for others. Small gouges in the middle of flat areas of the piano, such as the sides of an upright, are best repaired with lacquer stick. Damaged edges, such as along the back of the sides, may be filled with lacquer stick if the area to be repaired is small, but exposed corners, such as the front of the arms of the piano, should not be repaired in this manner, in that the repaired area will be prone to breaking later if bumped.

The development of a skill in the repairing of case damage using lacquer stick techniques will help one turn out a more professional looking piano restoration. By being able to make repairs that are either invisible or at least hard to spot, the refinisher will be able to more closely approximate the appearance of a factory job.

* Note: A version of this article first appeared in the February, 2009 issue of the Piano Technicians Journal.

-Basic Procedures-

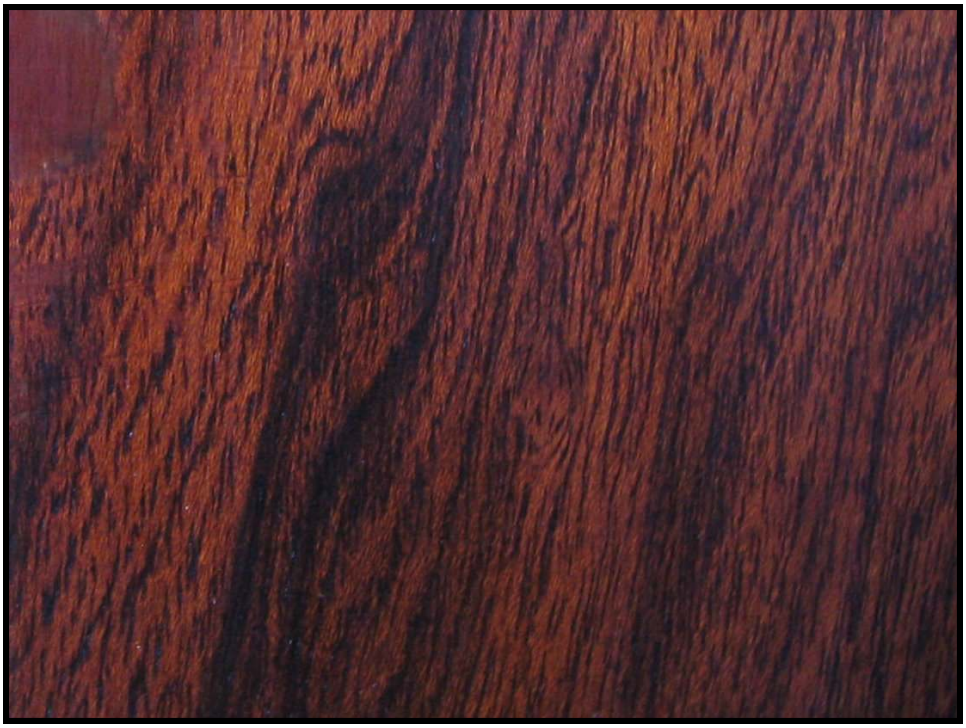

Photo 1: Blending in is the key.

The easiest lacquer stick work involves filling small, round gouges (those too deep to sand out without going through the veneer) with a single color. If done well, these are very hard to detect once the finish is applied (Photo 1). Select a burn-in stick (Cat. No. 407-001 to 873) by comparing its shade to a stained sample of the actual veneer of the case. Opt for matching the darkest shade of the stained veneer. With your electric burn-in knife (Cat. No. 80) set on a medium heat setting, melt off a bit of the end of the lacquer (burn-in) stick. To use your electric knife effectively, it's best to couple it with a heat control unit (Cat. No. 906). Plugged directly into your wall outlet, or with the variable control on the highest setting, the lacquer will melt quickly, but will become too hot and will boil, creating bubbles in the liquid lacquer that are very hard to deal with. It's much better to set your variable heat control on a moderate setting and have the lacquer melt a little more slowly, but without bubbles. If there's any bubbling of the lacquer, turn your heat setting down further. Now, with the melted lacquer on the blade of the burn-in knife, slowly fill in the gouge, starting on one side and allowing the liquid lacquer to flow in to the bottom of the gouge. Only when this is done, fill across to the other side.

