## Fine WoodWorking

# Three Reliable Finishes

Get good results with oil-varnish, shellac or water-based polyurethane

BY MARK SCHOFIELD

OIL-VARNISH

I f the furniture of Garrett Hack, Phil Lowe and Dolly Spragins are contrasts in styles, then so are their approaches to finishing. Hack relies on a home-brewed wipe-on mixture; Lowe's method is as traditional as the period pieces he builds; and Spragins favors cutting-edge spray equipment and water-based finishes. What they have in common is a method of finishing that favors their style of furniture and at the same time is easy to apply.

None of these woodworkers would describe finishing as their favorite job, but all three know exactly how they want each finished piece to look. By experimenting with different finishes and methods of application, they all found a finish flexible enough to yield a range of looks to suit their furniture.

### Garrett Hack: Oil-varnish is easy to make, apply and repair

Anyone who studies furniture knows that furniture makers are creatures of habit. They sometimes try new things, but when it comes to finishes, makers rely on what they know. Hack is no different. He has a favorite finish that he has been using for years, a simple mixture of equal parts varnish, tung or linseed oil and turpentine. It combines all the virtues of a good finish: It is forgiving in the proportions of ingredients and how they are mixed. It can be tinted, it is easy to apply, and it is durable and renewable. Hack has used it for everything from elegant inlaid tables to kitchen cabinets to hoe handles.

The recipe is pretty simple—A finish chemist could tell you about long and short oil varnishes and the nitty-gritty of this mixture. Hack's nonscientific view is to think of it as a thinned-out wiping varnish. It combines some of the durability of varnish with the workability and appeal of an oil finish. Mix it heavy with a hard varnish like urethane, which has lots of tough synthetic resins, and you can build up a very protective and glossy finish suitable for a dining-room table. For a long time Hack used spar varnish, a flexible varnish applied to wooden boats, that is high in natural resins. Since his local hardware store stopped carrying it, he has tried other varnishes, all with good results.

Hack uses linseed or tung oil. Boiled linseed oil tends to have a richer color than tung oil and is somewhat less expensive. Tung oil





#### Brush it on.

Oil-varnish is applied liberally and allowed to sit for 15 minutes. The first coat soaks into the wood, bringing out the color and depth.



**Rub off any surplus.** After the first coat, little rubbing is required, but for subsequent coats the surplus finish must be wiped off before it becomes tacky. After the bulk of the surplus has been removed, switch to clean cloths for a final buffing.

## **OIL-VARNISH**

## How many coats to apply is a matter of taste and judgment what look you want and how much protection you need.

yields a slightly harder and more durable finish. As for the proportion of oil in the mixture, heavier on the oil gives it lots of workability and a satiny sheen, but you have to build up more coats. A blend with more oil would be good for a piece of bedroom furniture, where less than maximum protection is fine.

Thinning the varnish mixture gives it workability and lets you build up thin layers of finish—always better than a few thick ones. Although it's becoming hard to find, Hack prefers real turpentine over turpentine replacement or similar solvents because it works and he likes the smell of it. He once tried paint thinner and through some chemical quirk ended up with a white blush to the finish.

For the first couple of coats, Hack thins the finish to get better penetration; he adds a touch more varnish for the final coats, especially when building more sheen or increasing durability. To tint the mixture, add either artist's oil colors or one of the Minwax stains. Every coat adds a glaze of color, so a little tinting of the mixture goes a long way.

**Finish is brushed or wiped on**—The key to success with any finish is a properly prepared surface. For Hack, nothing beats a handplaned surface, with a clarity and sheen that a finish only enhances. For detailed moldings and parts that need sanding, he works up to 320 grit. One of the beauties of Hack's finish is that dust—in the shop or on the wood surface—doesn't present a problem. Apply the oil-varnish mixture with a brush or with a rag, saturate the surface, wait 15 minutes or longer until it starts to tack up, then wipe the entire surface. Any dust gets worked into open pores or wiped away.

