

Spray-Painting Trim

Preparations and priming make or break the job

by Byron Papa

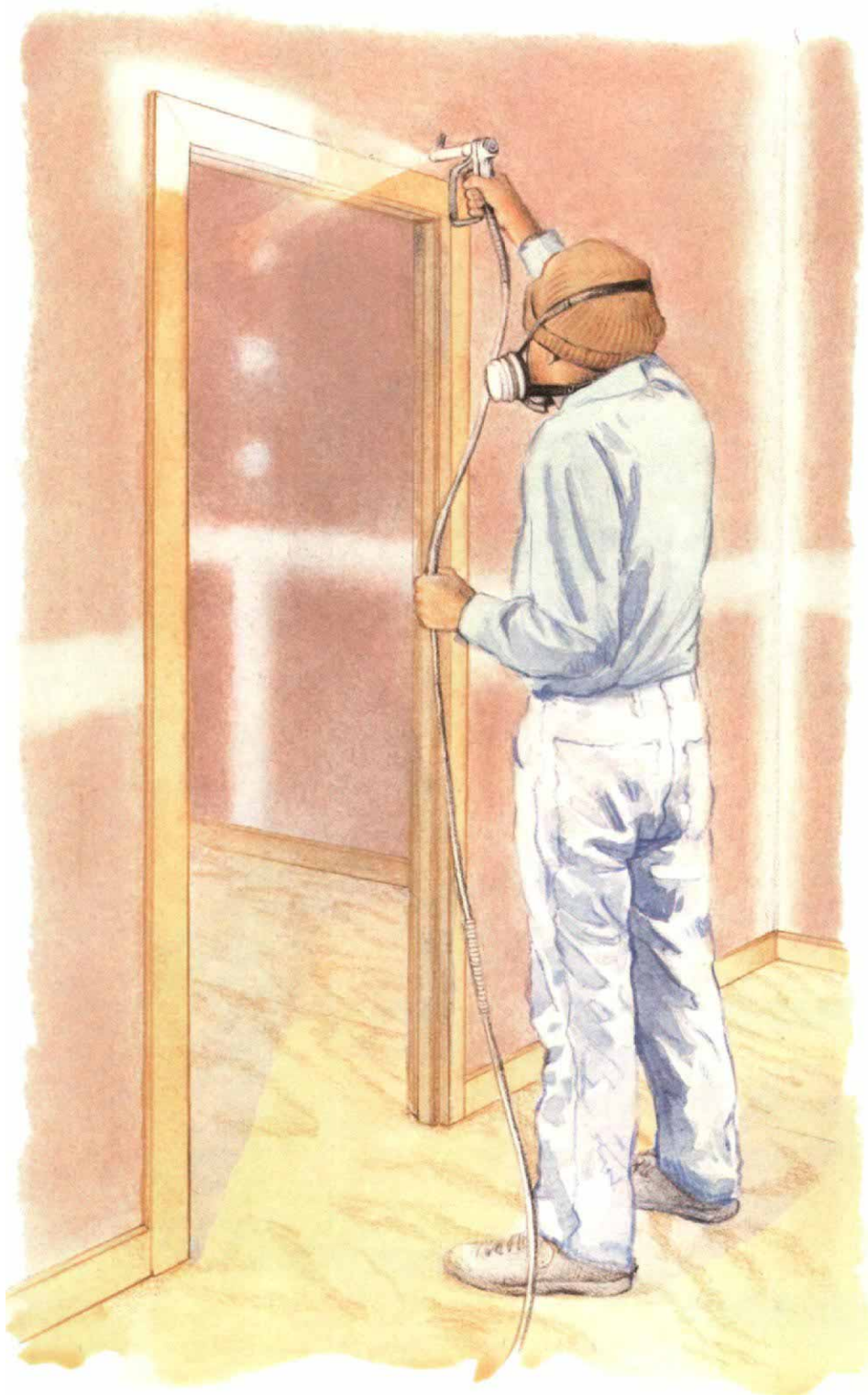
Painting is often considered a trade that doesn't require much skill. I guess that's because almost anyone can pick up a brush and apply the paint, whatever the outcome. It may not loom large in a construction budget, but the painter's work almost always shows up more than anyone else's. When you walk into a house and look around, most of the visible surfaces are finished with some type of a coating that has been applied by a painter. A truly professional job can upgrade the quality of a house, and even be the deciding factor in a sale.

Every painter has opinions as to how best to apply paint, stain and varnish, and indeed, there are many ways to get the job done. Some of my methods are pretty ordinary—some are not. In this article, I'll talk about painting in general, some of the tools and equipment involved and how I finish trim with oil-base enamel paint.

There is a spraying revolution going on in the painting business today. Many suppliers nowadays even have spray-equipment departments. Most of this hoopla stems from the development and maturation of the airless paint sprayer, which can handle thick house paints and coatings better than past contenders. Some painters spray nearly all of their work; diehards never get near the gadgets. In my own work, I strike a balance. I certainly use spray equipment, but for residential jobs I find its usefulness to be somewhat limited, especially for exterior work. Most of the time when I do spray, such as with doors and trim, it's for the quality of the finish rather than the speed of the tool, since the extra masking and cleaning up usually tip the scale against any time saved.

