

Spray Finishing

Mastering clear lacquer

by Gregory Johnson



Sprayed nitrocellulose lacquer, though more involved to apply than a padded oil or brushed varnish, is worth the extra effort. As author Johnson explains, it's among the most workable and practical of finishes for small-shop furnituremakers.

I once heard a story about an old man in a brass foundry who had been tirelessly polishing a huge brass door for hours on end. Another man, having watched him work for awhile, finally spoke up. "That door is just beautiful. How do you know when it's done?" Still polishing, the old man answered, "It's never done. They just come and take it away."

You could say the same thing about a hand-rubbed lacquer furniture finish. The more you rub, the better it gets. But long before they come to take it away, you'll have achieved a splendid finish that protects wood against abrasion, heat, alcohol, dirt and water much better than an oil finish. True, a sprayed lacquer finish is more difficult to apply than oil or brushed varnish, but it's among the most workable, practical finishes for the small shop. It's fast drying and you can see results quickly. Lacquer alone brings out the beauty of natural wood in its lightest tone. Most problems in a lacquer finish are evident within five minutes after spraying. If it doesn't blister, pinhole, craze

or look like a lunar landscape within that time, chances are very good that it won't fail later on. And if, for some reason, you don't like the results, you can usually strip it off with thinner and start again.

In this article, I'll describe spray lacquer basics using a desk made by my nephew, Paul Johnson, as an example. The desk presents most of the problems you'll face in lacquering a piece of furniture, including spraying inside corners and finishing both sides of a flat panel that will be exposed to heavy wear. Since the desk is made of maple and purpleheart, two nicely contrasting woods, no masking or staining was required, making this a straightforward, clear lacquer job. It's possible to mix stains and glazes with lacquers or to color wood by spraying opaque lacquers, but these techniques are the subject of another article.

Getting started—Before going into the specifics of spraying, I should say a bit about safety. Spraying lacquer is extremely haz-



A good lacquer finish begins with a meticulously prepared surface. Above, Johnson repairs a minute flaw with a hot knife and a burn-in stick. Patches will later be matched with blending-powder stains.

ardous. The fumes are toxic and explosive and the lacquer itself highly flammable, as is the overspray. Consequently, I do all of my spraying inside a commercial-quality spray booth equipped with a high-volume fan that rapidly clears fumes and removes overspray from the exhausted air with a series of paper filters. The fan itself and the lighting fixtures inside the booth are wired with explosion-proof fixtures.

Obviously not everyone has access to a spray booth, but I strongly recommend that you buy one used or new or build your own, using the explosion-proof hardware available from wholesale electrical supply houses. On warm, windless days, it may be possible to spray small jobs outdoors in a sheltered area, but if you plan to do a lot of lacquering, a booth is a must. Before buying or building a booth, check with the local fire department to find out if zoning or safety laws prohibit spraying in your neighborhood. In California, where air-quality laws are strict, you should check with environmental authorities before setting up. Whether you spray inside a booth or outdoors, *always* wear a respirator designed to protect against vapors from organic solvents.

Before finishing can begin, the furniture must be completely assembled with everything fitted to perfection. There's nothing worse than rushing a piece through finishing only to discover that a door or drawer still needs a pass with a plane to achieve a perfect fit. It's sometimes difficult to know how much of a piece should be assembled before finishing. You might assume, for example, that the pigeonholes in the desk should be left in pieces, then assembled after finishing. In fact, it's not difficult to angle the spray pattern into each compartment. If finished as small parts, they'd be blown all over the place, take twice as long to spray and be bothersome to handle. Follow this general rule: assemble glued-up parts before finishing, but disassemble parts fastened with screws, hinges or bolts after they've been fitted and spray them separately.

I begin by meticulously sanding the wood with 100-grit garnet paper followed by 220 grit, keeping a close eye for imperfections and fixing them as I go. Sanding can be done by hand or with a pneumatic or electric orbital sander. Jumping from 100

grit to 220 grit may sound like heresy, but it works fine as long as the final sanding is thorough enough to remove any scratches left by the 100 grit. As I sand, I blow off the dust with compressed air to reveal any imperfections. Dents can be steamed out by placing a moist towel over the blemish and heating it with a household iron. If the ding remains, fill it with clear burn-in stick or five-minute epoxy mixed with a little sawdust. Later, the patch will need to be blended in.

Tight-grained woods, like the maple and purpleheart in the desk, don't need to be filled before sealing, but open-pored woods should be filled with paste filler. I use Star paste wood filler (available from Star Chemical Co., 360 Shore Drive, Hinsdale, Ill. 60521), which comes in pre-mixed colors and natural. To keep the filler from darkening the wood too much, spray a light coat of lacquer sanding sealer, then sand with 320-grit wet-or-dry paper before filling. After the filler has cured overnight, scuff-sand it with 320 grit before applying any more coats. At this point, you can begin thinking about a spray schedule.

