Taking the Spray-Finish Plunge

A spray system can improve finish quality and increase your productivity

by Andy Charron

My first shop was a one-car garage. What space I had was filled with tools that were absolutely necessary to make furniture. That left out a dust collector and a finishing room. As a result, getting dust-free finishes was frustrating. Brushing on shellac and varnish worked fine for small projects, but as I took on bigger jobs and built more pieces, I turned to wipe-on oils because they weren't as fussy to use. Eventually, I needed more durable finishes that didn't take long to apply.

A spray system was the answer. Spraying on finish is fast and easy. You can get into places where brushes and rags are useless (see the photo below). Spray finishes look superb, too. The coating is more uniform and the finishes between pieces is more consistent. But once I was committed to changing to spray finishes, I knew I had some research to do (see the story on p. 58 in this issue).

Spray systems and finishes are better now

The variety of spray systems has increased dramatically over the last 10 years. Manufacturers have introduced small, inexpensive units that are ideal for hobbyists and small shops. Also, there have been many improvements in high-volume, low-pressure (HVLP) spray systems, particularly in terms of transfer efficiency. The price of an entry-level HVLP spray system is around $200, and there's a wide variety of systems in the $200 to $500 range. These spray systems aren't much more expensive than many power tools.

Waterborne finishes have improved as well, and as a result, the need for dangerous, solvent-based finishes has decreased. Water-based finishes are nonflammable, which means that you no longer need a spray booth to get started. Having a clean spray area, a respirator and good ventilation (I use an exhaust fan) will suffice.

Spraying gets finish in nooks and crannies. *One reason Andy Charron switched to spraying is that it gets finish where other applicators won't. Here, he sprays water-based sealer on the latticework of a poplar headboard.*

Spraying has benefits over other methods of finishing

1) Spray finishes are forgiving. Because a sprayed finish is built up in thin layers, small scratches and marks stay better hidden under a sprayed translucent finish than under an oil finish. Surface preparation is still important, though. This is especially true when spraying paints or opaque stains.

2) Spray finishes are fast. You can spray 30 stools or 1,000 small wooden blocks in an hour. And because the sprayer breaks the finish into small particles, each coat dries in a hurry. Many varnishes, water-based products and sprayed lacquers will dry to the touch in minutes. Some of them can be sanded and re-coated in a few hours. Dust has a short time (while the coat is tacky) to settle on the work, which reduces the need for sanding between coats.

3) Spray finishes are versatile. Basically, any finish that can be applied by brush or by rag can be sprayed. If you use an explosion-proof booth, you can spray shellac, lacquer and other solvent-based materials. If you

And a spray system won't leave you with a pile of oily rags that can catch on fire.

Brush-on and wipe-on finishes are slow and exacting

In my furniture business, I brushed on varnishes for only a short time. Varnish was just too slow to brush and too slow to dry. And I needed excellent lighting to brush, sand and rub out the varnish.

I did stick with wipe-on oils for a while. Oil didn't require any special equipment, and I could oil in less-than-ideal conditions. I wasn't building up a thick surface film (like a varnish), so I worried less about dust and lint getting trapped in the film. Oil finishes soon became a key in my marketing strategy, too. Most of my customers liked the phrase, "authentic, hand-rubbed finishes."

Oil finishing does have drawbacks. The protection offered by an oil finish is minimal (see *FWW* #104, *p.* 85), and an oil finish needs more maintenance than other topcoats. Surface imperfections, like scratches, stand out more than they would under a film finish. And oil finishes are time- and labor-consuming. Depending on the temperature and humidity, an oil finish can take several days to apply. It also involves a great deal of work. It's hard to get thrilled about rubbing out multiple coats of oil on 400 wooden clock frames.

Any spraying disadvantage can be overcome

As attractive as spray finishing is (see the box below), it does have a few weaknesses. Setting up a safe, efficient system takes up shop space and costs money. Besides a gun, you will need a source of air (either a turbine or compressor), hoses, filters and connectors.

Clean finish, clean gun*—To get blemish-free finishes, the author filters the finish before he sprays, and he cleans the gun afterward. He often tints his paint basecoats with pigment, so the topcoat covers better.*

Because spraying releases finish mist into the air, you will also need a spray area that has fresh-air circulation. If you spray solvent-based finishes, you'll need to check with your local building inspector before you set up a booth. But if you spray water-based products exclusively, you won't need explosion-proof fans and fixtures.

Unlike most brush-on and wipe-on finishes, spray finishes must be filtered and then thinned to the correct viscosity (see the photo at left). Not thinning enough can lead to lumpy finishes and "orange peel." Using too much thinner creates problems, too, like drips and sags on vertical surfaces. And it will take longer to build to the right film thickness. The result is you won't be able to get nice, glossy clear coats, and paints won't hide the underlying surface or provide good color depth. Too much thinner also lengthens the drying time, so dust becomes a problem.

Finally, keeping your spray gun clean is critical. Although cleaning does involve some effort and time, it doesn't take any longer to clean a spray gun than it does a brush.

Ultimately, spraying reduces finishing costs

Although some of the finish does get wasted through overspray, you can still lower your material costs. I've had to reject far fewer pieces that I've sprayed than those that were finished by brush or rag. And spraying saves labor costs. In the first month, I more than offset the initial expense of the equipment (about $800). Now my business couldn't survive without a spray system. □

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don't have a booth, you can still spray water-based finishes. With some spray systems, you can apply water-based contact cement, which works great for laminate work.

4) Spray finishes can be precisely controlled. Spray-gun adjustments combined with proper spray techniques give you good control over how and where the finish is applied. A brush transfers nearly 100% of the finish to the work, but you have to be diligent at keeping the coat even and at the right thickness.

Even though the transfer efficiency of a spray gun is lower than a brush (between 65% and 85%), you can adjust air pressure, fan size and fluid flow to ensure light, even coats. Also, because the atomized material flows together uniformly, there are no brush or lap marks.

5) Spray finishes are relatively easy to apply. Spray finishing is fairly basic. You can learn how to spray a simple case or frame in less time than it takes to master brushing or wiping on a finish. With a bit of practice, you can spray stains and dyes to get uniform coverage and consistent color depth. After some more practice, you can use tinted clear finishes to do special techniques, such as shading or sunbursts. Because spraying allows a greater range of finishes, your projects will look more professional.

6) Spray finishes are consistent in quality. Without a doubt, the best reason for investing in a spray system is the overall higher quality of finish that you can achieve.

A spray-on finish is far superior to brush-on or wipe-on finishes. The problems caused by brushing, such as runs, drips and air bubbles, are reduced with spray equipment. And brush marks are gone. You can spray an entire piece, no matter what its size or shape, with light, even coats of finish. —*A.C.*

Spray guns increase production. Charron compares the number of clock frames he sprayed (left) vs. those painted with a brush.