On most new houses, the walls are painted first, followed by trim. I do just the opposite, and here's why: Common flat latex wall paint is easily damaged during construction. If walls are done early, carpenters, plumbers, electricians and all the other crews will have more time to smudge and gouge them. This can be frustrating and costly to the painter, and can lead to confrontations with other subs.

Second, I paint trim with a spray gun, and this way I don't have to worry about getting overspray on the walls. Trim benefits from spraying more than the walls do because most trim paints and varnishes have a glossy finish, which will magnify brush marks. Also, paintbrushes con-



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stantly pick up dust and spread it along the work. Using a spray gun, I can paint a whole house full of doors and trim in a few hours, and all of the preparation can be done alongside other crews.

The major drawback to doing trim first is having to go back later and mask it off to paint the walls, but since I paint the walls with brushes and rollers, I can get a clean edge with a single strip of tape.

Health hazards—There are health hazards associated with painting, and I do my best to protect myself and my co-workers from them. For sanding and dusting, I use 3M #8710 disposable non-toxic particle dust masks. These can last a week or more, and they block dust particles better than the other masks I've used. They do cost more than the budget versions and they can be hard to find; try the 3M consumer information number for local distributors—(800) 328-1667. I have had problems with their rubber straps coming loose after only a couple of days of use. I remedy this by smearing a dab of white glue around the area where the straps connect to the paper filter.

When I'm using a spray gun, I wear a twin-cartridge Binks respirator (Binks, 9201 W. Belmont Ave., Franklin Park, Ill. 60131). Its charcoal filters work for nearly all kinds of paint and varnish, but they have to be changed fairly often. Generally, when I begin smelling paint through the respirator, it's time for a change. I also wear a cheap knit hat when I spray, to keep paint mist out of my hair.

Different woods—Painters don't often get to choose what gets painted and what gets stained, but the type of wood being used for each job can make a big difference in the results. I build my own houses now, and whenever I have the choice, I finish my trim with enamel paint and save the varnish for cabinets and bookcases. Most door casings and trim moldings are made from less expensive softwoods, such as white pine. These woods take on stain poorly. If the clients are set against painted trim, I'll at least try to persuade them to go natural—varnish on unstained wood.

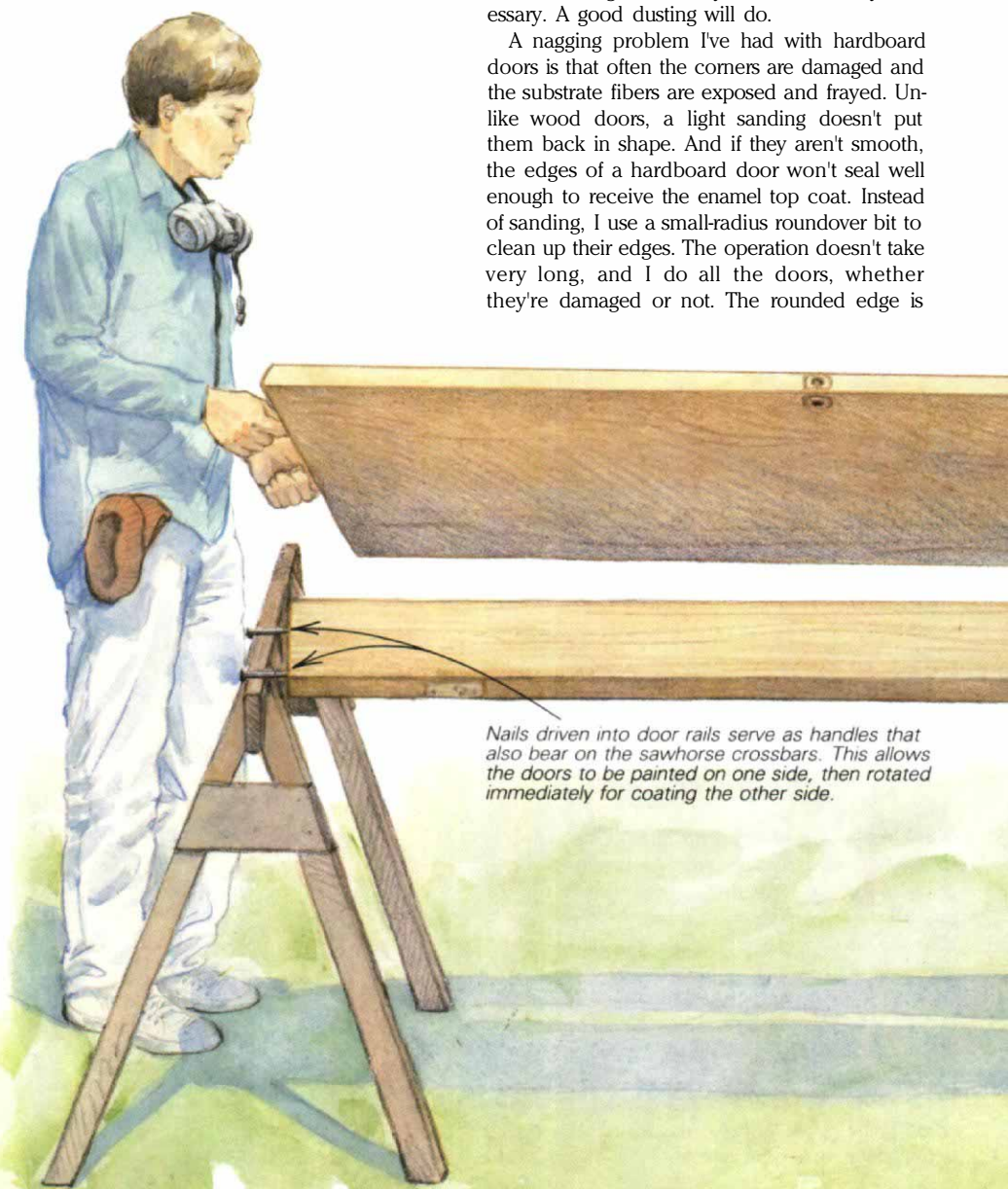
For the best enamel-paint job, you want a tight, closed-grain wood. White pine works pretty well, and is widely available. I think Douglas fir is lousy for painted trim—its grain tends to rise and it requires a lot of sanding. My favorite trim wood is parana pine. Since it grows near the equator (mainly in Brazil), it is almost without annual growth rings. Its smooth texture takes enamel paint exceptionally well. If the cabinets are to be enameled, birch and basswood are good choices.

