Anyone who was following the posts for this piano's work will likely have wondered what ever happened to the piano.

Well, as is so usual, the closer we get to the end the less time we have to keep a running blog record of the work… sometimes we can hardly get an after photo before the item is heading out the door. So, this is one reason for the lack of updates – the other reason is that once a project is completed we tend to get too busy to complete the updates.

But we wanted to be sure to at least wrap this series of blog posts up… The piano has long been back at the customer's home but we will quickly run through the rest of the work.

So let me catch up from where the last post left off.

The lid that was patched in post #2 turned out to be in much worse shape than I expected. Remember the lid was glued to the top and not able to be removed. I found those cracks in the lid actually ran the entire depth of the lid and that sections of the back lid were actually not glued down. This would allow too much movement in the wood.

I could try pouring a very low viscosity epoxy into the cracks and hope it would take care of the problem – but I tend to worry about such methods. There would be no guarantee it would reattach the lid – and if the lid was not properly repaired a finish would constantly fracture along those weak areas.

I chose to remove the old rear lid and make a copy from good solid wood. This would be a lot

more work – but it would be the proper way to deal with it.

After taking measurements of the lid, we removed the old lid (remember this is only the rear lid). Care is taken to be sure the piano isn't damaged.

The back lid is removed from the piano.

Not exactly pretty, but it is off with no real damage to the piano itself. We then clean up the top of the piano to remove all the splinters the lid left behind.

A new back lid is made and we re-attach it. To prevent any future technician the headache of prying the rear lid off we chose to use another common method. The new lid is held in place at the back by metal clasps (fastened under the lid where they are not seen) and two screws near the front. The two screws are located so they will be hidden beneath the rubber bumper buttons for the front lid to rest on when it is open.

The soundboard received a coat of shellac. The plate was finished in two colors (black and gold) just as it originally was.

The upper plate is finished in antique gold while the lower plate in a gloss black.

Various veneer patching continues…

After patching a spot on the keybed, a sealer is applied to the seem. If I am coloring raw patches I will tend to

seal the seem to prevent darkening.

For those who are curious… Some may wonder why all our patches are curve, triangle, or swoop concave / convex.

Patches need to avoid as much cross grain seem as possible. A 90 degree angle across grain will be easily noticed and look horrible. By angling the seem the patch will match up cleaner and the eye will move over the seems with less attention.


After matching the color and graining – it is a pretty good patch.

We may not have mentioned that the piano has a walnut cabinet.

There are times when it is not always easy to know what species of wood one is working with. If the wood has unusual figure and/or has been stained the appearance can be misleading. Even experts in wood identification warn that many wood species can appear similar and so appearance is not the best way to identify wood.

We can be pretty sure the piano is walnut by examining the grain and pore patters under magnification. Below are a couple of 10x magnification of a veneer and then a piece of solid wood.


A 10x magnification of a veneer glued to a substrate. The horizontal line is the glue seem.


A 10x magnification of solid wood.

By examining the pattern of pores and the various characteristics of a wood, one can identify the species from which it comes.

We purchased a number of sheets of walnut burl.

Walnut burl veneer on the right, compared to the walnut cabinet on the left. It isn't a perfect match but since we are patching comparatively small areas we can pick out the best matching areas within the veneer.

Once all the patches are completed and all the loose veneer (which was a lot) was re-glued it was time to finally put the finish coats on the piano. We sprayed a clear nitrocellulose lacquer.

Once the pores are filled and the finish leveled, the instrument is ready for a few final coats… but first the new maker's name decal needs to be attached to the fall board.

The old decal was damaged with age.

Piano parts suppliers generally carry a selection of decals for various piano makers. After a search we discovered that none of the suppliers carried the a matching decal. This would mean we would need to design a custom decal. Before the refinishing process began we had carefully recorded the various measurements of the old decal (i.e. location on fall board, size, color, photos of the text).