How long it takes for things to tack up depends on a few variables. A hot or dry shop speeds up things considerably. A mixture heavy on varnish will get tacky more quickly than one heavy on oil or turpentine. Some varnishes, especially urethanes, go from slightly tacky to very tacky in minutes. If you get overly ambitious, and surfaces become tacky before you can wipe them, brush on more finish to soften the tackiness. Though the first coat soaks into the wood and never gets overly tacky, subsequent coats require a thorough wiping, getting into every corner and edge. Use a cotton rag in each hand to do the preliminary wiping, then two more clean ones for a final wiping. Wait at least 24 hours between coats.

A rough finish can be caused by not wiping a surface thoroughly, or it simply may result from open-grained wood. About every third coat, rub out the entire surface, while wet, with 0000 steel wool, paying special attention to these rough areas. This step helps fill the pores in open-grained woods such as ash or oak.

How many coats to apply is a matter of taste and judgment what look you want and how much protection you need. Two coats are a minimum; with four or five coats you start to build up a nice sheen. Finish with a topcoat of a good paste wax. Hack mixes beeswax, linseed oil and turpentine to the consistency of roomtemperature butter. He wipes on the wax with fine steel wool and buffs it out to a nice, satiny sheen.

**Oil-varnish is easy to repair or rejuvenate**—Hack's finish can be repaired easily. If the finish is damaged slightly or becomes dull or dirty, brush on a fresh coat of finish. Rub it out with fine steel wool to loosen any stubborn dirt, such as fly spots or children's hand prints. A thorough wiping leaves the surface as good as new. This is a nice trick, indeed, one that few other finishes can match.

## Phil Lowe: Nothing to match shellac

As a restorer of antiques, Lowe has had plenty of opportunity to examine the finish on many pieces of furniture up to 300 years old. Most pieces were finished with shellac, a durable finish that develops a patina that collectors prize so highly. Lowe has a single word that describes the value of shellac: versatility. The colors of shellac range from nearly transparent to reddish brown. Methods of application include spraying, brushing and padding. The finished sheen can range from an open-pored satin to a Frenchpolished gloss. It is compatible with almost any other finish, whether applied before or afterward.

**Shellac offers an unmatched choice of colors**—Seedlac is orange-colored, garnet and ruby shellac have a reddish hue, buttonlac gives a brown/green tint, and blond shellac is almost clear. Lowe chooses the type of shellac based on what wood he is using and on what look he is seeking. When he built a walnut jewelry chest-on-frame for his wife 15 years ago, Lowe wanted to let the wood develop the sun-bleached look of many walnut antiques. While no type of shellac gives protection from ultraviolet rays, the oranges and browns of darker shellacs would mask the eventual bleached wood. He therefore used blond shellac, resulting in a piece that is well on its way to the aged appearance Lowe desired but with no deterioration in the actual finish.

For a just-completed Queen Anne chair, Lowe used a 2-lb. cut of buttonlac. This dark brown color with a greenish hue will combine with the purple/brown of the walnut to produce the rich brown found on many older pieces. For an amber tone, he would use seedlac. For Federal-style pieces, with their different-colored inlays and veneers, Lowe uses blond shellac, which lets the natural

## SHELLAC

Lowe has a single word that describes the value of shellac: versatility.



**The first coat goes on thin.** To allow for greater penetration of the first coat, Lowe thins the shellac with additional denatured alcohol.



A shellac for every wood. The slightly greenish hue of buttonlac combines with the purple hue of walnut to yield a rich, brown color.



Load the spray

gun. Pour the finish through a filter as a precaution against a clogged spray gun.

hue of the different woods show through. Shellac is not a suitable finish for heavy-use tabletops. For these areas Lowe uses Epithane varnish over the shellac.

**Finish can be sprayed, brushed or padded on**—Not having the facilities to spray, Lowe applies shellac with a brush or a pad. He uses an imitation double-fitch brush made from skunk hair. Such a brush holds a large amount of finish, even when tipped off, which allows him to brush on long, even coats. With less need for recharging the brush and consequent overlapping, the finished surface has a consistent color.

For padding on shellac, the size of the pad depends on the size of the area to be finished. Lowe's pads consist of cotton batting surrounded by white, finely woven cotton or cotton-muslin.

Begin by sealing the entire piece with a couple of coats. The next day, lightly dab the working surface of the pad in raw linseed oil before adding shellac. This gives more elasticity to the shellac and makes it dry slower. Gradually build the finish until you get the desired fullness. Let the piece dry overnight and then, if needed, level the surface with steel wool or silicon-carbide paper.