Lacquer is a very versatile material and, depending on how you apply it, a tremendous number of finishing effects are possible, ranging from a subdued, low-gloss film hardly distinguishable from oil to a hard, mirror-like gloss. In any case, applying lacquer is a multi-step process that takes place over a few days or a week. I usually plan the schedule in my mind but it's helpful to note it on paper, especially for a beginner.

It's sometimes difficult to decide what degree of gloss a piece of furniture ought to have. I've found that in most cases, a dark piece looks good with a higher gloss. A satin finish on dark mahogany, for example, sometimes appears muddy, but a higher sheen brings out the depth. In most cases, any sheen looks good on light-colored pieces, but they're usually best treated with a satin or semi-gloss.

Lacquer manufacturers sell a range of glosses typically going from flat, satin, semi-gloss to gloss. To keep things simple, you can simply buy a gloss lacquer then add a flattening agent if you want a flatter sheen. Just mix up an experimental batch and spray it on a test piece.

The main disadvantage of flattening agents (and flat lacquers) is that they produce a softer, less resilient film. For vertical surfaces or unexposed areas that won't get much wear, this isn't a problem. Table and desk tops, however, need the added protection of a gloss. If glossy doesn't suit your tabletop, you can flatten the sheen, without giving up hardness, by rubbing with steel wool or pumice. It's perfectly acceptable, and often desirable, to use different gloss ranges on the same piece. Regardless of the final sheen I want, I use gloss for the base lacquer coats because it shows up defects that need fixing before applying the final coats.

Here's the spray schedule I came up with for the desk: Two coats of sealer, sand well with 320 grit; one coat gloss, touch-up any light colored patches; two coats gloss, do burn-ins, check for any remaining touch-ups; two coats gloss, sand well with 220 grit; two coats semi-gloss on base, drawer, knobs, bottom side of writing lid, sides and bottom of pigeonholes; two coats gloss on top of writing surface and top of pigeonholes. Allowing for drying times and rub out and assembly, this finish was accomplished over seven working days.

Counting the two sealer coats, there are nine coats of lacquer altogether. That may sound like a lot of finish, but lacquer has a relatively low solids content. After thinning the lacquer for spraying, it contains only about 10% solids. So, 90% of what you spray evaporates. Most lacquers are thinned 50/50 for spraying

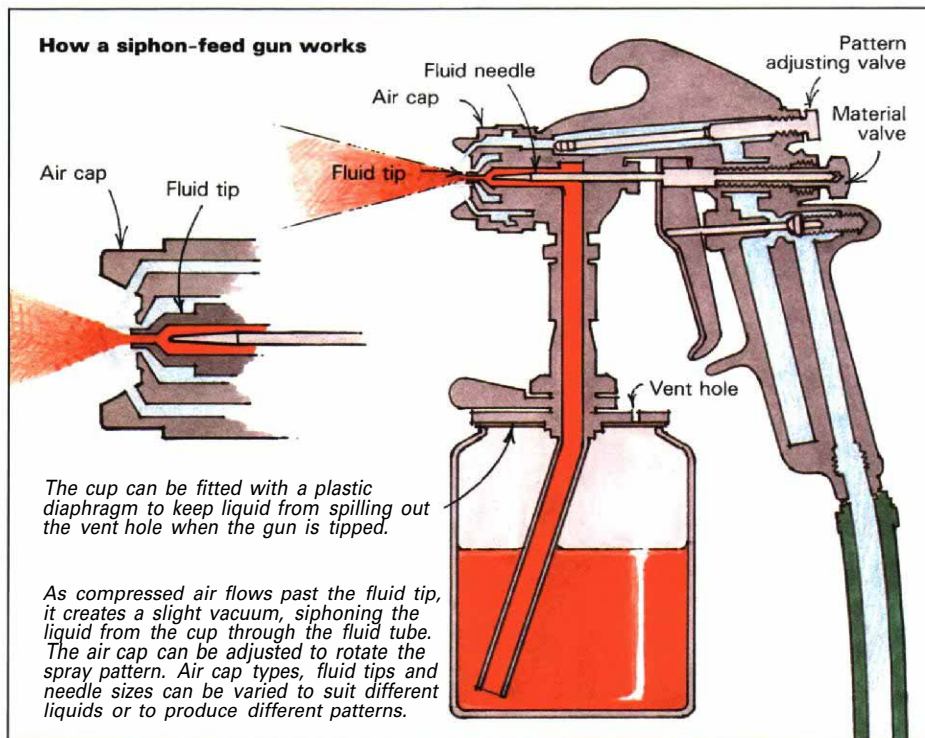
Selecting spray equipment

The type of spray equipment you choose depends on how your shop is equipped and how much money you want to spend. If you already own an air compressor, you'll need to begin with a spray gun. These are available in two types: pressure feed and siphon or suction feed. In a pressure-feed gun, the fluid is forced through the spray nozzle by pressure introduced into a large container holding the finish. This type of gun is best suited for viscous finishes or production spray schedules. Siphon-feed guns work by drawing the material out of a small cup via a slight vacuum created by compressed air streaming through an orifice in the air cap. Siphon feeds are usually the best choice for small jobs involving light-bodied lacquers.