General preparation—With my system of painting trim, preparation is about 90% of the work. I start by taking down all the doors and removing their hinges and hardware with a cordless drill and the appropriate bit. Next I number the doors with an ink marker. I write the number on the doorknob mortise or on top of the door (not on the bottom, because some doors may be cut shorter for carpets before they are re-

hung). Then I mark the strike mortise on the jamb with the corresponding number. I also label hinge mortises on doors and jambs with a #2 or #3, designating the number of pin loops on the hinge plate. This is not absolutely necessary to get them back together, but it does make it easier. For bifolds, I label each pair with the same letters, and I draw arrows on their top rails that show where they meet.

I don't want the marks to be obscured by the paint, so I cover each one with a piece of masking tape. Then I gather all the hardware and put it in small buckets, keeping various screw sizes separated, and cover the buckets with aluminum foil to keep paint overspray out. I store the buckets out of the way in a fireplace or tub.

I lay the doors across sawhorses to remove their hardware, and while they're in that position, I drive a pair of 12d common nails into their top and bottom (drawing, below), about 6 in. in from the edges. The nails act as handles, and they bear on the sawhorse crossbars. This allows me to paint one side of the door, and then rotate it to paint the other side without having to wait for the paint to dry.



Sanding—Sprayed enamel builds up a fairly heavy coat, which is usually enough to hide slight surface imperfections such as planer marks. So I don't ordinarily sand trim before I prime it. If I'm going to apply a stain or varnish to a piece of trim, I'll sand out the planer marks with 150-grit paper.

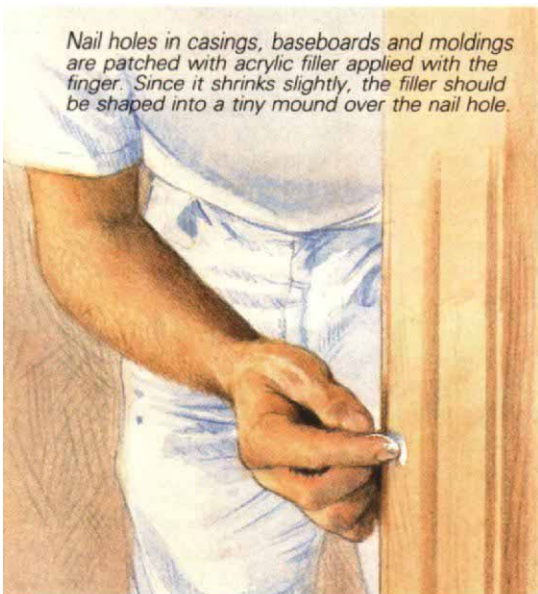
For solid, raised-panel doors (usually white pine or fir), I use a one-third sheet orbital sander for the flat surfaces and sand the rest by hand. If they're to be painted, I use 100-grit, but if a natural finish is desired, I go no coarser than 150-grit. The same goes for flush veneer doors. Sometimes the edges of doors are a little rough, so I carefully belt-sand them with 80-grit or 100-grit. I also smooth over the corners of each door edge with a piece of 100-grit.

Hardboard door prep—Hardboard doors, such as the ones made by Masonite, usually come factory-primed. But I don't always find the primer coat to be adequate. It's often thin and spotty, and I've seen them with unprimed edges. Sometimes I just spot-prime these doors, but if a primer job is bad enough, I reprime the whole door. Sanding the factory coat isn't usually necessary. A good dusting will do.

A nagging problem I've had with hardboard doors is that often the corners are damaged and the substrate fibers are exposed and frayed. Unlike wood doors, a light sanding doesn't put them back in shape. And if they aren't smooth, the edges of a hardboard door won't seal well enough to receive the enamel top coat. Instead of sanding, I use a small-radius roundover bit to clean up their edges. The operation doesn't take very long, and I do all the doors, whether they're damaged or not. The rounded edge is

Nails driven into door rails serve as handles that also bear on the sawhorse crossbars. This allows the doors to be painted on one side, then rotated immediately for coating the other side.

Nail holes in casings, baseboards and moldings are patched with acrylic filler applied with the finger. Since it shrinks slightly, the filler should be shaped into a tiny mound over the nail hole.



less susceptible to future damage, and it takes a coat of paint better than a sharp corner.