Many woodworkers associate shellac only with French polishing, but it can be used to obtain a variety of looks to suit all styles of furniture. You can apply everything from a thin sealer coat for a wax-only look to one that is highly built and rubbed to perfection.

Another advantage of shellac—especially for a shop with no dedicated finishing area—is its quick drying time. Dust contamination is not a problem because shellac is tack-free almost instantly.

**Shellac is repairable**—If a shellac finish gets damaged, first remove any wax with mineral spirits or with 0000 steel wool. If there is a heavy scratch or gouge, use shellac sticks and a burn-in

## WATER-BASED POLY

A great advantage of waterbased finishes is that they dry quickly. In under an hour you can sand the first coat and apply another.



**Spray the finish.** This high-volume low-pressure (HVLP) spray gun produces the very fine atomization necessary for water-based finishes.

knife to fill the depression. Then apply more shellac with a pad. If the natural colors of liquid shellac do not match the rest of the piece, aniline dyes can be added, including black to ebonize the wood.

## Dolly Spragins: Water-based finishes are clearly better

Like many converts to water-based finishes, health and safety concerns about spraying solvent-based finishes in a garage with no proper spray booth led Spragins to investigate alternatives.

Besides "not wanting to set myself on fire, blow myself up and kill brain cells," there were also artistic reasons for trying waterbased finishes. She clearly remembers her first sight of unfinished exotic wood veneers, and how beautiful they were in their natural state. Applying a solvent-based finish always changed the look, imbuing the wood with a slightly amber tone. While sometimes it was still beautiful, often Spragins wished she could preserve the original appearance.

Then there is the issue of depth. While on many occasions woodworkers seek to increase the depth when applying a finish, with a solvent-based finish you have no alternative. A water-based finish provides more options. You can use oil or shellac as a first coat to bring out the depth, or. in the case of pear and other pale, simple, flat woods, you can preserve that "fresh wood look" by spraying a water-based finish as the first finishing step.

You can apply more than one coat per day—When Spragins wants to show off highly figured veneers, such as the burl on the tabletop shown here, she seeks clarity and depth. She achieves this either by spraying a coat of shellac, or in the case of this table, wiping on a coat of slightly diluted water-based finish. After sampling many different water-based finishes, Spragins has settled on Target Coatings' Oxford Super Clear Polyurethane because it is easy to work with, dries quickly and clearly and sands out well.

A great advantage of water-based finishes is that they dry quickly. In under an hour you can sand the first coat and apply another. The goal, particularly on tabletops, is a perfectly flat surface. With porous wood, Spragins initially sprays two coats before sanding with 240- to 350-grit paper until there are no shiny spots left. Some pieces may require three to six coats, sanding between each, but because of the quick drying time, it can often be done in a day or two. Fill deep spots with a slurry of sawdust mixed with the finish and applied with a knife. Fill smaller depressions with a drop of the finish. When dry, sand level and apply additional coats.

For a satin finish, sand up through 800 grit and then apply a polish. For a gloss finish, use Abralon cushioned abrasive pads without lubricant, working up through 4,000 grit. Let the surface rest for 48 hours, or longer, to cure, then polish using an automotive rubbing compound, such as one made by McGuires or 3M. If you •have a variable-speed buffer, use a slow speed. The compound may also be rubbed out by hand. Wipe off the compound prior to polishing to check the level of gloss and to remove abrasives.

For a high-gloss appearance, buff with an automotive liquid wax. On dark woods, you may find that there is a slight chalky appearance left in voids. This can be avoided by adding to the wax a few drops of water-based dye, such as Transtints, to match the wood.





**Touch-up.** After the first coat has been applied and sanded, fill any cracks and depressions, This can be done with a slurry of sawdust and finish or with finish only. Here, Spragins fills a small void with the point of a scalpel.

A wetgloss look.

Automotive liquid wax applied with a buffer quickly brings up a highgloss appearance.



**A final buffing.** A soft, clean cloth removes any traces of wax to leave a surface that is slippery smooth.

Mark Schofield is the assistant editor.