



#### About the Presenter

Kevin Hancock apprenticed with a master restorer Gerald Haggerty from 1974-1976. This paved the way for him to operate his own shop specializing in piano refinishing and restoration with a very personal touch. Mr. Hancock's clients include musicians with The National

Symphony Orchestra, The Baltimore Symphony Orchestra, The Peabody Conservatory, The Kennedy Center, Steinway & Sons, and The Smithsonian Institute. Kevin has been an associate member of the Piano Technicians Guild for over 25 years and is an active member in the Professional Refinishers Group. He has lectured at the National Wood Finishing Technology Conference at The Dakota County Technical Institute in Minneapolis, Minnesota and has written many articles for *Finishing and Restoration* magazine. He has also written technical articles for the *Piano Technicians Journal*. Kevin lives in Monrovia, MD with his wife Diane, and their two children, Katherine and Robert.

Kevin E. Hancock  
3601 Kemptown Church Road  
Monrovia, Maryland 21770  
(301) 972-3149  
kevinhancock@verizon.net  
www.hancockrestorations.com

#### Suggested Readings

The New Wood Finishing Book, [Michael Dresdner](#)  
Great Wood Finishes, [Jeff Jewitt](#)  
Understanding Wood Finishes, [Bob Flexner](#)

#### Sources of Supply

Industrial Finishes Ltd. Rockville, MD  
301. 424-3033 [www.industrial-finishes.com](http://www.industrial-finishes.com)  
Finishing lacquers, dyes, pigments, sandpaper, steel wool  
Homestead Finishing Supply Cleveland, OH  
216. 631-5309 [www.homesteadfinishing.com](http://www.homesteadfinishing.com)  
TransTint® dye colorants, pigments, steel wool

**ROCHESTER** Piano Technicians Guild 49th  
2006 Annual Convention & Technical Institute

June 21-25, 2006 Rochester, New York

## *Building a Formal Piano Finish*

*By: Kevin E. Hancock  
Washington, DC Chapter, PTG*

There are different approaches to obtain a formal closed pore finish. This is a trusted and reliable system for achieving consistent results using a traditional lacquer finishing system.

The following is a presentation of step panels covering most the stages of finishing, including wood preparation, dye and pigment colorants, sealers, glazes, toners, shades, and topcoats. The main collection of panels are cut from the same piece of mahogany plywood stock, as to show the various possibilities and options for finishing.

### **Panel 1**

We begin with a raw mahogany panel sanded with 150-180 grit garnet or production sandpaper. Use a cork or rubber block as a paper backer. A clean, oil free surface is imperative for good finish adhesion.

### **Panel 2**

Apply the first mahogany colorant by spraying the panel with an alcohol based metalized dye (TransTint™). Mix one ounce of concentrated dye with one quart of denatured alcohol. Behlen's "Solarlux" is a similar type of pre-mixed dye.

### **Panel 3**

Apply a wash-coat to the wood. Mix a lacquer vinyl sealer or shellac with 75% thinner for a wash-coat to be sprayed. The wash-coat seals the dye to prevent solvents in the filler from lifting the dye out of the wood, while allowing the filler to color only the pores of the wood. It also makes for a smoother and easier removal of the excess filler. A mix of ½ pound cut de-waxed shellac also makes for a good wash coat.

### **Panel 4**

This is a paste filled panel. The filler should be mixed to the desired color of the pores in the wood. In these samples, van dyke brown, burnt umber, and a little red colorant are added to the filler. Oil, Japan, or UTC colorants can be used for coloring oil based paste filler. Apply the filler to the board with a brush. Trowel off the excess with a 4" putty knife or a rubber squeegee. Allow about 5-8 minutes for the filler to flash and turn pale. Using burlap, wipe across the grain direction of

### **Points to remember**

- Always start with clean wood and make sure all machine marks and coarse sanding scratches have been removed.
- Allow all of your materials to dry the appropriate amount of time.
- Color your paste filler to accentuate the wood grain.
- Use vinyl modified lacquer sealer or de-waxed shellac instead of sanding sealers with stearates.
- Build your finish with clear gloss topcoats.
- When adding graining, toning, shading, or glazing, do it in moderation to maintain clarity and assure good finish adhesion.
- Sample test your mixes of shades and toners.
- While sanding between coats is not always necessary, it is often helpful in order to see and remove the imperfections in the finish surface.
- Topcoat with desired sheen if rubbing is not anticipated.
- Give the final coats plenty of time to dry and cure before rubbing.
- When rubbing out the finish, properly remove the imperfections and grain shrinkage with the appropriate grit material.
- When bringing up the sheen, use a sensible abrasive schedule to assure a uniform sheen. Avoid jumping from coarse materials to fine compounds.

