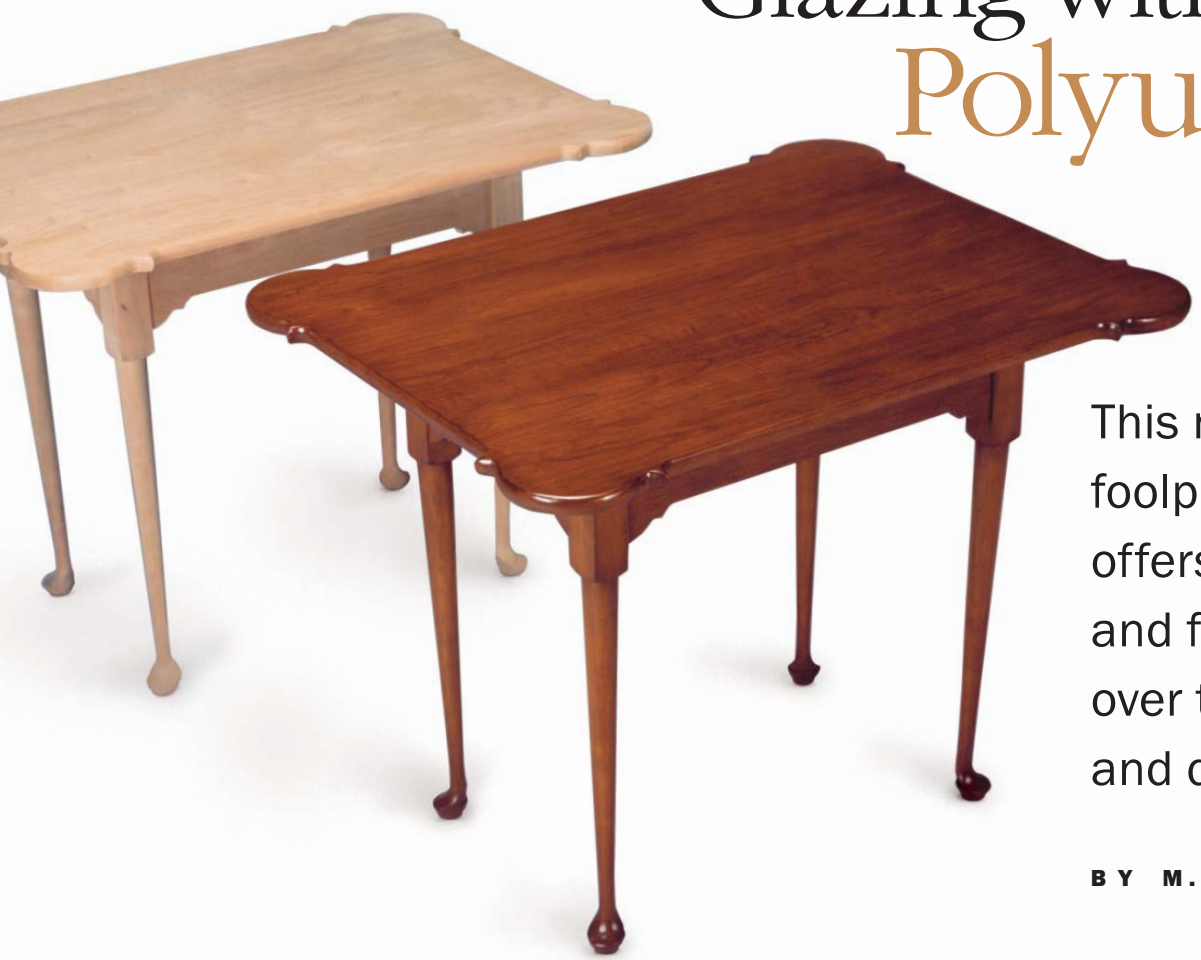
# Glazing with Polyurethane



This nearly foolproof method offers durability and full control over the color and depth of finish

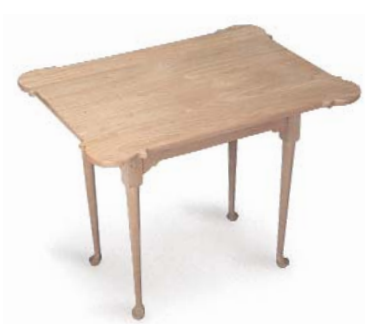
BY M. DAVID BECTON

I like the look of a glazed finish. It gives wood a color and depth that's hard to match. So I developed a simple glazing method using polyurethane varnish. By using polyurethane varnish, I am able to create a durable, hard finish that has excellent resistance to heat, moisture and solvents. And it can be wiped on with little fuss, a nice advantage for anyone without spray equipment. I use a mineral-spirits-based clear, satin, gel-polyurethane varnish. Bartley (800-787-2800) makes one called "gel varnish" that works well.