If you do this, be careful when approaching the hinge and latch-bolt mortises. If the bit's pilot slips into them, the cutters will gouge the door edge. I usually skip these areas and finish up later with an 80-grit sanding block.

Filling nail holes—When the trim is to be painted, I fill the nail holes first. There are two common types of premixed fillers on the market. While they are both latex based, the new "lightweight" variety uses tiny air-filled glass balls as aggregate. The lightweights dry faster and shrink less than the old formulas, but they are softer and shouldn't be used to patch vulnerable areas.

A putty knife can be used for filling big dings like hammer dents on a jamb, but for nail holes the filler is most easily applied with a finger, as shown in the drawing above. I keep a wet towel on hand to clean the excess off my fingers. After I push the filler deep into the hole, I smear it flush. Next I build up a small mound of filler over and around the hole to allow for shrinkage. When it's dry, I sand lightweight filler flush with 150-grit or even 220-grit paper. For the old style I use 100 grit.

Sometimes sanding will reveal small pits on the surface. These are trapped air pockets. To avoid them, apply the filler from side to side when you make the little mound, instead of pushing it directly on top of the hole.

Masking—One of the most time-consuming tasks that precedes spraying is masking the areas not to be painted. Often this simply amounts to protecting a couple of fiberglass showers and some window glazing. But sometimes the effort it takes to protect the unpainted surfaces overshadows the benefits of a spray job. An extreme case would be a room with natural roughsawn wood on all the walls next to a painted plate rail. Not only is that a lot of area to mask, but tape doesn't stick well to rough wood. Whether to spray in cases like this just depends on how much trouble the painter is

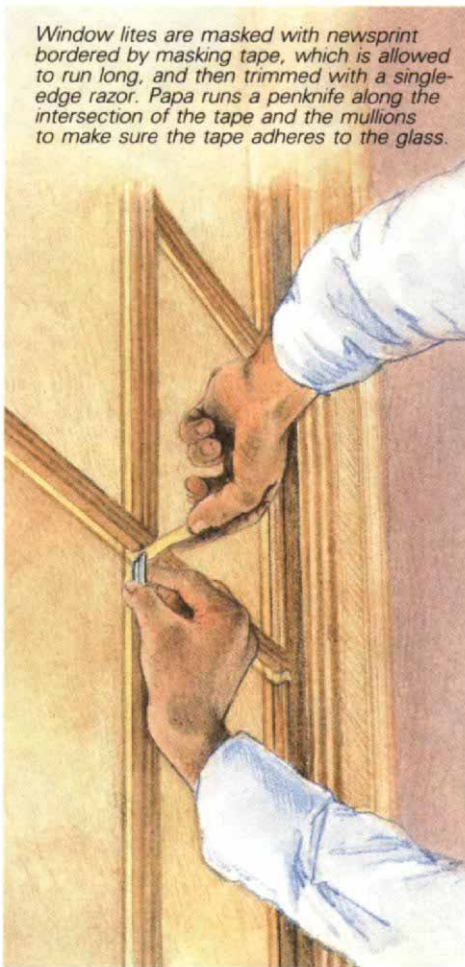
willing to go through. For a nice cabinet, it might be worth it. I once erected a plastic "tent" to spray a built-in china cabinet in an existing house. It worked out well.

For all masking chores, it's important to use good-quality tape. A good tape should stick to the work, even when it comes in contact with strong paint solvents. It should also be easy to remove, even weeks later. Lately I've been using Sherwin-Williams' Professional Quality tape. It is one of the best brands I've ever found. Automotive paint supply centers usually have very good tape, but the price can be high. For most work, I like to use 1½-in. tape—it's a good universal size. Remember that even a good tape can be difficult to remove if it's been exposed to direct sunlight for more than a few days.

Besides tape, I keep on hand a horde of single-edge razor blades. They're cheap and they cut clean. For protecting large objects like tubs and showers, I use inexpensive lightweight plastic dropcloths taped along all edges. A 4-mil thick 9-ft. by 12-ft. dropcloth costs about \$.75. For large glass and other flat areas, I use newsprint paper. I buy the end rolls from our local newspaper for next to nothing. The ones I get are about 2½ ft. wide and a single roll can be enough for several houses.

Masking window and door glass usually takes the most time. If the glass areas are big and don't have too many muntins, I use paper, taped down securely at the edges (drawing, below). If I'm masking a French door with scads of lites, I

Window lites are masked with newsprint bordered by masking tape, which is allowed to run long, and then trimmed with a single-edge razor. Papa runs a penknife along the intersection of the tape and the mullions to make sure the tape adheres to the glass.



use tape exclusively. I use two strips of 3-in. tape, followed by a strip of whatever is needed to fill the remaining space. I start at the top and run each strip of tape all the way down the door or window at once, tucking it tightly against the muntins with my pocketknife as I go. After all the tape is applied, I come back with a razor and cut the tape at each point where it meets the muntins and peel away the unwanted pieces.

It can be aggravating for a painter to have to stop in the middle of spraying a coat of primer to mask off something somebody forgot, so when I think everything is taped, I go into each room and take another good look around, imagining the sprayer at work.