### **Panel 19**

This is a panel filled with multiple coats of sanding sealer and top-coated with clear lacquer. Notice the lack of clarity and the paleness of the pores. Because of the softness of the sanding sealer, the topcoats are more likely to crack in the coming years.

### **Panel 20**

This panel has a walnut colored dye applied as opposed to the mahogany dye.

### **Panel 21**

This is a mahogany panel with glaze added between coats. The pigmented glaze gives a warming effect to the finish. Glazing is very helpful in blending different types of wood.

### **Panel Birch 25**

This is a layered effect on birch. Having little grain to work with, detail has been added by striking out the grain streaks to try to match the mahogany panels. Begin with some brown grain streaks with dye on the raw wood. Next, spray a mahogany dye over the whole panel. After the first coat of lacquer, highlight in the additional grain with a pigmented oil colorant to strengthen and feather the grain into the board. Once top-coated, follow up with a uniform glazing over the entire panel and top-coated with clear lacquer.

### **Panel Birch 26 & 27**

These are birch panels with black grain added before dye. They were also sealed, glazed, and top-coated with clear gloss lacquer.

the wood to pack the filler into the pores and remove the excess filler from the surface. Once the excess filler has been removed, wipe in the direction of the grain with maroon scotch-brite™ to remove any remaining surface residue. Allow the paste filler 24-48 hours drying time before spraying the sealer coat.

### **Panel 5**

The next step is to spray one coat of lacquer vinyl sealer or shellac as the sealer coat. It is best to minimize the use of stearated sealer. While the stearates in sanding sealer are easier to sand, they do not make for a more durable or resistant surface to build a finish. Vinyl sealer adds more moisture and chemical resistance to the finish and is less prone to “grain shrinkage” in the future. De-waxed shellac like Zinsser’s “Sealcoat™” also makes for an excellent sealer. After application of the sealer, allow 45 minutes drying time, sand with 320 grit finishing sandpaper, and spray the first coat of clear lacquer

Once sealed, build the finish with clear gloss lacquer. Lower sheen lacquers have flatteners added that will reduce the clarity of the finish if multiple coats are applied. If a satin sheen is desired, and the board is not going to be rubbed, use satin lacquer only for the final coat or two. While building the finish, sand with 320 paper between every other coat of lacquer. A cork or rubber block is a great aide in these sanding steps to assure a flat surface. Sanding the coats of lacquer across grain between coats also helps to flatten the surface.

### **Panel 6**

This panel has been final coated with satin lacquer.

### **Panel 7**

This panel has a good build of finish and is ready for a thorough sanding before the final coat is applied.

### **Panel 8**

This panel has been sanded and sprayed with a final coat of lacquer. Spray a wet pass, allow it 5 minutes to dry and follow up with a second wet pass.

### **Panel 9**

In this panel, the finish has been sanded in preparation for a satin final rub. After at least a week of drying, begin by sanding the surface with 500 grit paper and work up to 600, 800 grit. *(Note that all the grain shrinkage and orange peel has been removed.)*

### **Panel 10**

This panel has been rubbed with steel wool to my personal favorite, satin sheen. If you plan to rub to a glossier sheen, it would be necessary to sand to a higher grit (800-1200) before rubbing with wool. Use 00 wool for a satin, and 0000 for a semi gloss sheen and rub with a lubricant like Wool Lube or Murphy's Oil Soap and water with the wool.

### **Panel 11**

This panel has been sanded from 500 to 1200 grit paper in preparation for a higher polish rubbing. After rubbing with steel wool, continue rubbing and polishing compounds to achieve a high polish sheen.

### **Panel 12**

This panel has the grain streaks highlighted with a dye brushed on before the whole panel was sprayed with dye. The additional colorant on the grain enhances the

woods grain pattern, without making it look like faux or painted grain.

### **Panel 13**

Black graining was added to resemble rosewood, before this panel was dyed like the others. Use a small brush for some of the finer detail and a modified 4" brush for the overall graining. Dip the brush in dye and draw the major graining lines.

### **Panel 14**

This panel was dyed with a slightly redder dye. (Clearwater Rosewood dye)

### **Panel 15**

Fuhr Water-Borne Filler was used on panels 15,16,17. This is different from the alkyd/oil paste filler in that it is a high solids acrylic resin based filler. On panel 15 the filler was applied in a natural tone, while on panels 16 and 17, a dark UTC colorant was added to the filler. These water-borne fillers dry much faster than the alkyd/oil fillers and can be top-coated in 4 hours.

### **Panel 16**

This panel was top-coated with a Target Hybrid Water-borne finish and rubbed to a satin sheen.

### **Panel 17**

As with panel 15, panel 17 was top coated with regular NC lacquer, rubbed to a satin sheen.

### **Panel 18**

This panel was filled with natural Alkyd/Oil filler. *(Note: Due to the lack of colorant added to the filler, the pores appear to be gray.)*