

Painting Techniques



Secrets of lacquer painting



Basic techniques for glass-smooth finishes

by MARK S. GUSTAVSON

photos by MIKE BARLOW and MARK S. GUSTAVSON

SOME MODELERS STILL think of lacquer painting as a black art. Other hobbyists don't think lacquer can be applied over plastic to produce a mirror finish. But some master the seemingly arcane art of lacquer painting and present stunning finishes at contests across the country.

The advantages of lacquer painting are many, but these advantages aren't always generally understood. First, lacquer is very thin and preserves subtle detail on a model. If properly applied, a complete lacquer finish (with its primer, sealer, and color coats) can

be as thin as just two average coats of hobby enamel. Second, errors in the finish can be corrected quickly because lacquer dries so rapidly. Third, the array of paint types and colors offered is generally greater than other finishing systems.

Of course, there are some drawbacks. Lacquers contain some volatile organic compounds that can be harmful to your health, but every kind of paint exposes the hobbyist to some medical risk if they're not used properly. Every potential risk can be avoided by taking the proper precautions. Work safely

and you'll be able to make the most of lacquer's numerous advantages. That's good advice no matter what kind of paint you use.

This article covers the basics of lacquer painting. We'll work through surface preparation, apply a bullet-proof sealer to avoid the dreaded appearance of "ghost" images, apply a solid color, and rub it out to glassy smoothness without a clear coat.

Our guinea pig is a mildly customized AMT/Ertl 1966 Buick Riviera (kit no. 30083). Follow along, and with a little practice, you'll master the art of lacquer painting. 

Materials



1 I use DuPont products exclusively, especially the company's Acrylic Lacquer Thinner (no. 3661S). I also use DuPont Acrylic Lacquer Retarder (no. 3979S), especially when I paint in the dry summer months. The Retarder helps the lacquer to "flow out" after it's applied to the model. Retarder is also useful if you live in a very humid area. Different thinners are available, so talk with your paint jobber to select the best thinner for your climate.



2 The best overall primer I've discovered is DuPont's Fill 'N Sand (no. 131S); it's a light gray acrylic lacquer primer/surfacer. Mix the thinner (and paint) according to the **Lacquer Paint Thinning Chart** on page 30.



3 Regardless of whether you do any bodywork, you must seal the primed surface and bare plastic. I use DuPont's VariPrime sealer (no. 615s) with DuPont VariPrime Fast Converter (no. 620S). This combination prevents "shadow" images from appearing in the completed finish.

Bodywork



1 A great finish is no better than the surface preparation under it. You should acquire a range of sanding sticks as well as some 3M wet-or-dry auto body sandpaper in 600-, 800-, 1200-, and 2000-grit varieties. You'll also need coarse 150-grit paper for rough work.

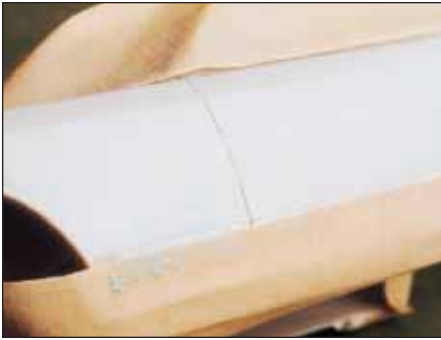


2 This project will be a mild custom, so the emblems, door handles, and other excess factory ornaments are coming off. Use a motor tool with a round cutter to lightly excavate the area around each emblem. Refer to **Figure 1** for details on how to do this.



3 Mask around the affected spot to protect the surrounding area from excess putty. Mix up some catalyzed putty (I used Evercoat's two-part polyester putty) and fill the area, extending the putty just beyond the depression. See **Figure 2** for application instructions.

Bodywork, cont.



4 Use a piece of 150-grit sandpaper to knock down the crown of the putty once it has cured. Then, grab a coarse sanding stick and complete the sanding. The flat sanding stick helps "true" the area to prevent the appearance of a crown or other surface flaw when the color is polished. See Figure 3 for detailed sanding instructions.



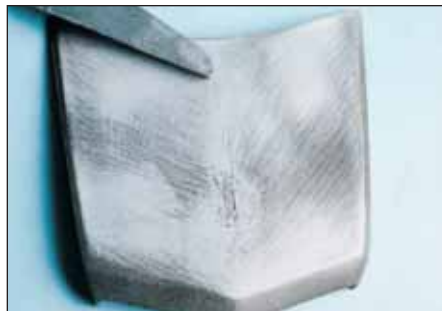
5 The hood on this model has a badly marred surface because the underhood engraving appears in a shadow pattern on the outside. Though a real annoyance, it presents us with an excellent opportunity to discuss the techniques to correct this problem. Let's also remove the chrome molding on the hood. Grind out the shape, then...



6 ...fill the gap with a strip of styrene, attached with gap-filling super glue. Don't use solvent-based glues for this step. Note that the chrome-plated trim has been stripped and attached to the front edge of the hood. After the super glue cures, apply a thin coat of polyester putty over the entire area, including the interface between the hood molding and hood. Sand the panel to true the area, then sand the entire body with a fine sanding stick.



7 It's time for the first primer coat. Wear a good, two-stage respirator when you paint. Install a medium tip on your airbrush, and adjust its air pressure to 35-40 psi. Thin the primer according to the chart below, but remember that the mixing formula is based on the primer's original thickness. Primer can thicken slightly as it gets older, so you may need to make adjustments. Apply your first coat of primer, let it dry, then lightly sand it using a medium-grit sanding stick. My first effort revealed several surface irregularities. Areas where the primer remains are "low," and areas where putty or plastic are revealed are "high." These problems are significant, so we'll prime this panel again, and apply a medium guide coat of flat dark gray lacquer.



8 Next, sand the area at a 45-degree angle to the edge of the hood using a medium-grit sanding stick. My sanding revealed a couple of persistent high spots, as well as an irregular depression along the center putty line that had gone undetected. If you have similar problems, prime the area again, apply another guide coat, and sand until these problems disappear. A uniformly gray primer surface after you sand indicates that you're ready to move to the sealer and color coats.

FIGURE 1 Remove emblem...

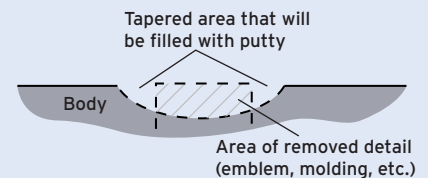


FIGURE 2 Fill with putty...