When I'm done masking and sanding the filler, it's time to dust and vacuum. An air compressor with a blower attachment works great for dusting door casings and doors, but I usually just use an old paintbrush. After cleaning all the work to be painted, I vacuum the floor out to about 1 ft. away from all the baseboards and door casings. I also use a crevice attachment to suck up any dust that may be trapped under the baseboards and casings.

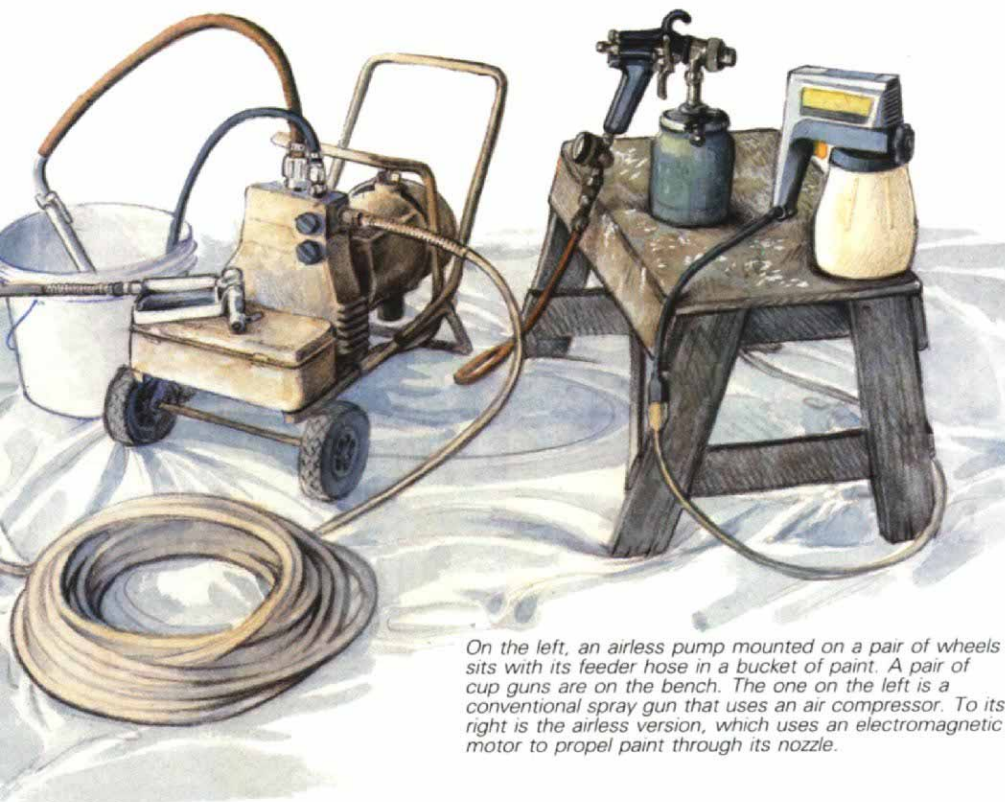
Paint sprayers—Conventional air spray systems that work with air compressors aren't used very often in house painting. They're mainly designed for spraying thin coatings, and they are easy to use. I use my Binks Model 7 to spray cabinets and bookcases with lacquer, varnish and occasionally, very thin enamel paint. It's one of the most reliable tools I've ever owned.

Airless sprayers are far more popular for houses. They can handle heavier coatings, less thinner is required, they're faster and they don't require an outside air compressor. While conventional sprayers use compressed air to atomize the paint, airless sprayers simply pump the paint at high pressure through a hardened steel tip that atomizes it into a usable pattern.

The most common airless sprayers are hand-held cup guns. Most of them use a tiny piston pump that is activated by a small electromagnetic motor, which makes a loud buzzing sound. I started out using these little sprayers (Wagner 350s) over a decade ago, and they worked out okay, but they do have limitations. They're pretty slow and can be finicky at times. I learned early on to discard the "cone-spray" tips that are usually supplied with the guns and replace them with the longer-lasting tungsten carbide "fan-spray" tips that spray a flat pattern. A cone pattern is more difficult to control than a fan pattern, yet ironically, most of these small cup guns are intended for first-time users.

I still use airless cup guns for small jobs, because they're so easy to prepare and clean, but for most of my spraying I use an airless pump system. It consists of a heavy-duty stationary pump (drawing, facing page) tied to a lightweight gun by a length of high-pressure hose. This is the serious painter's tool. They are expensive (in the \$1,500 range), but they can often be rented at contractor's rental yards.

Manufacturers use various designs for their pumps, and each has claims of superiority. For a small painting business like mine, I prefer the diaphragm pump. It costs less initially and is



On the left, an airless pump mounted on a pair of wheels sits with its feeder hose in a bucket of paint. A pair of cup guns are on the bench. The one on the left is a conventional spray gun that uses an air compressor. To its right is the airless version, which uses an electromagnetic motor to propel paint through its nozzle.

easy to repair, even on the job. I have an old Wagner/Spray Tech 1000 Super that I bought in 1977, and it's still kicking. I stock most of the parts that are likely to fail and carry them in my paint truck. I've replaced just about everything at least once and don't plan to junk it until the motor gives out.