We used a pretty technical art software to recreate the decal. The general steps were to first try to locate an existing font that is as similar as possible – which we did (thankfully we had a very close copy in our database of fonts). In the art studio we create the decal in a format known as vector graphics. Vector format allows us to repeatedly modify the appearance, color, and size of the graphics without compromising the clarity and quality of the final appearance (as apposed to pixel graphics which deteriorates rapidly when modified). By layering a reference photo of the original decal behind our work we were able to make an exact copy.

An example of our custom decal.

We then upload the digital file to a supplier and in a few weeks we get a usable decal returned by mail… and don't I wish we had a photo of that. Sorry – but it is just the way it is. You start looking at the clock and the camera get set down.

So, to continue (sorry)…

The entire piano's cabinet is leveled (this is a process of sanding a finish to remove any blemishes such as dust nibs, etc.). Then the final coats are applied, resulting in a very glossy finish.

We allow the finish to cure long enough to achieve the hardness needed and then the cabinet is rubbed out. This is a process of using fine abrasive powders to adjust the sheen (reflectivity) of the finish. We rubbed the piano to a sheen slightly higher than a true satin. This would allow for a bit of nice reflection an clarity while avoiding a high gloss that can become unpleasant to the eye.

The final step was to give the entire piano a wax polish. Wax polishes are the most protective form of polish. We make our own paste wax which is a blend of 100% beeswax in a purified wax solvent.

The common furniture polishes sold in stores provide very little in scratch protection. They are made mostly of petroleum distilled oils (even many of the "lemon" polishes). Their

biggest contribution is to provide a pleasant cent to the room as they slowly evaporate off the surface.

A real paste wax polish is quite different. It provides a very thin layer on the finish that can last for a good while. That thin layer of wax will act as a lubricant between the finish and things sliding across its surface or banging into it.

So, let me describe the method I use for applying a paste wax.

The first step is to have a number of rags on hand. One rag will be used for applying the wax and the others for polishing up.

Place a “blob” of the paste wax in the center of a rag and bind it up to form a little rag ball. I place the excess rag material behind the ball or between my fingers. The ball itself (smooth side down) is held basically the same way a french polishing pad would be.

The rag ball is then wiped over the surface of the furniture (apply pressure to the back and sides of the ball as needed to force the wax through the cloth). As you wipe over the surface you should see a vary thin “oily” trail being left behind – anything more is too much and is just wasted. Keep wiping until a large workable area is covered (no need to worry if you can’t do the entire surface at once – it will all blend together after polishing).

Now that your surface as the paste wax applied, wait until you notice the “oily” surface is turning into a dull haze (this means the solvent that kept the wax soft is almost gone). Once the dull hazy has appeared begin vigorously polishing the surface with a clean rag. A very pleasant, mellow shine should develop.

If the surface seems to just keep smearing then either too much wax was applied in which case you need to keep polishing until you get the excess up (change rags as needed – and apply less wax next time)… or your polishing rag may have accumulated to much wax and should be changed.

If you find the wax has hardened to the point you can't wipe it off – simply apply another coat of wax and it will re-soften the previous.

That is all there is too it… it is good exercise and really does protect the furniture. In a few weeks if you notice the furniture looks a little dull – get a clean rag and polish it up to a shine. There is no need to apply more paste wax until you can't bring up a shine with the clean rag.

Some people claim that wax with smother the wood, clog the pores, prevent the finish from breathing (as a refinisher I have never seen a finish breath), or whatever else. The reality is – neither the wood nor the finish need to breath; the wax does not clog anything, and (again the wood and finish do not breath) will not smother anything. In fact when a new polish of paste wax is rubbed on, it melts the old wax and the two combine to form a new thin layer… wax does not build up.

If wax were a bad thing to use – then why do people pay so much for antiques. Most of those antiques received regular paste wax polishing back in the day when it was the most common polish available.

So a few photos of the before and after…

A before photo of the entire piano.

A photo of the completed piano.

And to wrap up…

We try to provide the customer with a digit album so they can get an idea of the work that went into their restored piano. You can view the album by following the blog to the next entry. Once the album page has loaded you have an option to break out of the blog page and view it in stand alone mode on its own page.