In addition to great depth, there are several other good reasons for choosing a glazed finish to color wood. It's a great way to darken light-colored areas of sapwood in a board. Then, too, you can darken or lighten an entire project to suit your taste. Also, blotchy areas can be blended out. And finally, glazing allows you to tame any wild grain, and it's just about foolproof.

With this method there aren't a lot of hard-and-fast rules, so each step can be customized as needed to get the finish color and depth you want. Usually a sealer coat, typically thinned shellac, is applied to the bare wood. Then, depending upon the color you're looking for, a coat of stain may be added. The glazing coats follow: usually one to three of them, but there can be more. These colored coats are sometimes the same color, but the colors in each coat are

## GLAZING FROM START TO FINISH



Adding layers of polyurethane glaze to a cherry porringer table, the author transformed the unfinished piece (left) into a table with deep, rich, warm colors (far right).

***Sand.*** *To achieve a smooth, glazed finish, hardwoods, like this cherry, should be sanded through 180 grit.*

***Apply shellac.*** *To control blotching when the color coats are applied, a washcoat of thinned shellac is added first.*

***Add stain.*** *The author wanted a yellow tint, so he added a coat of golden oak stain.*



Photos, this page and facing page (bottom): Michael Pekovich

typically changed as needed to achieve the final color. As a last step, a clear topcoat is added to help protect the glaze.

### Coloring the polyurethane

To add color to a gel-polyurethane finish, mix in Japan colors, universal tints or even artist's oil colors. Most oil-based paints also work. But to avoid drying problems, don't mix more than one part coloring agent to eight parts gel-polyurethane.

Another good option, and one I used for the porringer table shown here, is to mix in one of the gel-stain products made by Bartley. Bartley's gel products can be mixed in any proportion.

As you might expect, matching the glaze to your desired color is a matter of trial and error. It's best to work with small amounts while trying to nail down the color. Also, jot down notes on the proportions of gel and color that were used so that you'll be able to achieve the same color again.

One more point here. It would be prudent to do all of the finishing steps first on a test board. That way you'll be able to look at the test board and see whether the final result is what you want.

If you're unhappy with the look of a glaze coat as it is being applied (and before it dries), simply wet a paper towel or rag with mineral spirits and wipe off the entire coat. Then, with the slate clean, make adjustments in the color and try again. And the coat underneath won't be affected. Sometimes it can take several adjustments until you get the color you want.

### Surface preparation is critical

If I've learned one thing in 20 years of finishing, it's that the quality of the sanding process on bare wood can make or break the quality of the final product. Heavy mill marks can be removed with 80-grit sandpaper. For lighter mill marks, use 100-grit paper followed by 120 grit. Depending on the hardness of the wood and how rich a finish you want, you might use an even finer grit, say 180 or higher.

Once the sanding has been completed, brush on a washcoat of shellac to all the surfaces. The shellac prevents the stain from splotching and streaking.

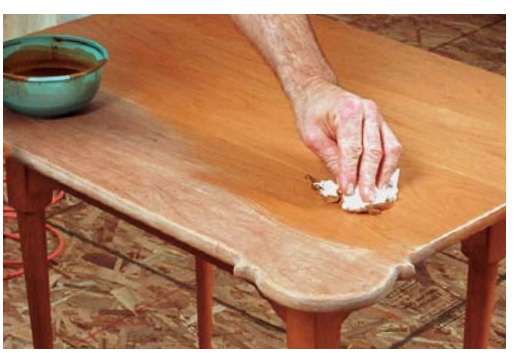
Dewaxed shellac works very well, but white or amber shellac may also be used. Keep in mind that each coat of shellac adds some color, usually a very light amber.