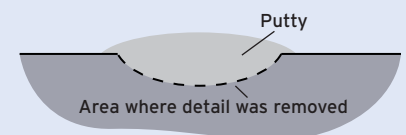
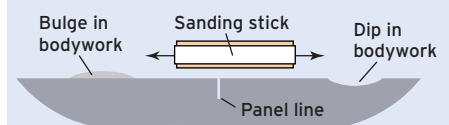


FIGURE 3 Sand smooth



LACQUER PAINT THINNING CHART

Thinning Chart

25% = 4 parts color to 1 part thinner
 33% = 3 parts color to 1 part thinner
 50% = 2 parts color to 1 part thinner
 100% = 1 part color to 1 part thinner
 125% = 4 parts color to 5 parts thinner
 150% = 2 parts color to 3 parts thinner
 200% = 1 part color to 2 parts thinner
 500% = 1 part color to 5 parts thinner

DuPont Lacquer Thinners

Fast Dry (no. 3608S)
 Medium Dry (no. 3661S)
 Slow Dry/High Gloss (no. 3602S)

Standard Thinning *

Lacquer colors 125-150%
 Lacquer clear 150-200%
 Candies 150-200%
 Final clear (after color sanding) 500%

* Airbrushes are small, and therefore require thinner paints. Always test spray to achieve a smooth flow of materials. The thinner the paint, the smoother the flow. However, the "flow" characteristics of lacquer paints are inversely related to the "hiding" ability of the colors. The occurrence of runs and sags is directly related to "thinness" of the paint. This is why it is essential to follow thinning formulas to the letter.



9 The body should also be primed, but just in those areas that have been reworked to reveal surface flaws. Mask the delicately detailed areas (such as the engraved cowl vents and molded-in windshield wipers) to protect them from unnecessary paint buildup.



10 Guide coat the trunk, let the contrasting black lacquer paint dry, then wet sand the area with a medium-grit sanding stick. Sanding didn't reveal any surface problems, so I added another coat of primer and set the body aside to dry for a while.

Prep & Primer



1 Thoroughly wash the model with liquid soap, and lightly scrub out the panel lines and other recessed areas with an old, soft-bristle toothbrush to remove sanding debris. Don't forget to clean the inside of the body, too. Wipe the model with a clean, lint-free cloth, and set the model aside to dry thoroughly. Next, apply a medium coat of gray primer to the entire model and let it dry - preferably for 24 hours.



2 At this point, sand the entire model with 800-grit 3M sandpaper (dry) to remove any surface dust. Turn and replace the paper as needed so you don't sand the model with primer-caked sandpaper. Work through the successive sandpaper grits from 800 to 2000. Wash the model again to remove the sanding debris. You can use your airbrush's air line to blow debris out of the panel lines and other recessed areas.



3 Now it's time to mix the sealer. Mix DuPont's VariPrime 50:50 with its Activator. No thinning is necessary. Mix the parts in an airbrush bottle, install the cap, and shake the bottle for a few minutes to ensure a good mix.



4 Apply a light coat of sealer to the model with your airbrush. Start on the underside of the fenders, proceed to the recessed areas, then move to the broad, flat surfaces. Don't be concerned if the sealer appears to have a bit of orange peel when it's wet - it flattens out considerably as it dries. The uniform coat of sealer should be allowed to cure for a few hours. Since the Variprime Activator is a catalyst, it doesn't really dry as much as it "sets up."

Prep and Primer, cont.



5 Some surface flaws may persist. I missed this problem on the front fender. Once the sealer had thoroughly cured (about an hour), I used a fine-grit sanding stick to wet sand the offending area. After the model was washed (again) and dried, I applied additional sealer to just this area over the bare plastic. The sealer has a "pot life" of about 48 hours after you mix it, but always shake the bottle before you reapply it.



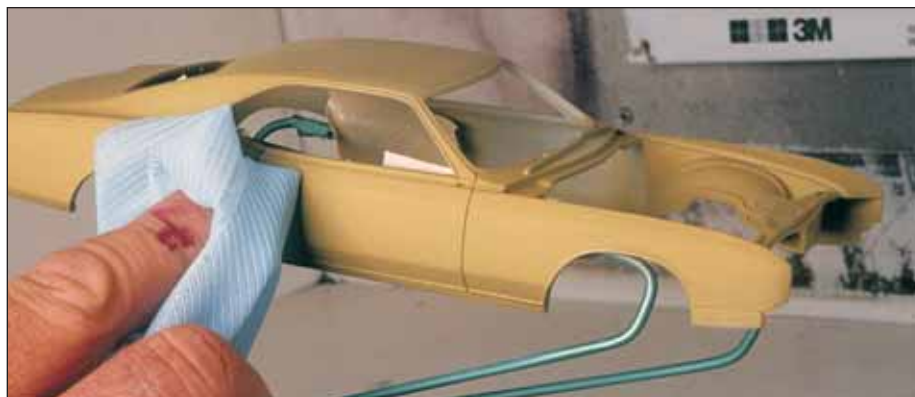
6 Let's mix up the colors coats as the primer cures. I'm using a 1996 Hyundai color with a rich, red-wine tone. A paint jobber in my area will mix up any color in the DuPont catalog in small bottles. A few phone calls will probably turn up a paint shop in your area that will do the same. Always strain the paint to remove imperfections, and discard the strainer after use.



7 Pour the paint slowly, fill the bottle to a little less than half full, then add the thinner. Leave a little space at the top for proper agitation when you shake up the mixture. Mix the paint, load the airbrush, and spray a test pattern. Mixing formulas may require a little fine tuning before everything will work the way it's supposed to.



8 Before you paint, you'll need to remove dust and other debris from the surface of the model. Gently wipe down the model with a "clear coat" tack rag. Don't use one of the old-style yellow tack rags; they can deposit beeswax on the surface of the model.



9 Use the airbrush air line to blow debris out of the model's panel lines and recessed areas (do this away from your painting area to keep dust to a minimum). When you're finished, gently wipe down the surface with the tack rag.