I like the DeVilbiss model JGA-502, a siphon-feed cup gun that costs about \$120. Other manufacturers make similar guns, so you may want to shop around. The JGA-502 gun can be fitted with any number of needle, nozzle and air cap combinations, depending on the type of material being sprayed. For lacquer work, the Ex .070 fluid tip with a #80 cap seems to work best. A different cap and tip combination may be required for heavier or lighter liquids or in instances where compressor air output is limited.

In our shop, we have a 5-HP compressor that's more than capable of operating a spray gun and an air tool or two, all at the same time. Some people insist that you need a big compressor to run a spray gun but I disagree. Before we got the big compressor, I managed pretty well with a 1½-HP Sears Craftsman compressor. As long as your compressor is able to deliver about 5 to 7 cubic feet per minute at 30 to 38 psi, any siphon-feed gun should work fine. I operate my gun at 38 psi with the material-adjusting screw wide open (unscrew until you see the first thread) and the fan pattern adjusted to its full extent. This will give you a 6-in.-wide spray pattern at about 6 in. to 8 in. away, ideal for furniture.

Whatever the compressor, you need clean,



dry air. Water in the air supply is bad news. If there's enough, it can cause the lacquer to cloud over or blush. Oil blown past the compressor's pistons is equally troublesome. To avoid problems, pipe the compressor's output through traps designed to remove oil and water, and drain these traps regularly. We pipe air around our shop through ½-in. galvanized pipes. We've installed a trap right at the compressor's output and also at each air station in the shop. If you have only one trap, install it as far away from the compressor as possible to allow the air to cool and the water to condense. The compressor should be downhill from the air outlets so condensed water will run back into the compressor's tank where it can be drained. Our air system is charged at 120 psi. Regulators at each outlet adjust pressure downward, as required.

Recently, I discovered another type of gun that operates on low-pressure air deliv-

ered at high volume by a turbine pump instead of a compressor. These guns have been popular in Europe for about 20 years but are just catching on in this country. The system I use is made by Apollo Sprayers International Inc., but similar set-ups, all of which operate on the same principle, are available from several other manufacturers (see p. 72 for more). Where a conventional gun atomizes the material at about 35 to 50 psi at 5 to 7 cubic feet per minute of air flow, a low-pressure gun atomizes at 3 to 5 psi at 45 cfm. As a result, the gun doesn't blast the lacquer onto the surface but lays it down more gently, allowing more control with much less overspray and, ultimately, less waste. With less overspray, I can operate the booth fan at half-speed, which cuts noise and reduces my winter fuel bills. While these guns aren't cheap, they're less expensive and involved than buying and setting up a compressor system. —G.J.

unless stated otherwise by the manufacturer. I've learned to thin lacquer pretty much by eye, but if you want to be more scientific about it, you can buy a device called a viscosity cup. By timing how long it takes your thinned lacquer to drain through the cup, you can measure viscosity accurately. Cups come in different sizes but most lacquer manufacturers quote times for the No. 2 Zahn cup. The proper viscosity is important since it affects how well the lacquer sprays. If the lacquer is too thick it won't atomize properly, resulting in a spotty surface. If it's too thin, it's likely to run or be over atomized and produce a rough, gritty surface.

Much of the sealer and lacquer I use comes from a local com-

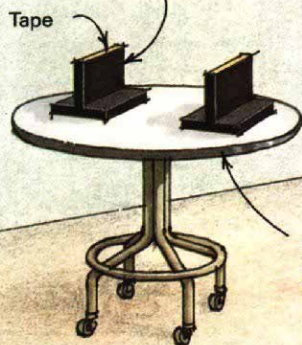
pany, Eastern Chem-lac (1080 Eastern Ave., Maiden, Mass. 02148). For tabletops I use a higher-quality, more expensive sealer and lacquer from Mohawk (Perth Rd., Amsterdam, N.Y. 12010).

Setting up the booth—With the desk sanded and ready, I moved it into the spray booth, planning in my mind the most efficient way to spray it. I placed the pigeonhole assemblies on drying racks along the wall. A pair of sawhorses, bridged by two 8-ft. 2x4s, supported the writing lid, drawer and drawer bottom. For the writing lid, which must be finished extra carefully on both sides, I taped clean drawing paper around the 2x4s for padding. The drawer pulls were mounted on a stick so they could be

Fig. 1: Spray booth hardware

Hold parts for spraying on T-mounts cobbled up from scraps. Tape on the top edges can be renewed for a clean surface

Tape



An old drafting stool, fitted with a large plywood top, serves as a spray booth turntable. A replaceable cardboard cover keeps the top clean.

