Former *FSM* Senior Editor Paul Boyer demonstrated what paint and decals can do for a model with this Tamiya 1/72 scale P-51D Mustang.

Build GREAT SCALE MODELS!

Finishing:
Building is only the beginning

Welcome to the world of scale modeling: This is the final of four articles introducing you to a great hobby.

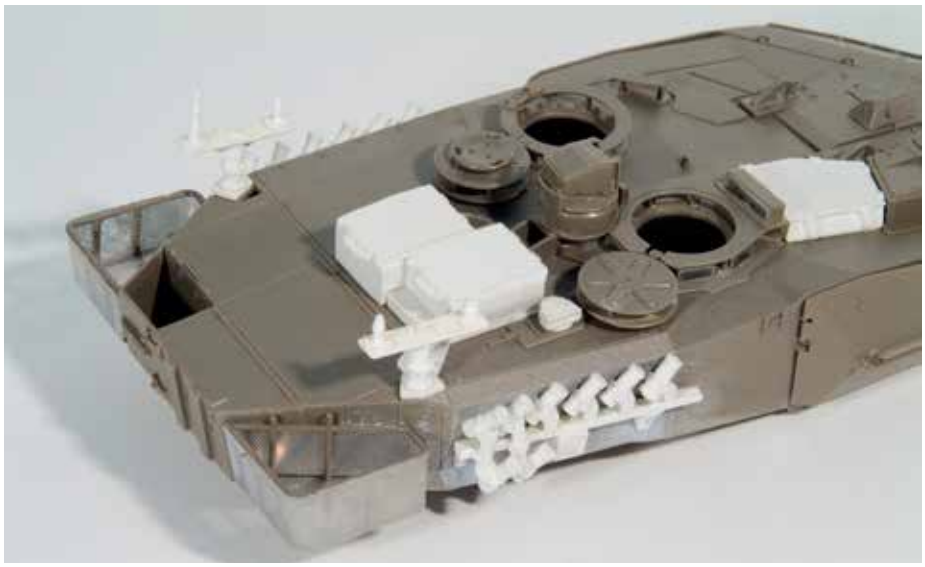
In the previous article, we discussed seven major steps to building better models. This time, we'll lightly touch on the various aspects of finishing a model with paint and decals.

Solid, clean construction makes a scale model accurate. Finishing, in everything from paint to decals, is what makes that model come alive.

As a collective term, finishing is a huge topic. So, this is a general overview. You'll want to know more — this is simply a guide to what you'll want to know more about!

Starting with primer

Many modelers forgo primer in favor of applying as little paint as possible to preserve engraved details such as panel lines and hatches. However, for certain colors or combinations of modeling materials, a primer coat provides a receptive, consistent base for the paints that follow.



In addition to plastic, this model includes resin pieces (white) and photoetched metal (gold). Primer will give all these materials the same receptive base coat for further painting.

For example, if your model comprises different colors of plastic, photoetched metal, or resin, a primer coat provides a uniform base. And for colors that typically present coverage issues (such as white, yellow, or red), primer helps cut down the number of coats needed.

Primer has the additional advantage of revealing construction flaws — gaps or seams — before any finish coats are applied.

Before and after primer, cleanup is key to good paint adhesion. You can wipe a model down with a cleaner like Testors Plastic-Prep, or even just a damp cloth. Avoid paper towels — they leave little fibers on the painting surface.

Enamel or acrylic?

Not many years ago, when they were relatively new, acrylic modeling paints produced widely varied results. Nowadays, acrylics are tougher and more reliable than ever. Their greatest advantages are water cleanup — no turpentine, lacquer thinner, or mineral spirits — and no irritating, solvent-based fumes.

Still, many modelers believe enamels provide a tougher, more durable finish with better adhesion and, for gloss paints, more tolerance of buffing.

Most modelers use both on any given kit, and each has its advantages. It's a personal preference. Whatever you choose, be sure to have plenty of ventilation and wear OSHA-approved respiratory protection.

Hand-brushing paint

If you built models as a child, you may have painted your first by hand with a brush —

From the top: Testors Model Master No. 0 synthetic; Floquil No. 3 round pure sable; Floquil ¼" flat Silver Fox synthetic; and Testors Model Master ½" flat black sable.

Tamiya paint, Tamiya thinner: Using the same brands guarantees compatibility. Mix the paint thoroughly, then use the dropper — not the brush — to extract clean, chunk-free paint from the jar. Put a little thinner next to the paint on the palette.

Use as few strokes as possible; begin in a bare area and work back to the wet paint. Keeping a "wet edge prevents going over drying paint and minimizes brush marks.

and if you remember what those models looked like, you'll recall why you switched to spraying paint.