Painting

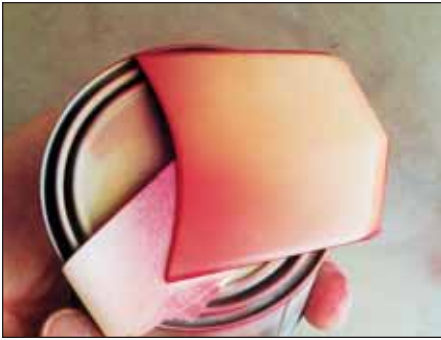


1 Start by applying the color over the sealer. Hold your airbrush six to eight inches from the surface, and move it across the model at moderate speed. I use a Badger 350 single-action airbrush with a heavy nozzle and tip, and apply the paint at 35 to 40 psi. Hit the recessed areas first. Here I've painted the inner fender panels with the nozzle closed down to a fine opening.



2 Next, apply the color around the wheel openings and along the lower part of the model. Do this on both sides, then apply two medium coats of paint to the entire model. Before the coats dry, turn the model so you can apply color along the top edges of the fenders, up the A-pillars to the roof, and then onto the trunk. Since this is a solid color, the actual spray pattern isn't critical, though it is generally best to apply the paint in a line parallel with the panel's longest dimension. Start on the fogged edge of the color and move up and away from that surface. It's important to minimize rough overspray wherever possible.

Painting, cont.



3 Paint the hood next. Paint the underside and panel edges first. When that coat is dry, mount your hood as shown and paint the top. Unless you're spraying a custom finish (metallic, candy, pearl, etc.) the spray pattern is relatively unimportant.



4 Check your model thoroughly to make sure every area has received the first color coats. If not, turn down the airbrush pressure to around 25 psi and paint just that area. The model should have a relatively flat surface with a moderate gloss. Once the model has been treated to two passes of color, set it aside to dry. Here the model has dried for about an hour – look at that gloss! It's important to let lacquer "gas out," which means allowing the thinner to evaporate from the paint before applying more coats. It's recommended that you set aside the model for at least 24 hours because lacquer shrinks as it dries. If you're in a humid area, allow more time. Once the model has dried, apply another coat of color, repeating the sequence described previously. Allow this coat to dry.



5 If you find a major flaw, wet sand it with 2000-grit paper, then wash and dry the model. Don't sand until the paint has dried for at least a day. Wash and dry again, go over the area with a tack rag, then apply two color coats to the area. (No, the trim strip didn't grow back. This is a different hood than the one that appeared earlier.)



6 Wet sand the entire model with Meguiar's 3500-grit paper, then wash and dry it. Apply two more coats of color. Use the same sequence as before, but thin the color an additional 10 percent and apply the paint at 35-40 psi. Remember to let the first coat gas out. At this point, there are six coats of paint on the model, and it has a rich deep shine. As the paint dries, it will shrink a bit, which will introduce a slight texture to the surface. When the finish is dry, it should have a very good shine. This surface hasn't been polished, and it's almost two hours old!

Polishing



1 Since we're using auto paint, auto-paint polishes will work best. Visit an auto supply store and buy Meguiar's no. 3 Machine Glaze and no. 7 Show Car Glaze. (I don't recommend using silicone-based polishes, because they can contaminate your work area and interfere with the paint on future projects.) Pour a small dollop of Meguiar's no. 3 onto a soft, freshly laundered cloth. An old T-shirt or cloth diaper works well.



2 Gently rub the surface of the model with the polish using a circular motion. After just a few minutes the finish will have a mirror-like shine. Work gently, don't press too hard, and always support the panel by placing your other hand beneath it. Avoid rubbing too much on any sharp panel crease or other protrusion – you can easily rub right through the color to the sealer below if you're not paying attention.



3 In small areas adjacent to sharp panel lines, such as this rocker panel molding, approach the area from the opposite side of the crease. Never work over the top of the line. Gently rub along the length of the inside of the crease.

Polishing, cont.



4 The same process is used on the top of the fender. By placing your index finger inside the polish-soaked rag you can get a mirror-like finish along a recessed area like this one. Watch the progress of your work to avoid rubbing through on a sharp panel crease.



5 When you need to rub out paint around a wheel arch, rub the polish into the surface, and then rotate your shrouded finger up and around the edge.



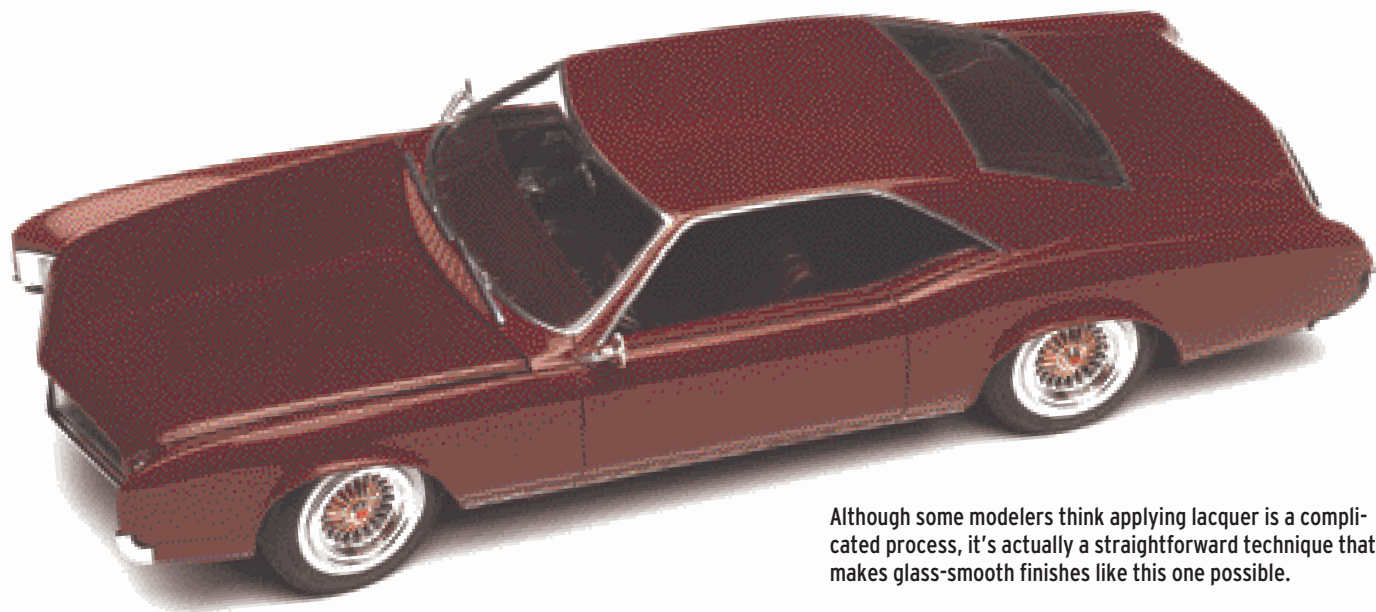
6 A long panel should first be polished along its length to cut down the orange peel. Once the finish is smooth – and don't be afraid to use the polish liberally – return to the area with a series of small circular motions applied along the length of the panel.