The patch in the photo above, by the way, is in the top left corner-visible, but not obvious.

What you want to avoid, if at all possible, is a bubble in your lacquer. When a bubble does form, it can be a real headache to get rid of. You can poke it with the point of your burn-in knife and try to fill it in, but often it will seem to come back again and again. Better to just go slow, and avoid them altogether.

Fill the patch with a little excess, so that it's slightly convex, and allow to cool for a few minutes. Then use your electric knife with the broad, flat tip to melt off the top of the patch level with the veneer around it. To do this, place your knife with the blade at about a 45 degree angle to the work on the side closest to you, and slowly push the blade of the knife across the patch away from you, letting the edge of the blade melt the lacquer as it goes. The excess will roll up in front of the blade (Photo 2). With the extra lacquer piled up in a line on the opposite side of the patch, allow it to cool again. It may be then easily chipped off with a thumbnail or a chisel.

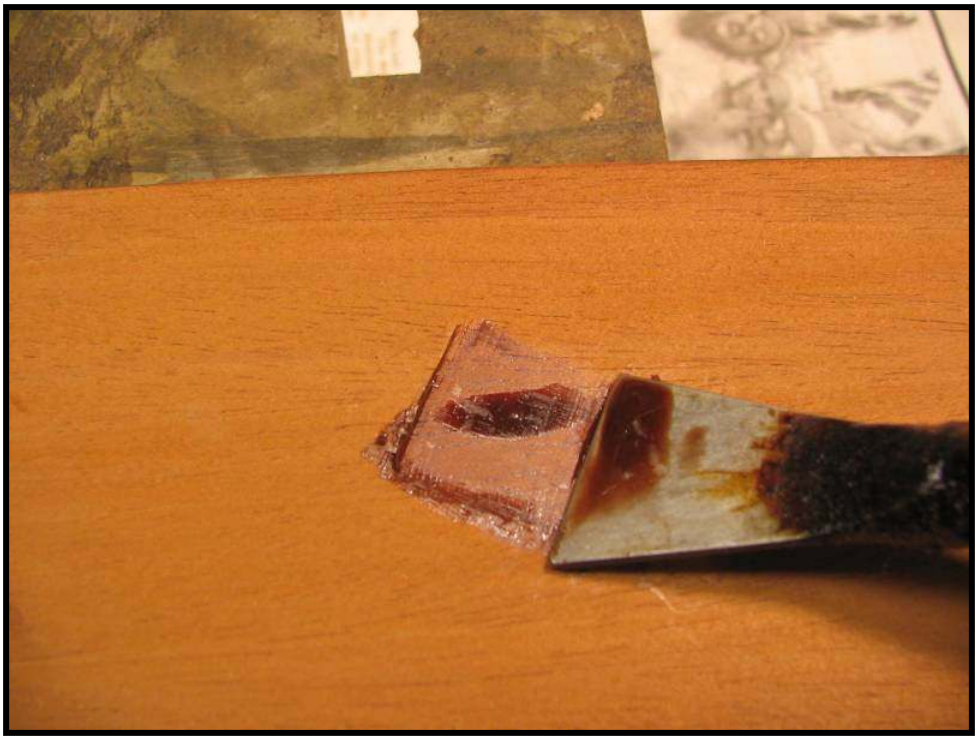

Photo 2: Slowly work the blade across the patch

With the patch roughly level, sand it smooth. When sanding a lacquer patch, always sand by hand. A palm sander will remove material more quickly, but will heat the lacquer up with the friction produce to the point where it will start to melt again. Begin by sanding with 150 grit, going in one direction only, and at a very moderate pace. Stop frequently to blow on the patch to keep it cool. Again, if you're too aggressive, even when sanding by hand, the lacquer will begin to melt.