Shelf brackets with wooden pads and paper will hold large panels, shelves, and doors for spraying.



To move furniture inside the booth, "shoe" the piece with three-wheeled dollies mounted on each foot or at corners of case.

Screw through hole to fasten dolly to leg.



Spraying techniques

Parts to be sprayed are first positioned conveniently in the booth using fixtures shown in the drawing above. Small items like drawer pulls (upper right) are mounted on a scrap and sprayed separately.

With short, tight bursts and quick sweeps, it's possible to spray inside pigeon-holes without getting a face full of overspray (right).

The gun's distance and rate of movement control the fullness of each coat, a technique best learned on horizontal surfaces.

Johnson sprays the insides of enclosed structures, like the drawer shown at lower right, before moving to the outside surfaces. The drawer bottom is propped up on T-mounts and sprayed separately.

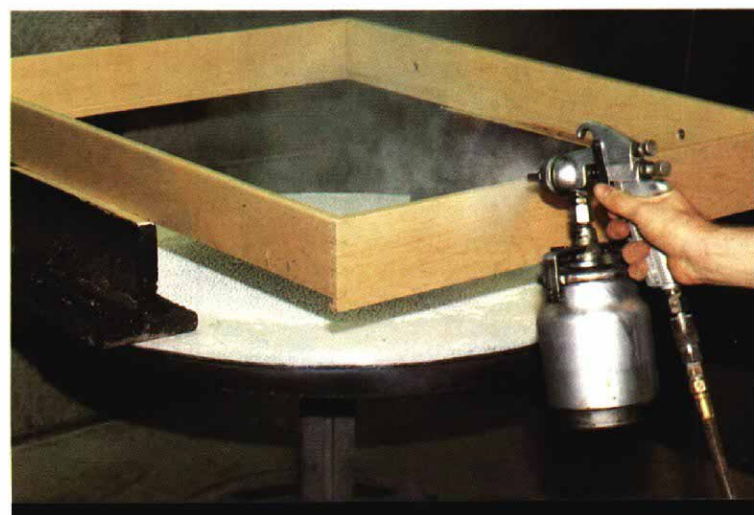
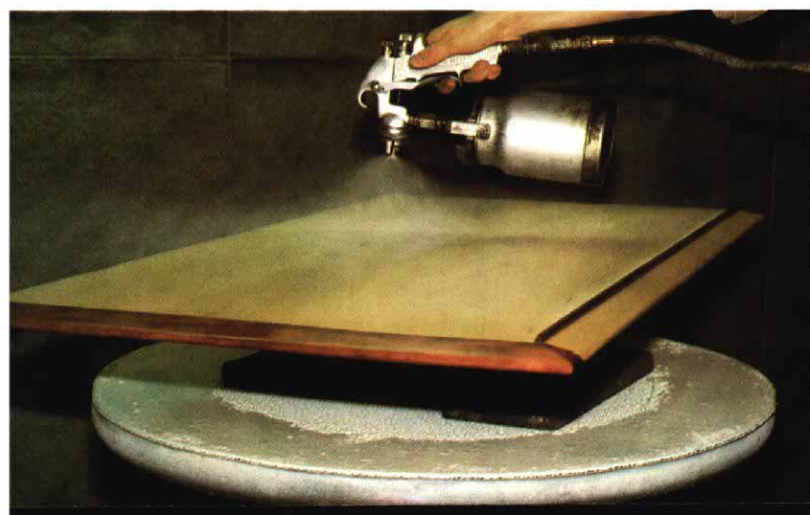
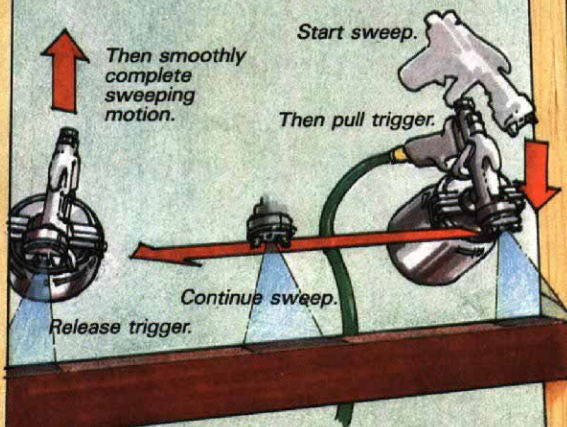


Fig. 2: Aiming the spray pattern

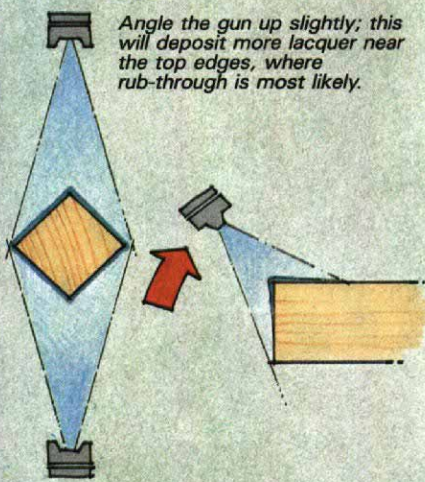
Inside corners

Spray inside corners with a continuous sweeping motion, keeping the gun at a constant distance from the surface.