7 Flat, rectangular areas like the trunk are easy to rub out. You should also polish the paint on the molded-in trim strip around the window opening. If the trim is mirror-smooth, the metal foil you apply over it will be, too.



8 After the last panel is polished with Meguiar's no. 3, wash the model in tepid water and gently dry it. Grab a fresh polishing rag, and gently rub Meguiar's no. 7 into the surface of the model, again using a circular motion. Afterward, wash the model again, and it should have a glass-smooth finish. This model has not been sanded with harsh sandpapers, and no clear lacquer or wax was applied to enhance its gloss.



Although some modelers think applying lacquer is a complicated process, it's actually a straightforward technique that makes glass-smooth finishes like this one possible.

Great paint from spray cans

Part I: Simple steps to a glass-smooth paint job

by PAT COVERT



I WANTED TO SEE if I could build a high quality, eye-catching model that would be competitive on any show table. That's challenging enough, but I also wanted to see if I could finish that same model using spray cans instead of an airbrush. Why? We live in an era where many modelers think spray cans are amateurish and imprecise, and that the only way to build a killer model is to use an airbrush. I'm here to tell you, "It just ain't so!" There are a lot of good reasons to use aerosol paint.

Perhaps you're a beginner who just wants to break through the orange peel barrier and build consistently nice models you'll be proud to put on your shelf. Aerosol is for you. Perhaps you have a family or demanding job and consequently don't have a lot of time for modeling. Aerosol is for you. Heck, you could be a burned-out veteran contest winner who just wants to get back to the enjoyable roots of modeling. Surprisingly, aerosol may be for you!

Today there are many excellent aerosol paints available for car modelers, more than we've ever seen in the long history of our hobby. Testors rules the roost with an excellent selection of both stock and custom colors in enamels, and Tamiya's new lacquers have sweetened the pot considerably. Adding spice to the mix is the incredibly expansive array of commercially available paints offered by manufacturers such as





Krylon, Dupli-Color, Plasti-kote, and others. It may sound like heresy, but you could take away my airbrush, and I wouldn't miss it a bit!

I'm a closet Ferrari nut, so I couldn't wait to get my hands on Tamiya's 360 Modena kit (no. 24228). The beautifully detailed Modena would give me the opportunity to use a wide variety of aerosol paints, including gloss, flat, and metallic varieties.

For the body, I used Tamiya's Italian Red spray paint (no. TS-8). These lacquers are still relatively new to the States, and indeed, to many of our readers. Tamiya's spray paints are lacquers, but they're different from chemically "hot" commercial automotive paints that can damage plastic. Tamiya's lacquers are "cool" and can be applied directly to kit plastic without threat of damage.

If you prefer enamel, have no fear. Testors Italian Red (no. 2919) spray paint is just as suitable for this project. In fact, throughout this project you'll notice there are options for using different brands of paint. There are subtle differences, for instance, between the semigloss black paints made by Tamiya and Testors. You can use these differences to your advantage to add more visual interest to the model. Testors' clear lacquer top coats are available in gloss, semigloss, and flat varieties, and can be used to vary the surfaces of flat, semigloss, and metallic paints, adding even more variety to the mix. You should not use Testors' clear lacquers over gloss enamels, as they can separate from the paint, but they work quite well over

Ferrari is legendary for its red finishes. It seemed only natural to paint Tamiya's Ferrari 360 Modena with Tamiya Italian Red. A spray can paint job gives this model a finish that rivals a full-size Ferrari!

the aforementioned paints with excellent effect.

There's no substitute for a good-looking paint job. It's the first thing you notice about a model car! In this installment, I'll show you how to prepare, paint, and polish out the body of the Modena. Follow along as we take the screaming-red 360 through the paces from start to finish! ■

SOURCES

Novus Plastic Polish Ltd.

10425 Hampshire Ave. S., Dept. SAE
Minneapolis, MN 55438
E-mail: novus@noscratch.com
Web Address: www.novus123.com
Catalog: Online

Shabo Hobby Design

W225 S4839 Guthrie Rd., Dept. SAE
Waukesha, WI 53189
Catalog: LSASE



1 The selection of aerosol paints available to car modelers is staggering. Along with a wide range of hobby paints, there's a veritable cornucopia of offerings from commercial sources. Note that all manufacturers have their own secret formulas for their particular paints, some of which may require special primers due to hotter solvents. Also, while you're out buying paint, make a side trip to your local bookstore or newsstand. I found two magazines with reference material on the Modena.



3 My only gripe with the Modena body is that the panel lines are somewhat faint. I remedied this by whipping out my Bare-Metal Foil panel scriber and adding more depth to the body's panel lines. Often, panel scribers leave a burr along the edge of the scribed area that must be removed before painting. Remove these by running the edge of a sheet of 400-grit sandpaper along the panel line until the burr releases or is sanded away.



5 Here's the body after the sealer and another coat of primer have been applied. The sealer worked quite well, eliminating the possibility that the pigment might bleed through. Since I was painting the Ferrari red, it might not have been noticeable, but if I had done some bodywork or were painting the body another color, the results could have been disastrous.



2 The first thing you'll want to do to a body is remove the seams left by the molding process. These are hard to spot on Tamiya kits, a credit to the manufacturer's attention to detail. You'll have to look closely before you'll find the seams. Sand them down a bit with 400-grit sandpaper and they'll be easier to spot. Make sure you remove all of the molding seams, or they'll show up through your carefully applied finish! By the way, paint hasn't been applied yet - the Modena's body is molded in red styrene.