But airless sprayers do have disadvantages. First and foremost, they can be very dangerous. Because of the high pressure involved (2,500 psi or more), paint can actually be injected through the skin, causing serious injury (with a possible risk of amputation). Guns and tips are usually equipped with a safety tip guard, but this doesn't completely remove the danger. Users often remove the guards (me included) because mist can accumulate on them, causing drips. It's a good idea to keep your local poison-control center phone number on hand, just in case. The national number is (412) 681-6669.

Airless pump systems generally spray at a fast rate and can be difficult to control, especially in tight areas. Also, their tips wear out fast and they are expensive to replace (\$15 to \$30 apiece). A worn tip will spray unevenly and will tend to use more paint. A nagging problem is tip clogging—the slightest solid particle can block the paint flow. Manufacturers have dealt with this problem in several ways. My favorite solution is the reversible tip. When a particle gets lodged, you just flip the tip around, pull the trigger and it blows out. Flip the tip back around and you're ready to spray again.

Besides styles, there are many different sizes of tips available, and you have to use the right size for each type of paint or varnish. The orifice can vary in size from .009 in. to .050 in. or more, but for most house painting .011 in. to .017 in. is the common range. I use .011 for varnish and lacquer, .013 in. for interior wood

primer and enamel, and .015 in. or .017 in. for heavier stuff like exterior primer and latex paint.

Also, each orifice size is available in a variety of fan-spray patterns. This refers to the actual width of the fan-shaped stream of paint measured in inches, at a distance of 1 ft. from the tip. I use 6-in. to 8-in. fans for most of my work—that's a good universal range.

Though both airless and conventional cup guns are easy to clean, cleaning an airless pump system takes time and a lot of solvent, so the job size has to justify its use. I usually don't fire up the airless for anything less than three gallons.

Another spray tool I often use is the aerosol spray can. It's hard to beat for small primer, varnish and lacquer jobs and touchups. I don't mind using them because nowadays many manufacturers offer the new FANSPRAY heads that actually spray a true fan pattern, just like a professional gun. On most of them the tiny valve nozzle can be rotated to change the fan from a vertical plane to a horizontal plane. These heads are truly amazing and in my view, make the old ones obsolete. They've been around for a few years, yet their presence is more the exception than the rule.

Before you spray anything—When I first began painting houses commercially, I learned a lot about the trade from reading. Half of what you need to know is written on the back of the paint can. Most labels describe the product, give specific preparation and application instructions, and warn of potential problems and dangers. A lot of mistakes can be avoided by checking this information before starting work.

Most paint manufacturers make available other literature about their products and how best to apply them. Sometimes this information is available in the store for the asking; other times you

have to write for it (ask for a specifications manual). I use *Consumer Reports* magazine for information too. It usually has at least one or two articles a year on some type of paint or related product with brand-to-brand comparisons.

Primer—For most interior priming, I use an ordinary alkyd (synthetic oil-base) enamel undercoat. Every paint company makes one. I've tried several brands and they're pretty much alike, though you can sand some of them a little sooner than others. Lately, I've been using Sherwin-Williams Wall and Wood Primer. It sands well the next day. I use a fast-drying oil primer, called Kilz (Masterchem Industries, P.O. Box 2666, St. Louis, Mo., 63116) for special odd jobs when I'm in a hurry. But for the most part I find it gives off too many fumes for the bulk of my work, and it doesn't sand as well as the old-fashioned alkyds.

New paint is usually pretty clean and can be used as is, but older stuff might have to be strained through a filter. Inexpensive paper funnel-shaped filters can be used for small amounts. For larger quantities, nylon sack-like strainers are usually available from paint suppliers in both 1-gal. and 5-gal. sizes. I've also found that a large kitchen strainer is good for removing dried lumps and other big particles. It can be cleaned and used over.

The day before I spray, I mix all the primer I'll need for a job. In estimating, I always figure a little strong—running out to the store for more paint in the middle of spraying a job can be very disruptive. I mix the primer in 5-gal. drywall buckets and thin it about 15%, making it a little thicker than heavy cream. It's better to have a little too much thinner than not enough. Without enough thinner, the paint film won't level out properly. Too much thinner can cause the paint to run, but this can be overcome by spraying lighter coats. Ordinary paint thinner can be used, but I prefer naphtha. It evaporates at a much faster rate, which helps in two ways: the paint film sets up faster, and has less chance to sag or run.

Spraying primer—I spray two coats of primer on wood trim. This leaves a heavy enough film to smooth out slight imperfections in the texture of the wood, and enough primer after sanding to provide a good seal.

To begin, I set up the pump near the house entrance, and start spraying at a point farthest from it (usually the bedroom areas). The hose is 100 ft. long, so I can usually reach any place in the house from this setup. Airless paint hose is very stiff and can be difficult to handle without running it into freshly painted work, so it's best to have a helper assist in guiding it around the house as you spray. I also use a 30-in. "whip end" hose next to the gun—it's more flexible.

I spray a medium to light coat first, just enough to cover the wood. The adjustment is in how long a pass the gun takes over the work. The first coat is more likely to run than the second coat, so it can't be applied too heavily. While it's setting up, I have someone go around with a paintbrush and light to check for sags and runs. They'll most likely occur at overlap points,

like the mitered corners of casings (drawings, below). Ventilation helps the paint set up more quickly, so I always crack a few windows.