Edges

Angle the gun up slightly; this will deposit more lacquer near the top edges, where rub-through is most likely.

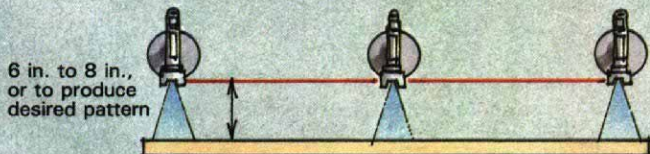


Spray narrow parts such as legs and stretchers in two passes by angling the gun to coat two surfaces at once.

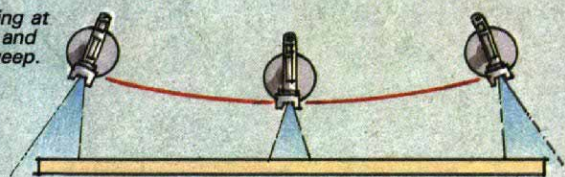
Panels

On flat surfaces, keep the gun parallel to surface and about 6 in. away. For a tighter pattern, work closer but move the gun faster to avoid puddling.

Keep gun at constant distance from work.

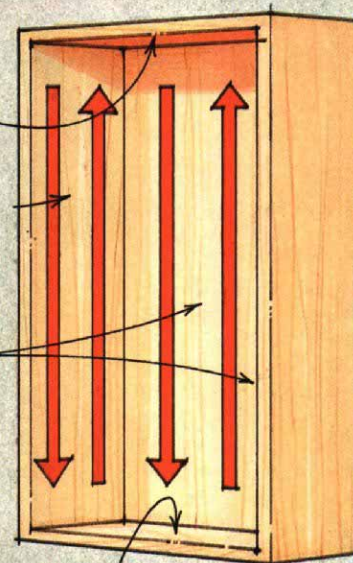


Avoid arcing at beginning and end of sweep.

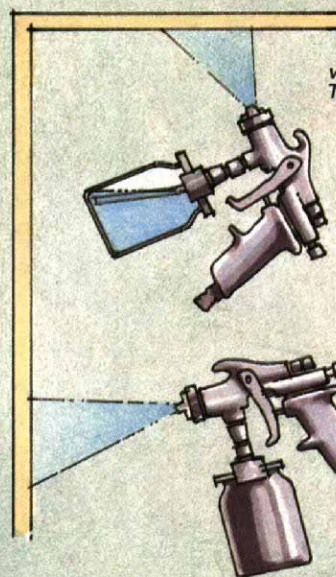


Inside a carcass

1. Spray inside of top first.
2. Then inside of side, moving front to back.
3. Spray opposite side and back.



4. Since bottom of case will be most visible, spray it last before moving to outside surfaces.

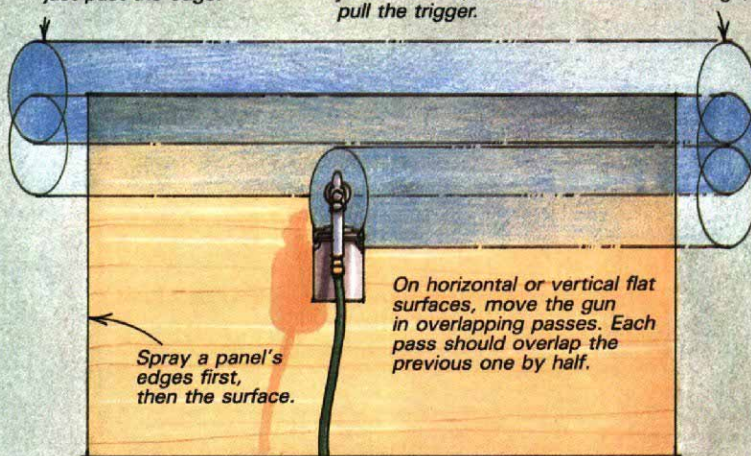


Spray overhead surfaces while gun cup is fairly full. This will keep siphon tube from gulping air.

To reduce backspray, angle gun down slightly.

Stop spraying just past the edge.

Begin gun movement first, then, just before the nozzle encounters the edge, pull the trigger.



Spray a panel's edges first, then the surface.