When choosing the color of lacquer stick to use, keep in mind that the patch needs to match the final color of the piece once it has been stained. Don't match the lacquer stick to the color of the raw wood. When you stain the veneer, the lacquer stick color will remain the same, leaving it lighter than the surrounding veneer. Therefore, stain a test piece, such as one of the keyblocks, to use for matching colors.

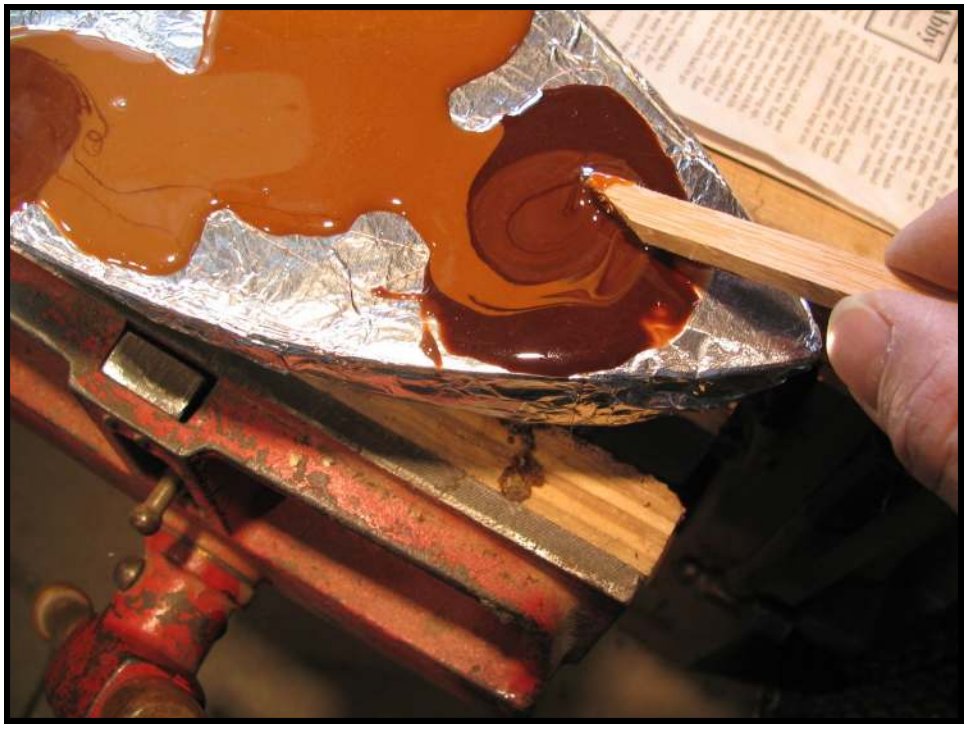

Photo 3: Using your flat iron as a palette for mixing colors

If the desired shade doesn't quite match the burn-in sticks that you have in stock, mixing colors may be the solution. Cover an old steam iron with foil, and setting it on a medium temperature use a vice or other support to hold it with the flat side up. Break off pieces of lacquer stick of you wish to mix, and let them melt on the foil (Photo 3). Experiment with combinations of colors to attain the hue you are after. Once you've determined the proportions needed, mix an appropriate quantity. Instead of using it immediately, you'll find it easier to let the lacquer cool and harden on the foil. Peel the foil back, and you'll have chips of the desired color that may be broken off and reheated with your electric burn-in knife for use.

More difficult to repair are longer gouges which run across grain of various shades. If a monochromatic patch is used, it will be obvious, no matter what shade is selected (Photo 4).