When the first coat is set (preferably dry to the touch), I spray on the second coat, which is considerably heavier. Some of the solvent from it dissolves into the first coat, and reduces the chance of sags and runs.

To keep everything moving, I do all the doors and any loose moldings between the first and second coats on the trim. I always try to do them outside, using the sun and fresh air to promote faster drying.

After I've sprayed one face of the doors, helpers turn them over immediately, handling them by the nails. This way, I never have to stop spraying. I spray two coats on wood doors, just like the trim. I leave the doors on the horses, lying flat, until the primer has set up. This eliminates sags and runs. If the sun is shining, I won't let them stay out long because they might warp.

A note of caution: When spraying outdoors, always watch where the wind takes the overspray, so as not to damage nearby property. Though the airless-sprayer industry from its inception has been boasting "less overspray," the

overspray mist that is produced is made up of larger particles than that of conventional sprayers, and it shows up more on cars and the neighbors' houses.

Sanding the primer—I sand all the primed surfaces with wet/dry silicon-carbide sandpaper. It holds up well, has a stiff backing and isn't affected by humidity. It's more expensive, but it lasts longer than cheaper papers. To save money, I buy standard 9-in. by 11-in. sheets by mail order, for about half of what they cost in paint stores, from Industrial Abrasives Co. (642 North Eighth St., Reading, Pa. 19603). The grits I use most often are 220 and 320.

Primed wood is a little rougher than primed hardboard, so I use 220-grit for sanding it. That's about as coarse as you can go without the risk of scratches showing through the enamel top coat. To get the most out of a sheet, I fold and cut it with a razor into four strips $2\frac{3}{4}$ in. by 9 in. I fold each strip into thirds, which makes a stiff, easy-to-handle pad. When folding sandpaper, never let a grit side contact another grit side. Otherwise, as they rub together, much of the cutting edge is destroyed before it's even

used. Shallow planer marks and other minor defects will usually sand out with a few passes.

For the primer on hardboard and steel doors, 320-grit is usually coarse enough. Heavier grits can go through the thin primer. I use an aerosol spray can of fast-drying Kilz primer to touch up any areas I sand through.

Factory-primed steel doors are usually smooth enough as is, but I never trust their slick surfaces to anchor my new paint. So I scuff them thoroughly with 320-grit to ensure a good bond. Just before spraying, I wipe them down with naphtha to clean and degrease their faces.

Caulking—After sanding, I fill cracks between molding joints with latex caulk. On painted trim, even the slightest crack can stand out as a dark line, especially on light colors. The nozzle of the caulk should be cut small and as clean as possible. I use a razor, and shape the end to a point. This way, it will leave only a tiny bead.

I do only one crack at a time because latex caulk sets up quickly. I moisten my finger with a wet towel, and then I use it to smear the fresh bead of caulk smooth. This has to be done right away or the caulk will roll into tiny solid par-

Spraying a casing

The size tip I normally use for spraying oil primer and enamel is usually designated as #1308, which denotes an orifice .013 in. and a fan-spray pattern width of 8 in. at 1-ft. distance. I adjust the fan to spray vertical. To spray a typical casing, I step to one side of the doorway and stand facing it. I start at the top (drawing, below left), holding the gun perpendicular to the face of the trim molding and about 1 ft. away from it. Trigger pulled, the gun must always be in motion.

The hardest thing about doing a

casing is the top corners—you're not able to start beyond the corner, a common rule of spraying paint. If you did start beyond the corner for the header and the vertical casing trim, there would be an inevitable overlap with too much paint build-up. Therefore, the skill lies in pulling the trigger and moving the gun at the same time. Some overlap still occurs, but it's minimal.