On horizontal or vertical flat surfaces, move the gun in overlapping passes. Each pass should overlap the previous one by half.

Improvising a spray booth

by David Shaw

While it's preferable to spray lacquer within the cozy confines of a commercial spray booth, many of us have neither the space nor the money for one. With a little ingenuity, however, and minimum expenditure, it's possible to reasonably duplicate spray booth conditions so you can spray small jobs safely inside your shop.

The three main things you need to do are to ventilate your spray area, isolate it from spark sources and exhaust the noxious and inflammable fumes. Since I can't afford a separate booth, I do all of my spraying inside my 14-ft. by 22-ft. shop. For ventilation, I installed an explosion-proof fan (mine's a Dayton 9M717) in one wall of the shop, at an opposite corner from an air vent. To keep overspray from being pumped outdoors, I installed a filter on the exhaust side of the fan, between the fan and a set of louvers that automatically open when the fan's turned on. The filters, called paint arresters, are available from local finish supply houses. If practical, it's better to install the filter in front of the fan so overspray won't gunk up the blades.

The size of the fan (quoted in cubic feet per minute) depends on the size of the room in which you're spraying. Not too surprisingly, there are government regulations on fan size. The Occupational Safety and Health Administration recommends a minimum air flow of 100 feet per minute over the object being sprayed. To arrive at a fan size needed to move this much air, multiply the width of your spray area times the height by 100. My fan's not nearly big enough to move that much air, but by spraying as close to the fan as I can, I get good enough ventilation for short spraying sessions and also keep the overspray from settling on my tools and on other pieces.

Good lighting is critical in spray finishing. I've managed to make do with the standard fluorescent tubes in my shop, but the safest light sources are the explosion-proof fixtures enclosed in glass and wired through metal conduit to a switch outside the spray area. Similarly, the compressor should be located outside the room and preferably at a level well below the spray gun, so moisture in the air will have plenty of time to condense and gravity will pull the water back into the air tank where it can be drained.

Finally, and perhaps most important, you have to contain the buildup of fumes that will occur in your shop. Lacquer fumes are insidious and persistent and will work their way through the tiniest

cracks and holes. My solution was to staple a plastic vapor barrier to the spray area walls, furr-out the wall and nail a layer of fire-code drywall over that. The combination of air pocket and vapor barrier seems to keep the fumes from wandering. Floors should have the barrier and drywall installed on the ceiling below.

Don't entirely discount spraying outside, if weather permits. This can be a

pleasure or a disaster, depending on the wind, number of birds and how many flies in your neighborhood enjoy doing headers into fresh lacquer. In any case, don't forget to wear your respirator. Despite what you think, that gentle breeze will not waft away those harmful fumes. □

David Shaw is a professional wood finisher in Kelly Corners, N. Y.



In this western Massachusetts furniture shop, a corner of the old fabric mill the shop is housed in has been converted into a spray booth. The explosion-proof fan (Dayton 6K734M, ¼ HP) is mounted in a frame fitted with a sliding door so the booth can be sealed up during cold weather. Incandescent lamps are enclosed in explosion-proof fixtures and wired through metal conduit. Furnace filters installed in the double doors leading into the booth filter dust from incoming air, allowing spraying while normal shop operations are underway. A fire extinguisher and a combustible-waste can are located just outside the booth doors. The hardware shown here is available through local industrial supply houses or from McKilligan Industrial and Supply Corp., 435 Main St., Johnson City, N.Y. 13790.

held up with one hand and sprayed from all angles. Each leg of the desk was screwed to a three-wheeled dolly, making it easy for one person to move it around.

Sometimes, if a piece seems particularly complicated to spray, I'll run through the motions of spraying without pulling the trigger. My objective is to formulate a pattern so I can coat the piece evenly without forgetting where I've already sprayed. It's important to learn to see the lacquer going on. This is best learned on flat, horizontal surfaces because it's easier to position yourself at the proper angle to a light source. I move the gun at a distance and speed that puts the lacquer down in one full, wet coat, producing a shiny, evenly wet film. Moving the gun too fast will leave a spotty, thin coat. Go too slow and you risk runs and sags, especially on vertical surfaces. Always start moving the gun before you start spraying, otherwise the lacquer will puddle.

I began the desk-spraying schedule by applying the first coat of sealer. Sanding sealer is a high-solids-content lacquer loaded with stearates which give it a dense, milky appearance. Sanding sealer serves several purposes. It contains additives that raise the grain slightly, creating a firm bond and good adhesion. The high solids content of the sealer helps fill the small pores and the stearates make it very easy to sand.

In spraying, the order of events is less important than gun position. The drawing on p. 71 gives some tips on how to position the gun. As a general rule, though, I begin with the more difficult, small surfaces and work toward the larger, flat surfaces. I try to do the vertical surfaces first, then the horizontal and if the piece has inside corners—a drawer, for example—I start there first, progressing toward the outside.