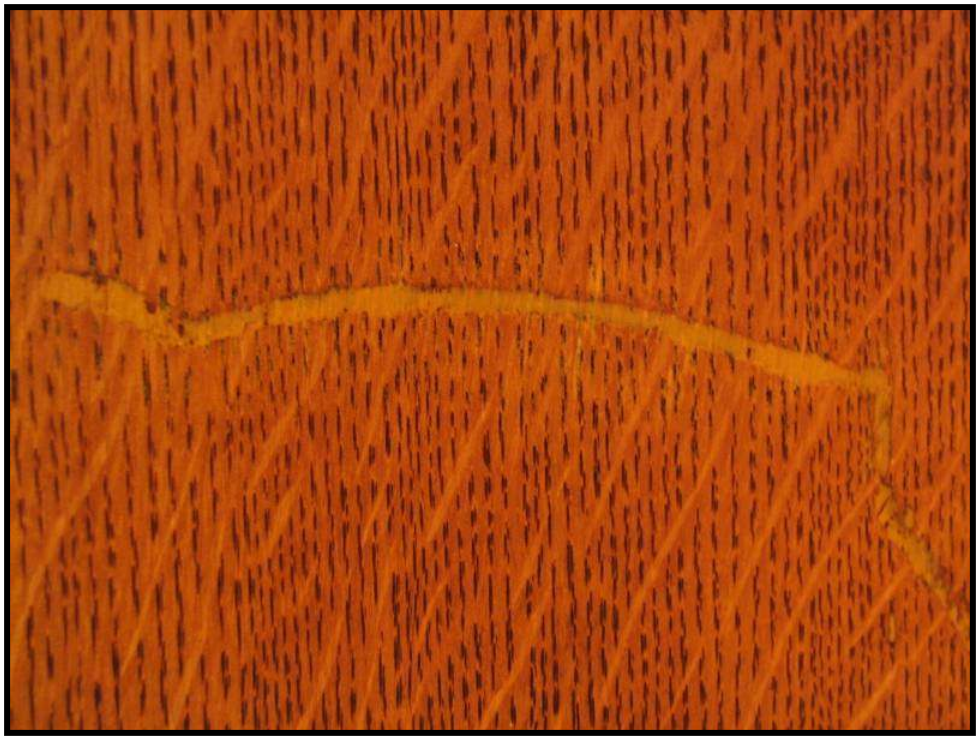

Photo 4: Hard to disguise gouge

A better repair is to fill the gouge with several different colors of lacquer, imitating as much as possible the shades represented in the veneer being repaired.

While your burn-in knife might be used for this repair, you'll find that using an Ungar heat gun (Cat. No. 416) makes it easier to obtain satisfactory results. Again, choose your colors based on a sample area of stained veneer. Don't stain the actual repair site yet, just take stock of what shades are represented. Taking the burn-in sticks of the colors you need, use a mallet and break an appropriate amount of each stick into powder. If you break the sticks on a board with a cloth covering the crumbling lacquer, you will avoid having fragments of the brittle sticks fly about your workbench. Store the powdered lacquer in small, snack-sized baggies, each labeled with the stick number and color.

If the gouge is a large repair area, prepare the site for filling by drilling a grid of 1/16" x 1/8" deep anchor holes throughout the area of the repair site (Photo 5, next page), and by removing any loose splinters of wood.