4 There weren't any areas that needed filling on the Ferrari body, so I proceeded to the primer stage. After applying several coats of Tamiya flat white Fine Surface Primer (no. 87044), I noticed the red pigment in the plastic was bleeding through. This is common with red, yellow, and orange styrene. To stop the bleeding, I applied two coats of Design Master Super Surface Sealer. This aerosol sealing agent is available at craft and art-supply stores.



6 Just to satisfy my curiosity, I did a test on a piece of red sprue from the kit. I applied some yellow Tamiya spray paint directly onto the red sprue to see if the pigment would bleed through. Ironically, the pigments did not bleed through the paint as it had the primer. I probably could have painted the body without using the sealer, but when there's the possibility of a problem occurring, I'd rather be safe than sorry. I've seen too many paint jobs ruined by pigment problems!



7 Only a small amount of bodywork was required before applying the final primer coats. I used a large, fine-grit flexible sander to do the minor cleanup, then added a final coat of sealer and primer. The Tamiya primer goes on in thin layers with virtually no texture, so I chose not to give the body an overall sanding as I usually do before painting. If you're using a thick primer with a noticeable texture, smooth it with 600-grit sandpaper to reduce the possibility of texture in the color coats.



8 Before we start painting, let's look at different ways to mount parts. Here's the Ferrari body attached to a Shabo painting stand; it's next to a similar stand I made myself. This type of stand is the best way I've found to mount a body for painting. The wire supports are flexible and can be bent outward to add tension. Sure beats the old bent coat hanger!



9 Small, unusually shaped parts can be mounted on strips of styrene or metal tubing for painting. A small amount of super glue holds the part. I usually have several of these around when I paint, and I stand them up in a glass bottle between coats. Once the paint has cured, simply pop the parts loose and sand away any excess glue. Small body-colored parts, like side-view mirrors, should receive the same number of color coats as the main body parts to assure a good color match.



10 Small parts that only need to be painted on one side can be mounted on sticky-side-out loops of tape. You can use virtually any kind of masking or packing tape to hold the parts. This is also a good way to mount wheel rims for painting. If you need to paint both sides of the part, flip the part over and repeat the process after the first coat is dry. Works like a charm!



11 Let's paint! The first order of business is warming up the paint so it will flow better. This is very important with thick enamel paints. The Tamiya lacquer is considerably thinner than enamel, but I still recommend warming it up to help it flow. Cold paint has a tendency to clump and develop an "orange peel" texture. To warm up the paint, fill a bowl (or the bottom of a sink) with about three inches of hot water. Stand the spray can in the hot water for a few minutes before you start painting.



12 After shaking the can vigorously for a couple of minutes, apply the first mist coat of paint to the model. This light dusting of paint shouldn't cover the entire surface. These mist coats may seem like a nuisance to apply, but they're laying the foundation for optimum coverage once the wet coats are applied. Wait approximately 20 minutes between mist coats to allow the paint to set up. Any parts (even the smallest ones) that will be spray painted with a gloss color should be mist coated.



13 Here's the body after three mist coats. Complete coverage is almost achieved, but I'll add one more coat to be sure the body is completely covered. After the last coat has been applied, let the body sit for an hour to allow the paint to set up. The mist coats will help the later wet coats adhere to the model, and keep the paint from pulling away from panel lines and exposing the primer underneath.



14 Now the real work begins! The following coats are heavier, "wet" coats, in which the paint glosses up during application. The trick to applying a wet coat is simple: Apply just enough paint so that the coating is wet and glossy, but not so much that it runs or drips. Mastering the art of the wet coat takes practice, but eventually becomes very natural. I found the Tamiya paint to be very forgiving. This paint sets up faster than most enamels and isn't as prone to run.



15 At this stage, the Modena body has had several wet coats applied. The Tamiya lacquer isn't as thick as enamel, but is somewhat heavier than standard automotive lacquers. Consequently, you'll need to apply several more coats of the Tamiya paint. When I ran out of paint, I still felt like I could've added another coat or two to the body.



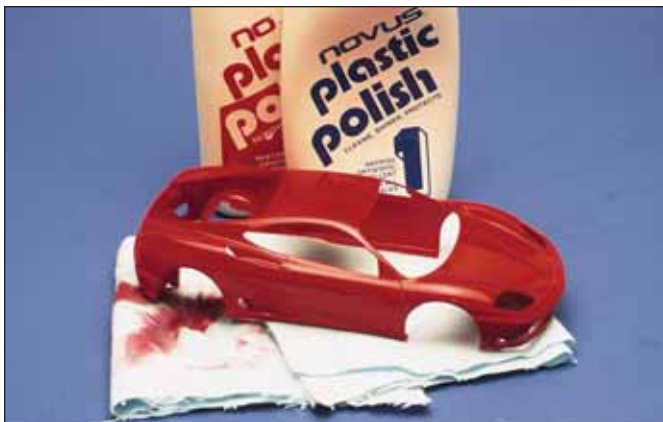
16 Most paint will have some surface texture after it cures and Tamiya's lacquer is no exception. This is where a polishing kit comes in handy. Lacquer solvents evaporate faster than enamel solvents and cure or "gas out" in less time. You can polish lacquer in about four days, as opposed to the 7-10 you'd have to wait for enamel. I'll use sanding pads to rub out the Modena's finish, but sanding sheets would work just as well.



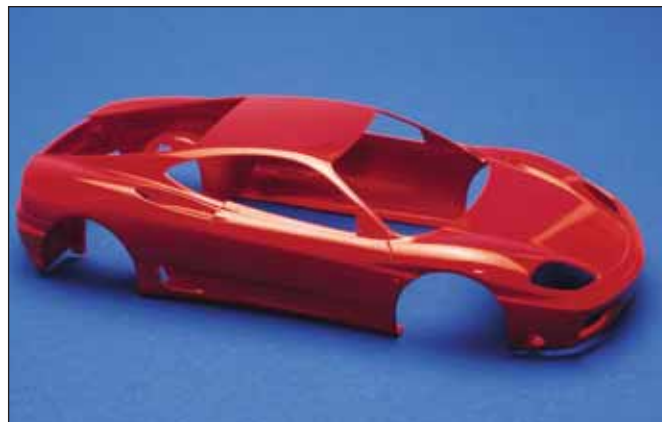
17 I started polishing the finish with a 3,200-grit pad (the workhorse of the bunch), as it will level the surface of the paint. On this important first step, I always use the pad dry because it's easier to determine when the texture has been removed. Work slowly when using this coarse grit, as it can easily cut through the paint and into the primer. Note the dull finish on the body, a sign that all of the surface texture has been removed.