Still, every model requires at least a little hand-brushing. You should have a couple of brushes: one medium-point brush and another fine-point for tiny details. A "variety pack" of different brushes is a good way to start.

Mix the paint thoroughly, then put some on a palette. (Don't paint straight from the bottle; crusty bits of dried paint on the brim can get in your paint and brush.) Keep a bit of thinner nearby — we recommend using the same brand as the paint for compatibility. Dip the brush in the thinner to moisten the bristles, then in the paint. Use a test surface to see how the paint is flowing and to work paint into the brush.

Now you are ready to brush. Overlap each series of brush strokes to avoid going over partially dried paint, and keep your strokes to a minimum for the same reason — to let the paint level and dry without showing brush marks.

After painting, clean the brush immediately (don't mash the bristles!), smooth the tip back to form, and store the brush upright to dry.

Spray cans

Sprayed paint gives you a smoother overall finish with no brush strokes and, if you've done it right, even coverage. For modelers who want to avoid the investment of time and money in an airbrush, spray cans can produce acceptable results.

Here are a few quick tips:

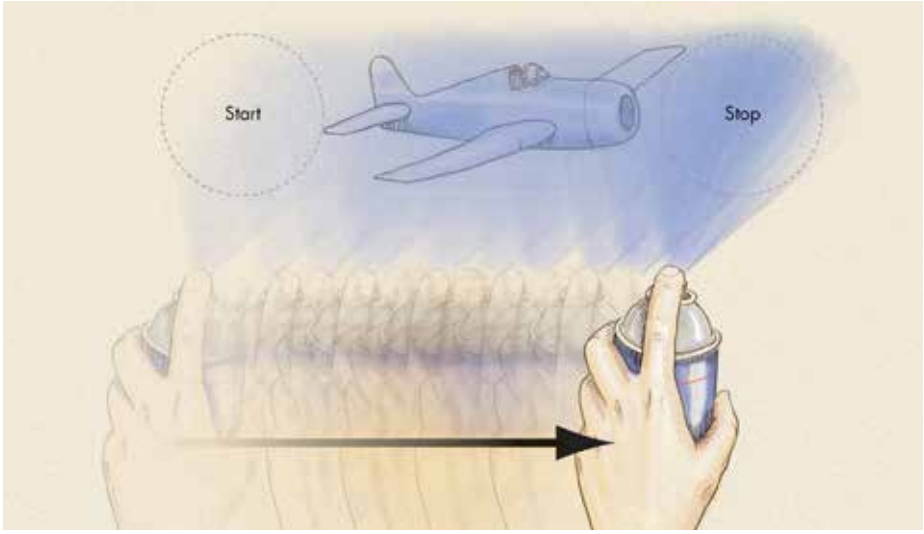
• **Clean the model before painting:** Wipe it down with Testors Plastic-Prep, alcohol, or soapy water. Surfaces must be clean for good paint adhesion.

• **Secure parts to be sprayed:** A loop of masking tape (or double-sided tape) on a slab of cardboard can hold the parts so they don't scatter when you spray them.

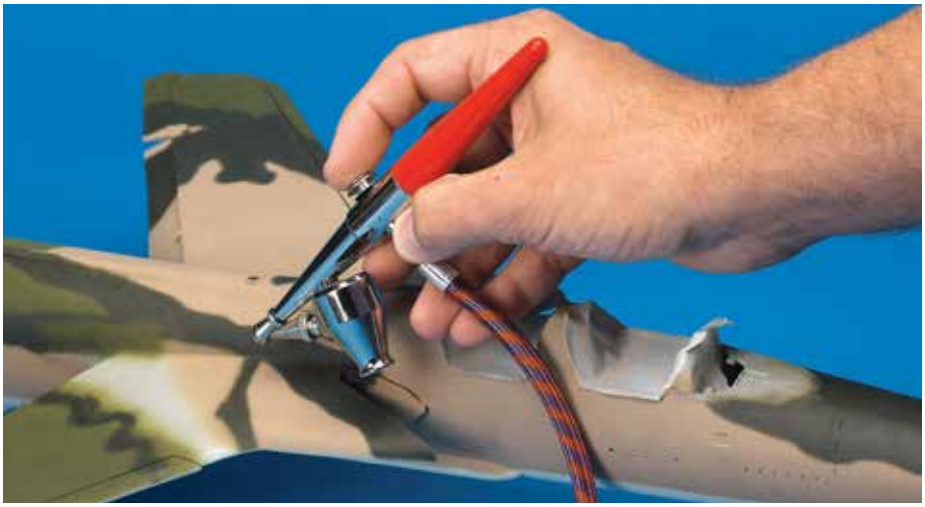
• **The paint will perform better if it's warmed:** Soak the can in warm water. Tap water is warm enough; never heat a can of paint on a stove or in an oven or microwave. The contents are under pressure; overheating may cause the can to explode, causing serious damage or injury.