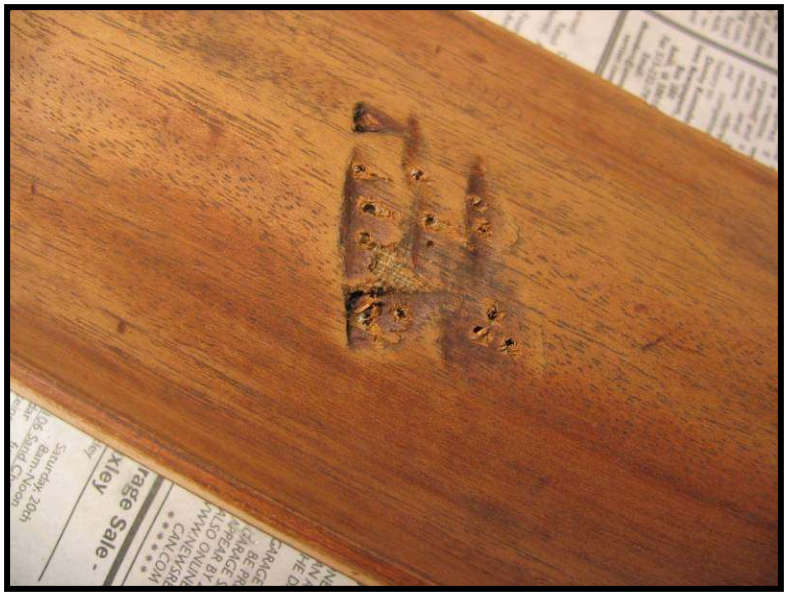

Photo 5: Badly damaged fallboard with anchor holes drilled

Next, pack the gouge with the various shades of crumbled lacquer that you've prepared, following the shading of the veneer that you are repairing. Heap the area slightly rounded, as the lacquer will sink down slightly as it melts, so that you can sand it down flush and smooth to the surrounding area.

Start with the heat gun back far enough that the air movement doesn't blow the lacquer chips from the repair site. As the chips begin to soften and stick together (Photo 6), move the gun closer, but keep it far enough away from the veneer to avoid scorching.

Photo 6: Lacquer begins to heat up

As the area heats up, wave the gun slowly back and forth across the repair site, until the crumbled lacquer melts and starts puddling in the gouge (Photo 7).

Photo 7: Melting lacquer chips start to bead up

You'll notice that the chips bead up somewhat. If you take an 8" piece of small diameter piano wire with a becket-sized bend on the end, you can draw it several times through the melting beads in the direction of the grain to help them run together. Once the lacquer is thoroughly melted (Photo 8), with all the low spots filled in, stop and find something else to do for a short time to let the lacquer cool completely before going any further.

Photo 8: Damaged area completely filled

Photo 9: Sanding off the excess lacquer

Once the patch has cooled, hand-sand the patch and surrounding area, starting with 150 grit paper (Photo 9). For a curved surface such as this, use the paper folded over, without a sanding block. Go slow to avoid heating the lacquer to the point where it begins to melt.

Photo 10: Sanding complete

Sanded down flush and smooth, the patch stands out next to the raw wood (Photo 10). Notice the lighter and darker bands of lacquer. This effect would be very hard to achieve with a burn-in knife. Notice also that when sanded, the light and dark bands in the mahogany are nearly impossible to make out. That's why

the colors for the patch need to be mapped out before any substantial sanding has taken place.

Photo 11: Staining helps blend in patch

With the surrounding wood stained, the patch blends in well (Photo 11). Compare again to the 'before' shot (Photo 5). The dark, triangular blemish in the upper left hand corner stands out too much for my taste and could be done over with the burn-in knife. (Using the heat gun again would melt the other section as well, undoing what's been done.) Perfection in this type of job, however, is very hard to achieve, in my experience at any rate. The perfect job would be an 'invisible' repair, and sometimes that's just not possible. Recognizing the point at which you've done your best is important – otherwise you'll be continually second-guessing yourself, always wondering, "If I did it over again, would it turn out better?" In this case, I say "No, most likely not!" and move on. A redo in this case would involve more sanding, with the very likely possibility of going through the veneer, making things worse instead of better.

The fallboard on which this work was done came from a piano over a century old when the repair took place. A Craftsman tool chest (fully loaded) tipped over onto it while being transported in the back of a pickup. The piano was secured, the tool chest was not. Life happens.

Chuck Behm

Tools and supplies:

For your convenience, all the tools and supplies necessary to complete this repair are listed with corresponding catalogue numbers.

Tools:

Electric burn-in knife ……Cat. No. 80
Heat control unit ……Cat. No. 906
Ungar heat gun……Cat. No. 416

Supplies:

Burn-in sticks..... Cat. No. 407-001 to 873

Important note: Ordering information is given for the use of Schaff account holders only.

Notes on Procedures