18 Here the finish has been wet-sanded with consecutively finer grits in the polishing set. By the time the 12,000-grit pad has done its duty, a nice luster has returned to the paint's surface. It's hard to believe that the dull paint from the last step is now so glossy. But wait - the next step adds even more shine!



19 Polish removes the surface haze left by the sanding grits. There are many good polishes available; I use Novus no. 2 plastic polish. This polish is applied by dabbing a small amount on a piece of flannel cloth and rubbing it into the surface of the paint using circular strokes. Afterward, the excess polish is buffed off with a clean portion of the flannel cloth. Applied in much the same manner as the polish, Novus no. 1 serves as a surface protector and glossing agent. This is the final step in the finishing process.



20 Here's the Modena body, fluffed-and-buffed to a high shine. With such a smooth, trim-free body, I thought that it would be easy to rub out. I was wrong. It has more twists and turns in it than a good spy novel! Several areas, such as the concave lower side scoops, are almost impossible to reach with a sanding pad or sheet. The edges around the scoop are sharp as well, increasing the possibility of cutting through the paint. The bottom line: Proceed with caution when sanding and polishing this kit.



CAREFUL WITH THAT CLEAR

I'll finish up this installment with one important note about Tamiya's lacquer paint. If you choose to apply Tamiya's clear gloss (no. TS-13) over a Tamiya color finish, you'll need to be careful when you apply it. You have two choices: you can add the clear coat immediately after applying the last wet color coat, or you can apply the clear coat after the color coat has cured and gassed out for at least a month. Tamiya's clear gloss paint cures at a different rate than the color paints in the line. If you wait even a day to apply the clear gloss, the different curing rates will cause the clear finish to crack.

I have used Tamiya's spray paints on several occasions, and they have always been easy to use. I did, however, run out of paint before I finished the job on this Ferrari. In retrospect, I should have had an extra can handy to handle this situation. Other than that, this easy-to-use paint is truly a viable option to both enamels and automotive lacquers.

In the next installment, we'll finish the Modena using a plethora of aerosol paints. Join us for the fun!

For more information about clear coating, see my book, "The Modeler's Guide to Scale Automotive Finishes," available from Kalmbach Publishing.



Don't miss next month's installment, as we paint the rest of Tamiya's Ferrari 360 Modena. We'll show you how different types of aerosol paint can be employed to give a multitude of finishes to scale auto parts.



Great paint from spray cans

Part 2: Doing it all with aerosol

by PAT COVERT

My entire Tamiya Ferrari 360 Modena was painted using aerosol spray cans. By varying the levels of shine throughout the painting process, I significantly increased the realism of the model.

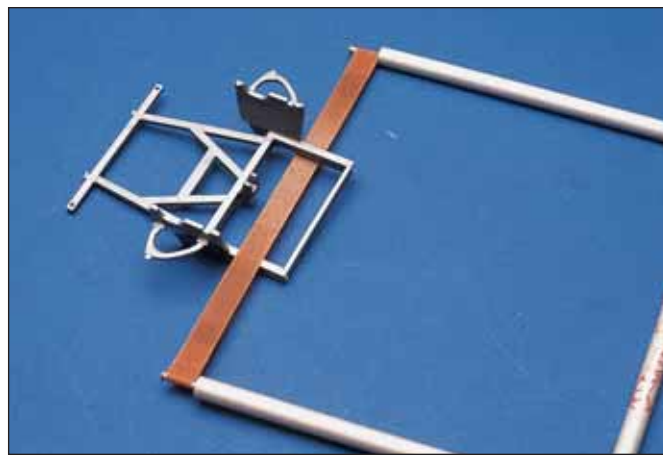


GOOD OLD-FASHIONED FUNDAMENTALS, such as preparation and masking, are essential to any good paint job, whether you're painting a whole model or just some parts. In the last issue, we applied a killer spray-can finish on the body of a Tamiya Ferrari 360 Modena. Now we'll complete the job. We'll use a wide range of aerosol paints and examine techniques to make them work to their fullest potential.

Using clear and translucent coatings to vary the finish on the kit parts is particularly effective. This technique better duplicates the many hues and tones in the paint of a full-size vehicle, such as the different shades of silver on the wheels and exhaust system. By taking simple colors and adding one of three Testors aerosol clear coats – flat, semigloss, or gloss, you can alter the finish on various parts throughout the assembly, enhancing the detail. Serious replica-stock builders can really take advantage of these paints and rack up points with contest judges. Even if you're not building cars for competition, using these techniques can have your models looking fantastic. ■



1 Paint doesn't cover mistakes. It actually emphasizes surface imperfections, such as flash and molding seams. For a slick finished model, eliminate these shortcomings before painting. A great tool for taking care of excess plastic and unsightly seams is the flexible sanding stick. These sticks come in a variety of grits and are available from hobby companies like Creations Unlimited and at beauty supply stores.



2 Creations Unlimited's Flex-I-File can get into places that other sanding tools can't. By taking the sanding strip off one end of the bow and weaving it through holes or gaps, you can more easily access the areas to be sanded. Creations Unlimited also offers sanding strips in a variety of grits, so you can tailor the tool to the job at hand.



3 When it comes time to buy paint, choose your brands wisely. My tests with Testors and Tamiya semigloss black paints showed that there was a difference in the level of shine between the two brands. Tamiya tends to be a bit glossier than the Testors, which can be a good thing. You can use both paints to achieve subtle differences between the semigloss black parts on your models.



4 You can alter a semigloss paint (or any other paint for that matter) by applying Testors Semi-Gloss Clear (no. 2016) top coat over a part that has already been painted. The Testors clear paints are lacquers, but they don't contain the hot solvents typically associated with these paints. Therefore, they can be safely sprayed over most other paints with no ill effect. However, do not apply these clears over gloss enamels, as they don't adhere well to the high-resin-content enamel.



5 Metallic finishes are very prevalent in the hobby world. Testors' wide range of Metalizer paints can be used to simulate an endless variety of metal finishes. Some of these paints can be buffed to a high shine as well. Tamiya also offers a selection of metallics in its line. Tamiya's paints are classified as lacquers, but like the Testors clear coats, they don't cause the problems with styrene that automotive lacquers do; all of these paints can be sprayed directly onto plastic.