• **Before you start spraying, put on your respiratory protection:** An OSHA-rated two-canister mask is recommended. Remember, the fumes are flammable; don't spray near an open flame (such as a pilot light). Ensure you have ample ventilation in your painting area.

Spray-can paints come in a variety of brands and formulations suited to various modeling purposes and can provide a smooth overall finish free from brush strokes or streaks.



Paint may spit and sputter when you press down or let up on the spray can's button, so begin and end each pass off the model to keep paint application even. Shake the can between passes.



Spray cans are all right for some jobs, but complex camouflage is not one of them. An airbrush gives you the versatility you need for a wide range of paint effects.

• **Spray from 10-12" away:** Start spraying off the model, sweep past it keeping the distance constant, and don't stop spraying until you are off the model again. Shake the can between passes. Turn or move the model as needed to maintain a consistent, even approach.

• **Place painted pieces in a dust-free area to dry.** If it's necessary, you can apply a second coat after about 30 minutes. But once you are through, let the paint dry for at least 24 hours before handling the model — and longer than that if the paint is especially thick or you are going over it with another coat of color or clear.

• **After painting, turn the can upside down and spray for a few seconds until paint stops coming out.** This clears the nozzle; wipe away excess paint with a cotton swab dampened with thinner.

• **To verify the paint is cured, find an out-of-the-way painted spot and see if you can easily dent the paint with a fingernail.** If so, let it dry some more.

Trouble? Here are solutions to some common problems:

• **Pebbly, rough finish** — spraying from too far away. Move closer.

• **Runs/drips** — too much paint, either because you sprayed from too close or for too long in the same spot. Move back and keep the can moving when you spray.

• **"Fish eyes" or paint pulling away from areas** — surface contaminants are pushing through or repelling the paint. Clean the model thoroughly before painting.

Or you could use an airbrush

Of all the ways to paint a model, the most effective and precise means is the airbrush. It's the master's tool — you can vary the pressure, adjust the spray pattern, mix your own colors, and build a finish in fine, thin layers, preserving surface detail, blending edges, and achieving other effects that look more to scale than heavier applications with

Sprue? Mold lines? Capillary action?

Don't let the lingo get you down; you can always look it up in our modeling glossary at www.FineScale.com/How To/Glossary.

Single-action brushes: An external-mix airbrush (black) brings paint from the outside to the tip; the internal-mix airbrush draws paint inside the airbrush and through to the tip. The latter must be disassembled to be cleaned, but provides finer atomization of the paint. The thumbscrew at the back end sets paint volume; the pushbutton controls air pressure.

a brush or a spray can.

To briefly explain: An airbrush draws in compressed air and paint, atomizes the paint at the tip of the airbrush, and propels it toward the model. The air source can be a can of propellant, but most modelers use a compressor. Compressed gas can also be used, and some modelers use sealed tanks of air, carbon dioxide, or nitrogen to power their airbrush.

So, to begin airbrushing, you need an airbrush and an air source. In addition, you'll want a regulator (to control the pressure). An inline moisture trap will prevent condensation in the line from reaching your model.

The main types of airbrush are:

• Single-action, external- or internal-mix: A trigger controls only the flow of air; the amount of paint is preset, usually with a thumbscrew. So, you can vary the pressure as you spray, but the paint pattern remains the same. An external-mix brush presents the paint to the tip of the airbrush, where it's propelled; this happens outside of the brush. In an internal-mix airbrush, paint is drawn into the brush and propelled through the tip. The atomization is a little finer than on an external-mix brush, but an internal-mix airbrush must be disassembled to be cleaned.

This double-action airbrush has all the bells and whistles a modeler could want: gravity-feed paint cup; the thumbscrew below the cup sets a baseline air pressure; the pushbutton trigger behind the cup controls both paint volume and air pressure; and the thumbscrews behind that regulate paint volume, too.

• Double-action, internal-mix: On a double-action airbrush, the trigger can control both the volume of paint and the pressure at which it is sprayed. This is a more versatile brush for producing different effects on the fly. But it takes more practice to master and spray smoothly.

Which one is right for you? You could try a single-action first, get the hang of it, then see what features you might want in a fancier brush. Or, if you want, dive right in with top-of-the-line equipment: It's your hobby!

Decals: Markings make the model

It's one thing to build a P-51 Mustang. But as soon as you put national insignia, squadron numbers, or nose art on the plane, you establish its identity. In this way, decals bring the model to life.