Closed structures, like the desk's pigeonholes or the inside of a cabinet, present special problems because the atomized spray tends to rebound, creating a blinding fog. To avoid this, I spray a quick burst with a slight sweeping motion in each compartment. With the inside coated, I work my way around to the outside taking care not to get too much lacquer on the front edges, which were partially coated when I sprayed the inside.

With double-sided pieces, like the desk lid, spray all four edges and then the top. Once the film has dried to the touch, flip the lid over and spray the back side. Be sure to spray both sides on the same day, otherwise you risk the wood warping from uneven moisture exchange. Spray the last coat on the surface that will show in the finished piece. Usually, applying two coats of sealer is sufficient.

Allow each coat of sealer to dry no less than an hour before spraying the next coat. On unimportant surfaces like backs and bottoms, you can "speed dry" the sealer by blowing it with air from the gun and second coating right away. An hour after spraying the second sealer coat, I sand the wood with 220-grit dry silicon-carbide finishing paper. If the sealer coat brings out an area that should have been sanded better, sand down to the bare wood, then spot spray the area with sealer. I blow the white powder left from sanding off with compressed air. Don't worry if a small amount of the powder remains, it will melt into the next coat.

After you've sanded the second coat of sealer, you can spray the first coat of lacquer, employing the same routine as for the sealer. I let the first lacquer coat cure overnight then tackle touch-ups the next morning. The first coat of lacquer will show up any light patches in the wood. These can be touched-up with blending-powder stains mixed in a paper cup with 2-lb.-cut shellac and padded or brushed on. Blending-powder stains are made

especially for spot touch-ups and come in a very wide range of colors. I have a small touch-up kit from Mohawk that contains 21 one-ounce jars of blending powders. It has black, white, red, yellow and blue with many other assorted wood tones that can be mixed to match any tone I need.

With all the touching-up done and only clear lacquer to spray, I keep an eye out for any surface defects I missed. Everything gets two good coats of clear gloss lacquer, with at least an hour drying time between and no sanding. Burn-ins are done at this point, then two more coats. When this last coat is dry, about an hour, I do any burn-ins I missed earlier. With three coats of gloss on the surface, I feel safe leveling a burn-in without sanding through to the wood. Then the sixth and seventh coats are sprayed on and allowed to dry overnight before sanding everything with 220-grit wet-or-dry finishing paper. Sanding can be done by hand or with an electric or pneumatic orbital sander. After a quick dusting, the piece is ready for the final coats. By the time you spray the final coats, you will have acquired some experience with your gun (and the piece) so these coats should be your best.

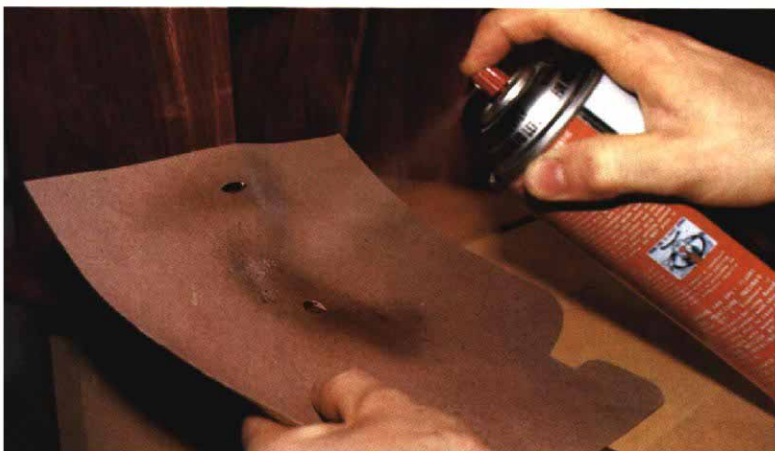
In spraying the final coats, and perhaps even the base coats, you may encounter some problems. One of the most common is orange peel, a finished surface that looks slightly bumpy with the surface texture of an orange. Orange peel occurs when the lacquer is too thick or if it dries too fast, before it has a chance to flow out. To prevent it, make sure the previous coats are sanded well so the surface is level, then make sure the next coat is a full, wet one. If orange peel is severe, adding a drying retarder to the lacquer will slow the drying time and help the lacquer to flow out. On humid days, retarder will also allow moisture from the atmosphere or your compressor to escape before the finish dries, preventing a milky film called blushing, another common lacquer problem.

If you are refinishing an old piece of furniture, the lacquer may form small craters called fish eyes. Fish eyes are usually caused when traces of silicone from old furniture polish prevent the lacquer from adhering to the wood. Tools that have been sprayed with a silicone lubricant can transfer the stuff to new wood with the same miserable results. A few drops of an additive called fish-eye preventer usually clears up the problem. Once fish eyes have occurred, the best way to seal in the silicone is to mist on three very light coats of lacquer, followed by regular wet coats again.