6 Here are three Testors Model Master aerosol top coats that you can use to vary the surface finish of parts. Lusterless Flat (no. 1960) takes all the shine out of a surface. Semi-Gloss (no. 1959) imparts a subtle shine, while Gloss (no. 1961) adds a slick, glass-like finish to the surface. There is an extra benefit to these paints - they can be used to protect parts. Frequently, I'll top coat flat painted parts in Lusterless Flat to make them more durable during handling.



7 Chrome parts can also be enhanced using various top coats. Parts such as chrome wheels can be sprayed with flat or semigloss clear to add a satin finish. Here, I treated the Modena's exhaust assembly to subtle finish variations by masking off certain portions and spraying Testors Lusterless Flat onto the exposed areas. When finished in this fashion, the components look more realistic.



8 The engine bay, interior, and chassis are near completion. Just about everything in these subassemblies required black or aluminum silver paint, but I was able to get a broad variety of surface finishes using the wide range of available black, aluminum, and silver paints. Aside from a bit of brush painting to highlight a few areas, this is an all-aerosol paint job.

9 The window glass on modern vehicles often has black trim and accents. This can be replicated by masking off areas not to be painted. Tamiya packages a nice set of window masks in the Modena kit, but masks for all of the glass panels aren't included. You'll have to do a bit more on your own if you plan to spray paint all of the "glass" parts. In addition, the trim strip around the top of each side window must be masked for painting, as well as the area on the front windshield. I used artist's frisket material for the additional masking. This thin, clear, adhesive-backed film can be purchased at art supply stores. I masked the inside window panels, as well as the outside areas that required protection from overspray.





10 Tamiya Semi-Gloss Black (no. TS29) was used to spray the blackened areas of the window glass. This paint applies in thin layers, making it perfect for the job. Don't try to paint the black areas in one coat, as the paint will build up around the edges of the masks. Instead, apply the paint in several thin layers until you have complete coverage.



11 Here's the windshield after both the front and rear masks have been removed. Use fine-tipped tweezers to get under the edges and lift off the masks. Be careful when using tweezers as the tips can scratch the plastic. Notice how the black areas on the underside of the glass appear glossy, while the painted portion on the front of the glass retains the semigloss finish of the paint.



12 Here's the fully painted engine, chassis, and interior assembly. Short of mounting the wheels, there is little else to do here. Although several parts are painted the same color, they each have a different surface finish. It's a shame the body will cover most of our efforts, but hopefully we learned a thing or two along the way.

For a complete reference about painting model cars, check out Pat's book, "The Modeler's Guide to Scale Automotive Finishes," available from Kalmbach Publishing. To order a copy, call Kalmbach Publishing at: 1-800-533-6644, or visit the company's website at: www.scaleautomag.com.

SOURCES

Creations Unlimited Hobby Products
4318 Plainfield Ave. NE, Dept. SAE
Grand Rapids, MI 49525
Catalog: \$1 and LSASE



Whether you're a beginner or a seasoned pro, aerosol paints are a viable alternative for your next project. So let's get shakin' - aerosol cans, that is.

Strong to the finish

Patience and solid technique are keys
to great-looking paint jobs

by LARRY HUFF with DAVID VON ALMEN

DID YOU EVER see a great-looking model and wonder how the builder got that “miles-deep” finish? Have you shied away from attempting such a paint job, figuring that it would be too difficult?

Larry Huff's models have that showroom-type

look, and it's no mystery how he does it. Let's take a look at two of Larry's models – a 1/24 scale Revell Baldwin-Motion Cobra (no. 85-7664) and a Revell-Monogram 1959 Chevrolet Lowrider (no. 85-2516) – and see how he got such spectacular results.

COBRA

SURFACE PREP The key to any good finish is getting the basics right. Before you begin building the model, wash all of the parts to remove residue left during manufacture. Larry uses automotive car wash soap to help prevent fisheyes in the finish.

This is especially important if your finish of choice is auto-

motive lacquer, as was the case with these models.

Cleanup of the body and other parts begins with removal of injector pin marks, mold lines, and sink holes. For major repairs that require putty, Larry uses Evercoat two-part body filler, available at automotive paint or parts stores. It can be rough-shaped within 15 minutes and finish-sanded in an hour.

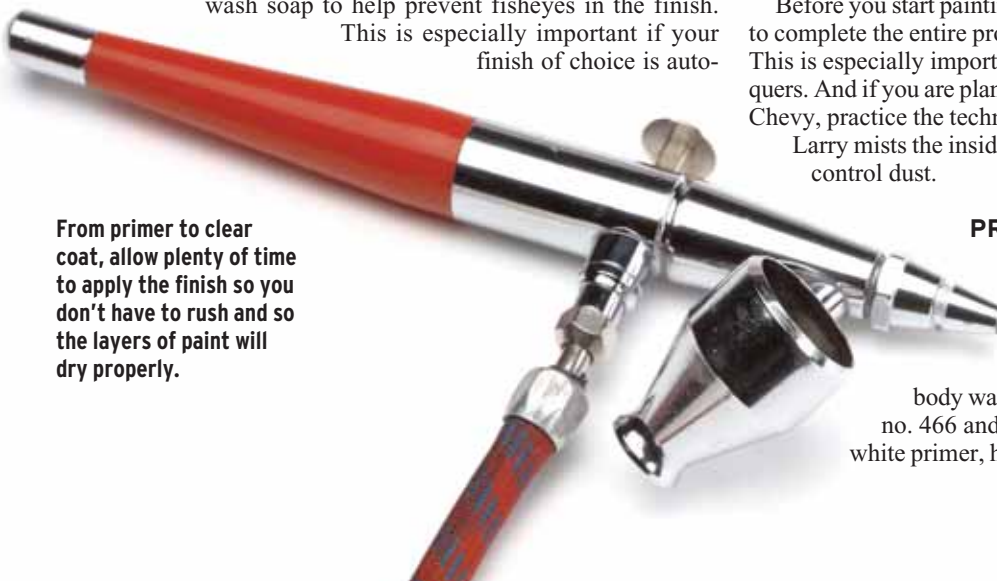
Before you start painting, be sure you have allowed enough time to complete the entire process (at least 20 minutes between coats). This is especially important when you use automotive acrylic lacquers. And if you are planning a fade scheme like the one on the '59 Chevy, practice the technique before you paint the model.