For hardwoods, like the cherry used in the porringer table, use one part 3-lb.-cut shellac and one part denatured alcohol to get a 1½-lb. cut. For softwoods, the mix should be thinner; one part 3-lb.-cut shellac and three parts alcohol. As you apply the shellac,

## PREPARING THE SURFACE

***The first step is to sand thoroughly.*** *Don't rush the sanding process. A little extra time here pays dividends later.*


***Brush on shellac.*** *A washcoat of thinned shellac added before the stain helps control blotching.*

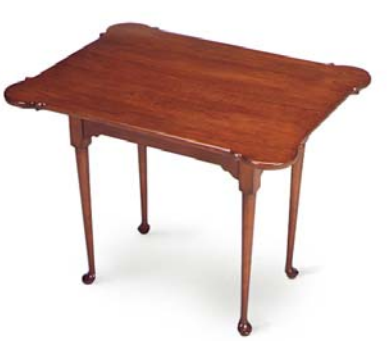


***Apply the stain.*** *To help achieve the result you want, the wood-coloring process starts with a coat of oil-based stain; golden oak was used for the porringer table.*

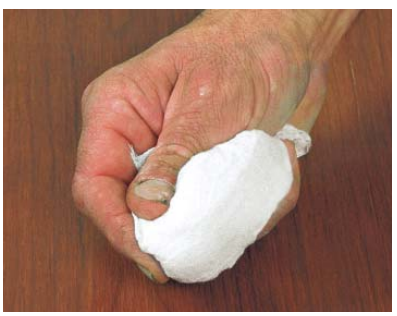
***First glaze coat.*** *A polyurethane gel provides the first coat of glaze. The author used Bartley's golden oak gel stain.*

***Second glaze coat.*** *For an aged and weathered look, a 50-50 mix of two polyurethane gels—walnut and clear—is applied.*

***The topcoat.*** *A clear topcoat adds depth to the finish. Plus the topcoat provides some extra abrasion protection.*



## APPLYING THE GLAZE



***A cloth pad helps control the application of the glaze coats.*** *The pad is made from a couple of rectangular-shaped pieces of an old cotton T-shirt. Wrap one piece around a folded piece to create a soft pad that will fit comfortably in your hand.*

***The first coat of glaze.*** *A brush is used to apply the first glaze coat, a gel stain. The cloth pad allows the author to remove just the right amount of glaze from the surface to get the desired result.*

try to avoid overlapping the brush strokes. That way, you won't spread too much shellac in one area.

After the shellac washcoat dries, cut down any nibs—crystallized dust and raised grain that dry in the finish—with 220-grit sandpaper. Silicon-carbide paper, used dry, is my usual weapon here. By taking a little extra time to get a nice, even washcoat, the subsequent coats of finish will go on easier and more consistently.

### Stain the surface, if needed

At this point, start the coloring process by applying a light to medium shade of stain. Because I wanted the porringer table to have a yellow tint, I used a single coat of Minwax golden oak stain. Had I been looking for a brown tint, I would have used Minwax provincial stain. But don't feel locked in by what I do. You can use any color of oil-based stain that gets you toward the final desired color. However, if a stain isn't going to help you achieve the color you want, simply skip this step.

Apply the stain with a brush, then wipe off the excess with a soft rag. When working on a flat surface, like a tabletop, flood the wood with stain. Then use the brush to work in the liquid before removing the excess with the rag. You can remove either a little or a lot of the stain. For better control, it's best to apply the stain to one section at a time. Start with the least conspicuous area and then move to the most conspicuous.

One final point on stains—give them plenty of drying time, especially alkyd stains, which need 24 to 48 hours to dry completely. Rush this step, and you're simply begging for adherence problems with the polyurethane coats that will follow.

### Apply the glaze coats

Once the shellac and stain coats have been completed, you're ready to start the glazing steps. The glaze is simply brushed on, then wiped off with a cloth pad. Using a pad to wipe off the glaze helps control the application better than a brush can.

The pad is made from a couple pieces of an old cotton T-shirt. One piece is cut into a rectangle, then a smaller piece is folded and placed inside the rectangle. When the rectangle is wrapped around the inner piece, the result is a nice, soft pad—much like a French polishing pad—that fits comfortably in your hand.

**First coat—**The first coat of glaze is the foundation for all of the remaining coats. Subsequent coats simply build on the first coat.



Photos, except where noted: Tom Begnal

The secret to the glazing steps is to go slowly and work only one area at a time. Brush on the glaze kind of thick and then, depending on the desired look, either wipe off just about all of it or leave most of it on. And don't try to get to the final color in one coat. Several lightly colored coats look better than one dark coat.

For the cherry porringer table, I used a single coat of Bartley's golden oak gel stain, wiping off the stain lightly with the pad. But you can choose any color oil-based gel stain you want. Or you can add color to a clear gel.

**Sanding—**After this and all subsequent coats of glaze have fully dried, you need to do a little light sanding to smooth out the tiny nibs left in the dried finish. This sanding step also helps level out any uneven brush strokes.