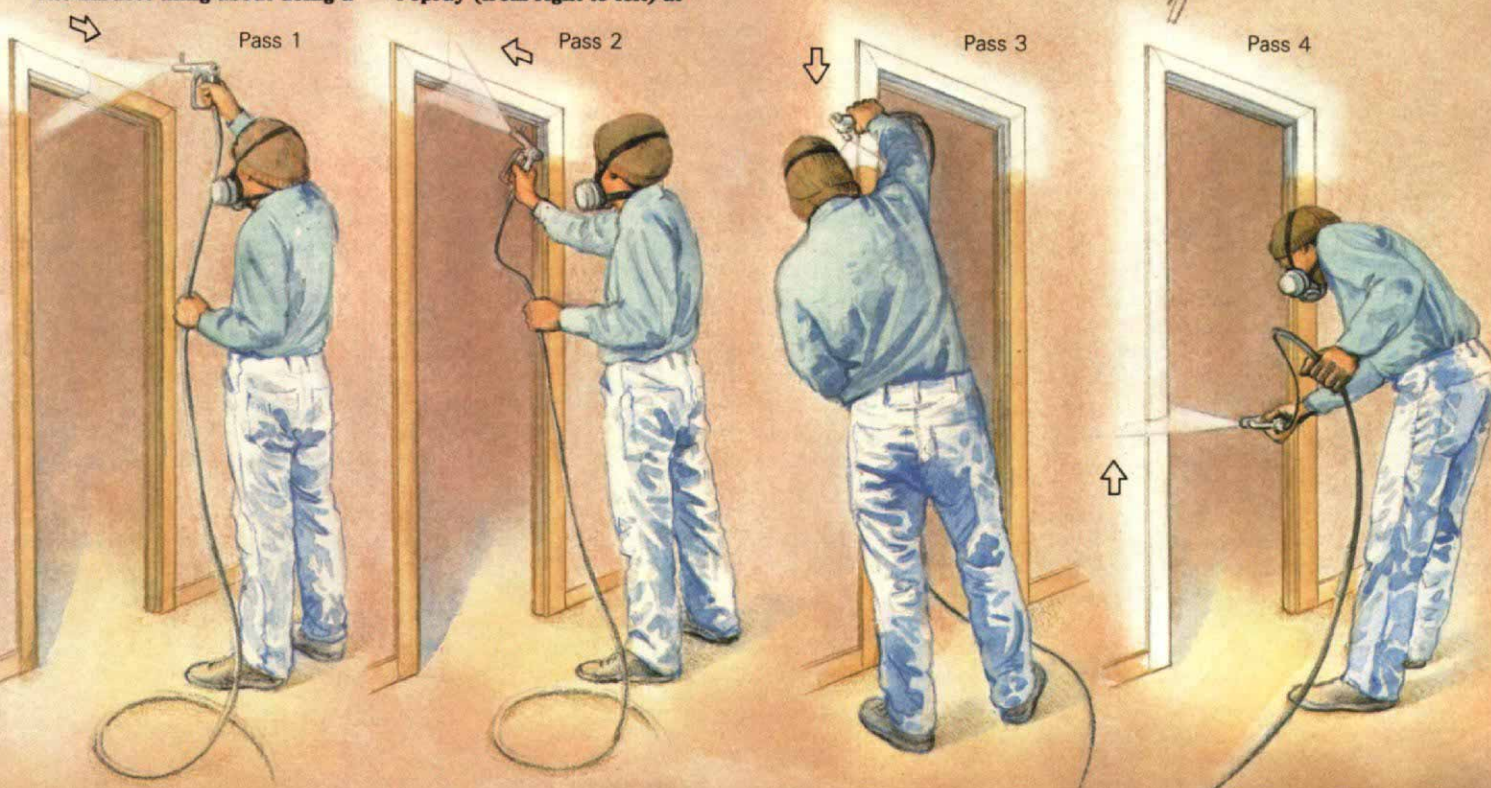
I start at the top left corner and move the gun to the right. The trigger should be released upon arriving at the other corner. Next I spray (from right to left) at

Header spraying sequence

Section through header

Pass 1: Aim to middle of trim molding.

Pass 2: Aim at point where trim molding and jamb meet.



ticles. If the caulking job is done well, the moldings will look like one, with no evidence that caulk was even used.

Applying the enamel paint—I prefer to use a semi-gloss oil-base enamel for my top coat. Oil paint sprays and levels out better than latex paint. It is also more durable, easier to clean and it has a richer luster.

I thin the enamel 10% to 15% with naphtha, depending on its consistency. I mix it all at once, as with the primer, but I try to estimate the amount required more accurately. Before spraying, all the surfaces to be painted should be dusted with an old paintbrush and the floors should be vacuumed again.

I spray enamel in much the same way as I do primer, applying the first coat somewhat lighter than the second. The second can be sprayed as soon as the first becomes tacky. If it looks too rough, it may need more thinner. Adding more thinner can partially compensate for a worn spray tip.

I follow the same procedure for the doors, but I usually allow exterior doors to bask in the sun longer, so they can be handled and rehung

by the day's end. Popular wisdom warns against painting in direct sunlight, but I've never had paint blister because of this, though in some climates it may be a problem.

When all the painting is finished, I close up the house to keep the dust down. Unlike the primer coat, the top coat can't be sanded out. The enamel is usually dry by the next morning, but is fragile and can be easily damaged for a few days. I remove all the masking tape a day or so after spraying.

Brushing paint—If you use a brush, its quality is critical. I use Praeger white China bristles (model #W-104) for oil paints. They are the best bristle brushes that I have ever come across, at any price. I use a 2-in. brush for most enamel trim, but I also keep 2½-in., 3-in. and 4-in. brushes on hand for other chores.

Brushing enamel takes a lot of time, and though it's hard to cover the work with just one coat, we always try. Most good-quality paints can cover in one coat if they're applied to an ideal flat surface, but on a job this is rarely the case. I find that the worst problem with doing trim, a door casing for example, is that the bristles

edge around corners and slide sideways onto freshly coated work. This almost always creates streaks. To help avoid streaking, I stagger the parts of the casing as I go. For example, in the morning I might do the outside edge of the casing trim molding, skip the face of the same molding, then do the inside of the molding along with the reveal, skip the jamb and do the edge of the door stop. I wait until the first sections are dry (even until the next day) before filling in. Doing it this way, you must wipe errant brush strokes off areas not being painted at the time.

Cleaning up—To clean up oil paint, I use a low grade of mineral spirits. I get it from a petroleum-products distributor for about \$1.50 a gallon. GoJo hand cleaner works well on the skin, and for the unavoidable overspray that gets on around my eyes, I use petroleum jelly. Sometimes I rub it on my hands and face before the spraying begins, to aid cleaning later, but not if I'm going to be handling some of the work to be painted—oily hands threaten adhesion.

I get first-class results from spraying my trim this way, but it's a dirty job, and I'm usually pretty glad when each "spray day" is over. □