Larry mists the inside surfaces of his paint booth with water to control dust.

From primer to clear coat, allow plenty of time to apply the finish so you don't have to rush and so the layers of paint will dry properly.

PRIMER Check to be sure the body surface is level with a “glide coat” of two different colors of primer. For a light color scheme, start with a gray primer, followed with white (reverse the order for a dark paint scheme). The Cobra

body was primed using Plasti-kote® sandable gray no. 466 and white no. T-237. When you sand off the white primer, high and low spots are revealed. When the



If you want the type of finish shown here on Larry Huff's Cobra and 1959 Chevy, you need a well-primed model, plenty of painting practice, and the patience to slowly build the finish with a number of light coats. It takes time, but look at the results!





Gold metal flake powder was mixed with clear and sprayed over House of Kolor Neon Red, followed by Candy Apple Red applied in progressively-thinner coats, topped with three clear coats. Polishing and a coat of Liquid Glass completed the Cobra's finish.



The "fade" scheme on Larry's 1959 Chevy began with white acrylic lacquer, followed by Snowwhite Pearl and a mist coat of Goldmine Pearl along the edges and recesses. A light coat of Kandy Rootbeer next to the Goldmine Pearl added to the effect.

body has been leveled, apply a final coat of primer and polish the body with a fine cloth.

BODY COLOR Black Gold Models' House of Kolor automotive lacquer was used in a three-stage painting process. Larry uses PPG DT870 reducer to thin the paint, because it dries slowly enough to prevent problems such as orange peel and does not affect the primer.

Three base coats of Neon Red got things started, followed by two coats of clear mixed with silver metal flake powder. Larry then mixed gold metal flake powder into the clear and sprayed on two more coats, then three coats of Candy Apple Red.

Three coats of equal parts clear and Candy Apple Red were followed by three coats of a mixture of one part Candy Apple Red to three parts of clear. The final three top coats were clear only. Larry rubbed out the finish every three coats to ensure a smooth surface.

Let the paint sit at least 24 hours before you begin polishing the finish. If you start with a smooth, level surface and rub out the clear coats correctly, polishing should be a simple task. To prevent scratches in the surface and make your polishing cloths last longer, do all of your polishing with water – "wet-sanding" if you will.

When polishing was complete, the Cobra received a coat of Liquid Glass to protect the finish and enhance its shine. By doing all of the painting first, everything had time to cure before assembly.

Larry's Cobra got its beautiful finish from many light coats of paint applied at least 20 minutes apart and rubbed out every three coats.



'59 CHEVY

DOING THE FADE Two light coats of House of Kolor white acrylic lacquer were used as a base for the Snowwhite Pearl, applied in three light coats with 20 minutes between coats. A note of caution: Stop immediately if you see a dust speck in the paint, so you don't paint over the dust. Wait 20 minutes, then remove the dust with a 6000 or 8000 polishing cloth.

Larry misted Goldmine Pearl in the deep recesses of the fins, along the sharp edges, and on the rocker panels to establish the dark beginnings of the fade scheme. Then he sprayed Kandy Rootbeer to highlight the edges of the Goldmine Pearl making sure to get the fade effect toward the light centerline of the car. Kandy Pagan Gold was blended toward the centerline and along the edges of the Rootbeer. For a finishing touch, he painted all of the chrome Pagan Gold.

To complement the body paint, the chassis, engine, drive train, and dashboard were painted Goldmine Pearl. The seats are Snowwhite Pearl with a mist coat of Candy Pagan Gold. The floorboards are flat brown, to simulate carpet.

With a good subject, a well-prepared surface, and the patience to apply the finish slowly and carefully, that "showroom shine" is within your grasp. Give it a try on your next project! ■

Painting with

Mix Pearl-Ex with clear for dazzling effects

Story and photos by STEVE CULPEPPER



CAR MODELERS are always looking for ways to enhance their creations – with photoetched-metal or cast-resin details or special refinishing products. One of the most exciting such products I've seen is a powder called Pearl-Ex, marketed by Jacquard Products (www.jacquardproducts.com) and available in craft stores.

Pearl-Ex is nontoxic and inert, and is available in a set of 32 colors: 16 pearlescents, five interference colors that reflect at certain angles, three duo-colors that flip-flop, and eight metallics or pastels. When one of these colors is added to almost any medium, the result is a sparkle and brilliance that simply cannot be accomplished with paint alone.



Here's the 32-color assortment, available at craft stores.

powder



Steve Culpepper has tested Jacquard Products' Pearl-Ex powdered pigment extensively, and says "there may be no wrong way to use it."



At left is the approximate ratio of powder to clear medium that Steve uses instead of "normal" paint. At right, less powder is mixed with clear when a highlight effect is desired, applied as an overcoat.



Antique Silver over Flamingo Pink gives a "period look" to this 1958 Plymouth Belvedere.



This Opel GT is finished in Antique Bronze with Model Master high-gloss enamel clear coat.



Steve mixed Sparkle Gold Pearl-Ex into Model Master Sublime Green and topped it off with a coat of clear enamel.

When a relatively large quantity of powder is mixed with a clear medium, the combination can be used instead of "normal" paint, with excellent coverage and minimal buildup. The details don't get lost as they do with some other premixed paints; the colors lay down flat and deliver an extremely smooth surface when dry.

When a smaller quantity of powder is used, the mixture can be applied as an overcoat, yielding colorful special effects. A reasonable rendition of carbon fiber can be made by mixing gold or silver with flat or semigloss black or brown. There are several shades of gold and silver, as well as three white pearls that can be used as base for candy colors.

As with any metallic or three-stage paint, a clear top coat is usually necessary to protect the particles from damage and give a gloss finish if desired. However, the carbon-fiber mixture described above needs no such protection; the paint is protection enough for the Pearl-Ex.

This product has many positives, and I've discovered only two minor negatives: Since the product must be mixed by the user, it must be applied with an airbrush. And although Pearl Ex has a long shelf life in an unmixed state, after it's mixed it turns into jelly about a week later – even in an airtight container. Be extra careful to mix only as much as you need, and don't try to save any leftover paint.

This product is so user-friendly that the special effects are limited only by your imagination. Check out the examples I've shown, and use them as a starting point for your next finishing project. ■