Sanding between coats has an added benefit of leaving a better surface for the next coat to grab. Unlike lacquer, polyurethane does not melt into the coat below it, so the sanding scratches create a foothold for the new coat.

I find that 400- to 1,000-grit wet sandpaper dipped in soapy water does a nice job. But it's important to sand with a light touch. The first coat is thinner than paper, so it won't take much sanding to cut through it.

Be sure to remove all of the sanding dust completely before you add the next coat of glaze. If you don't, the new glaze coat will trap the dust particles on the surface. A good going-over with a vacuum will remove most of the dust. Then wipe it down with a tack rag to pick up the rest.

**Second coat—**Once the first coat has been sanded, it's time to apply color to the gel. But before starting, you'll need to make another cloth pad, because there's more brushing and wiping to do.

I wanted the porringer table to appear aged and weathered. The idea was to have the finish look almost dirty from many years of service. And to do that I needed a dark color, one that was almost black. So I added Bartley's walnut stain, mixing one part stain to one part Bartley's clear gel. This mixture tends to be thick, though, so I usually add thinner until the blend becomes about the consistency of cake batter.

If the wood surface has a fairly consistent color throughout, you can simply brush on the glaze and wipe it off as needed. Try to avoid putting it on so heavy that you end up with raised brush marks. It should flow smoothly and lie flat on the surface.

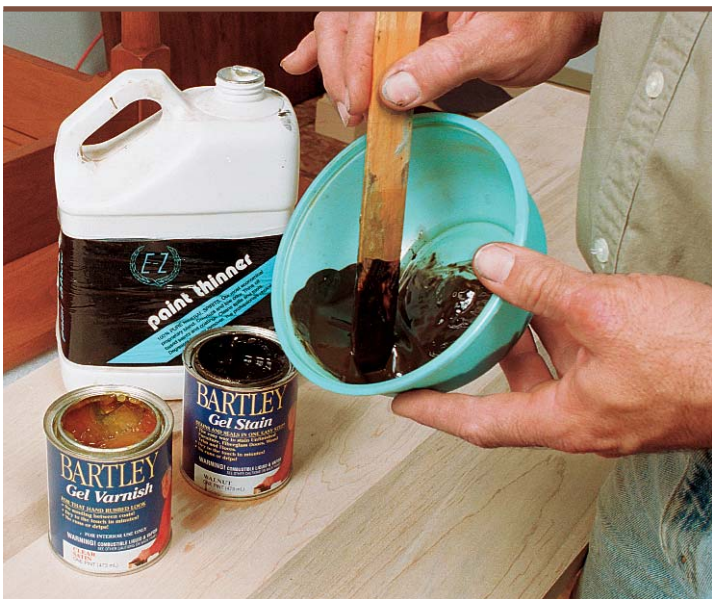
If the glaze is globbing up the surface with streaky color, you're probably putting on too much. Try applying a lighter coat. To make the rag glide just right, it's sometimes helpful to thin the glaze with mineral spirits or Penetrol. But keep in mind that thinning the polyurethane mixture is also going to dilute the binding qualities. That means it won't adhere as well to the previous coat. So don't add more than one part glaze to one part thinner.

If there are light and dark areas you'd like to even out, use the glaze to darken the light areas. Then decide how much glaze, if any, you need to add to the dark zones.

If you don't like the color you're seeing as it's applied, just wipe it off with a paper towel or rag, wetted with mineral spirits. Then adjust the color and try again.

Let each coat dry thoroughly. If you don't, and you need to wipe off the next coat, you are probably going to remove both coats instead of just one. In most areas of the country, a glaze coat will dry