Rubbing out the film—Once the final coat has dried overnight, you can begin rubbing out the finish. I first sand everything (except high-wear surfaces, which are treated differently) lightly with 600-grit wet-or-dry paper lubricated with water to which a small amount of dishwashing soap has been added. The purpose of this sanding is to level off any dust specks that may be caught in the lacquer. But if the surface feels smooth already, I go directly to rubbing with 4/0 steel wool lubricated with water and steel-wool lubricant. Mohawk calls its steel-wool lubricant Flat Lube, while Star sells one called Steel Wol-Wax. To use either type, dip the wool in the can, getting a small amount of lubricant on the pad. Squirt some water on the pad and start rubbing the surface in broad, long strokes with the grain. I start out rubbing lightly on an area, wiping the surface dry now and then to see how it looks. Usually, brisk medium pressure is all that's needed. If there's a small amount of orange peel in the lacquer, the rubbing will smooth it over. After rubbing, wipe everything down with a rag and clean water, then



A careful rubdown with wet-or-dry sandpaper, lubricated with soapy water, dislodges dust nits and levels the lacquer film. Johnson completes the job with 4/0 steel wool lubricated with a commercial steel wool lubricant.



Even a multi-coat lacquer finish is only a few thousandths of an inch thick so rub-throughs are inevitable. They're repaired by spot touch-ups with aerosol lacquer. Johnson has masked the desk's pencil trap (middle) and he uses thin cardboard to mask the aerosol's spray pattern (above).

immediately dry the surface with clean, soft rags.

The tops of tables, desks and chests require more attention because their surfaces are closely scrutinized. I sand these with 400-grit wet-or-dry finishing paper on a pneumatic straight-line Sander lubricated with soapy water. Don't try this with an electric orbital sander, the shock hazard is too great. Hand sanding is fine. In either case, the final sanding with 400 grit should be done by hand. With the top sanded to my satisfaction, I dry it off with a rag and start rubbing with dry 4/0 steel wool. The beauty of dry 4/0 wool is that you can see exactly what's happening so you can achieve a nice even pattern. I rub the entire surface briskly, concentrating a few short strokes on the edge and then continuing the long strokes, always in one direction. The dry-wooling has brought the sheen up considerably from the 400-grit sanding, but it still appears a bit hazy. Satisfied that the sheen looks even, I add wool wax to a new piece of 4/0 steel wool, along with water, and continue with brisk rubbing.

This step goes very quickly. I check the sheen now and then by brushing some of the sudsy rubbing sludge aside with my thumb. When the sheen looks right, clean it up with water and clean, dry rags. A semi-gloss sheen is produced by thousands of minute scratches in the surface, so if you want a higher gloss you have to keep rubbing, making ever-finer scratches. Sometimes on dark woods, I rub the lacquer with rottenstone and water on a rag, bringing up a higher gloss. It's important to remember that if you didn't get an even scratch pattern with one of the coarser abrasives earlier, it will show up more as the gloss increases. For super-glossy finishes, I sand with 1,200 grit or finer instead of 400 grit, following up with automotive buffing compound.

When I had completed rubbing the desk, I noticed that I'd rubbed through the lacquer around the pencil trap on the lid. To fix this, I taped off the surrounding area then sprayed the trap with semi-gloss from an aerosol can. It's important to pull off the masking while the new lacquer is fresh, otherwise you risk tearing the film later. I also found minor rub-throughs near a couple of edges and touched them up by masking the aerosol spray pattern with a piece of thin cardboard. After the touch-ups had dried for an hour, I rubbed them lightly with steel wool and Flat Lube to blend them in. Rub-throughs that are too difficult to spray can be fixed with thinned lacquer applied with the side of a small touch-up brush or a small piece of dense felt.

One last dusting with a soft rag and the piece looks beautiful. Ship it. □

Greg Johnson is a professional finisher and woodworker. He lives in Newton, Mass. Photos by author.

Sources of supply

Lacquers, sealers, thinners:

Grand Rapids Wood Finishing Co., 61 Grandville Ave. S.W., Grand Rapids, MI 49503.

Randolph Products Co., Park Place East, Carlstadt, NJ 07072.

H. Behlen & Bros., Inc., Route 30 North, Amsterdam, NY 12010.

Lee Valley Tools, Ltd., P.O. Box 6295, Station J, Ottawa, Ontario K2A 1T4.

Spray guns and pneumatic equipment (write for the location of the nearest distributor):

Binks Mfg. Co., 9201 W. Belmont Ave., Franklin Park, IL 60131.

The DeVilbiss Co., P.O. Box 913, Toledo, OH 43692.

W.W. Grainger, Inc., 5959 W. Howard St., Chicago, IL 60648.