## ADJUSTING THE TONE



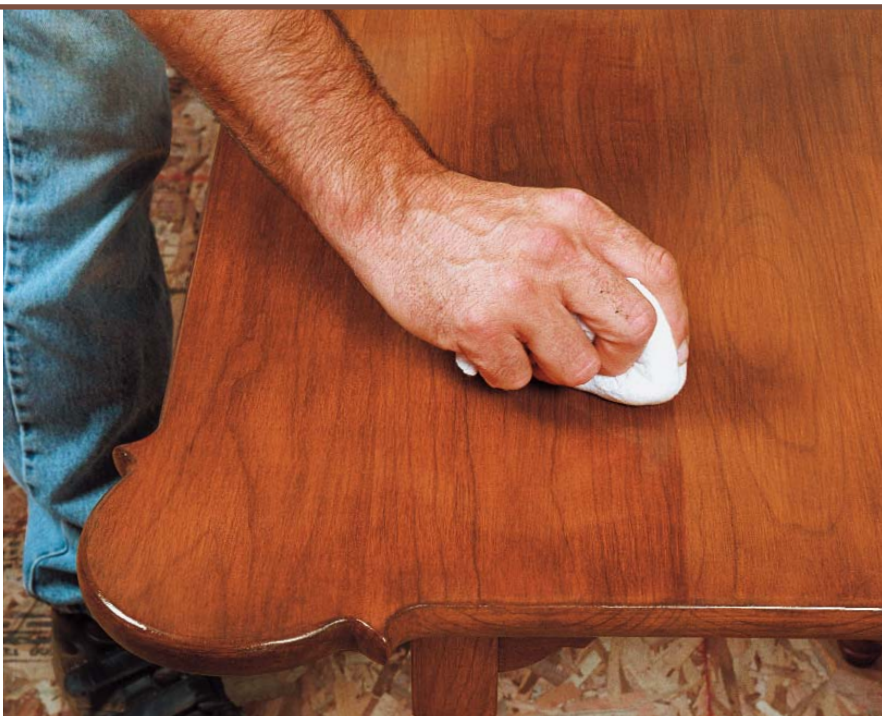

***Mix the second coat.*** *The author wanted a "dirty" color, like that found on many antiques, so he mixed walnut gel stain and clear gel-polyurethane finish. Japan colors, universal tints, artist's oils and oil-based paints are other good options for coloring polyurethane gels.*

***Brush on the second coat.*** *A heavy coat of glaze is applied with a brush, then it's partially wiped off with the cloth pad. Less is wiped off in areas that need to be darkened.*

***You can't go wrong here.*** *If the color of a glaze coat isn't what you wanted, simply wipe it off before it dries, remix the colors and try again.*

## ADDING THE CLEAR TOPCOAT


***Mix the topcoat.*** *Once all of the glaze coats have been added, a topcoat is prepared using clear gel-polyurethane that has been thinned with mineral spirits or Penetrol. The mixture should have the consistency of 30-weight motor oil.*



***Wipe on a topcoat.*** *The topcoat brings out all of the color and depth in the layers of glaze.*

overnight, but in Georgia, where it can get pretty humid, I generally wait a little longer.

**Additional glaze coats—**The long drying time between each of the coats has one advantage. It gives you plenty of time to study the evolving color and depth of the finish and decide whether the color of the next glaze coat needs to be darkened, lightened or perhaps changed entirely.

In most cases, you'll be able to get the color and depth you need with just the first coat of glaze, plus two or three additional coats. For the porringer table, I added two coats on top of the first coat.

### A clear topcoat for depth

A clear topcoat will give the layers of colored finish some additional depth. Plus the topcoat offers a little more scratch protection.

For small projects, I like to use Deft's polyurethane finish. It comes in a spray can for easy application and has a thin consistency, so it doesn't look quite so thick after it has dried.

On projects that are too big to be easily finished with a spray can, I apply clear, gel-polyurethane thinned slightly with Penetrol. First I sand the surface thoroughly with 1,500-grit paper dipped in soapy water. Then I rub on the gel with a clean cloth pad.

I usually don't apply a topcoat to all of the surfaces of a project. Instead, it's applied only to large, horizontal surfaces that tend to catch your eye quickly and stand out. So, on the porringer table, only the tabletop got the topcoat.

### Buffing adds a rich luster

I could stop at this point and be more than satisfied with the results. But I prefer to include another step: buffing the finish. And like the topcoat, I use this step only on tabletops and similar horizontal surfaces. All that's needed here is some buffing paste. I like a product made by 3M called Finesse-It (ebony). If not available locally, you can order it by mail through Wood Finishing Supply (800-451-0678). This product is best used with an electric buffer and a wool polishing pad, but it can also be applied by hand with a cloth pad.

Work on a small section at a time. Start by applying a dab of the compound to the tabletop, then buff it out with the electric polisher or cloth pad. For the final step, use a soft rag to wipe off any of the compound remaining on the surface. It's a great way to polish the surface and to bring out all the color and depth of your glazed finish. □

### Coloring sapwood

*A band of sapwood can spoil an otherwise perfect panel. But coloring the panel with glaze produces a surface with an even tone.*

*M. David Becton has been building and finishing furniture for 20 years. He lives in Americus, Ga., where he operates a custom-furniture business (www.bectonltd.com).*