Applying decals is a high-stakes game: The model is mostly finished, otherwise, and you may only have one set of decals — so the pressure is on to avoid damaging the decals and spoiling a model right at the end of the project. There is no hiding these mistakes.

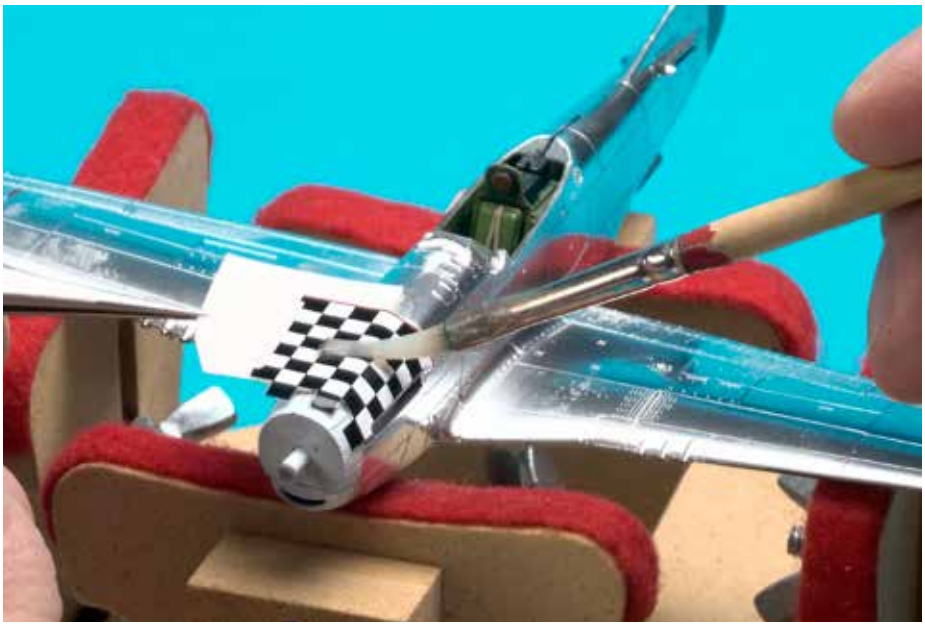
Here's what you can do to get decals right the first time:

• Prepare the surface: Decals adhere better to gloss or semigloss finishes. Your model may have a flat finish, but you can coat decal areas with clear gloss, apply the decals, then return after they are dry and apply a clear coat with the desired sheen.

• Trim excess carrier film: Some decal images have an excess of carrier film outside the image area. Trimming it off reduces the chances of it being visible on the model later.

• Use warm water: Dipping the decal in warm water makes it more pliable, which is good for manipulating it and getting it to settle into surface details. Dip the decal,

Various brands of decal setting solution and decal solvent help you work decals into and around surface details. Careful, though — compatibility is sometimes an issue. Test first to make sure the solution or solvent doesn't attack the decals.



Get the decal close to its location, hold one part of the decal to the surface, then slide the paper out from under it. Use the brush to position the decal. Don't use your finger — the decal will probably stick to it.

then set it paper-side down on a paper towel and let it soak for a minute or so to loosen the decal.

• **Apply decal-setting solution to the model surface:** It will prepare the surface to receive the decal and aid in positioning it. It will also soften the decal, so position it as quickly as you can.

• **Easy does it:** Pull excess carrier film away from the wet decal, pick up the decal, and use a wet brush or cotton swab to slide one edge of the decal onto the surface. It doesn't have to be in exact position, but try to get close. Hold the end of the decal on the model and slide the paper out from under it. Use the brush or swab to push or pull the decal into position. Don't touch it with your fingers; it will probably stick to them. If the decal gets stuck out of position, add more water around the edges to refloat it and put it where it belongs.

• **Use a cotton swab to draw up excess water/solution.** Gently roll the swab over the decal to remove air or water trapped under the decal. Later, you can clean up with more water and another clean swab to remove water marks.

• **Give the decal about 10 minutes to set, then gently brush on decal solvent.** It's a solution that will soften the decal, allowing it to tightly conform to surface details. The decal may start looking wrinkled: Don't touch it! You can't do anything with the decal in this state except ruin it; the wrinkles will disappear. After about an hour, take another look. Is there a bubble under the decal? Do clear areas look like there's air under the film? If so, use a pin or the tip of a hobby knife to prick tiny holes in the decal and apply more solvent. If the decals are "silvering," there is air under the decal preventing a perfect bond to the surface. Repeat with the pin or knife tip and more solvent. This may take several rounds if the model surface is irregular. (*Note: If you use solvent, try it off the model with a decal from the same sheet; some solvents will attack certain decals.*)

You can save cleanup time by soaking up excess water and decal setting solution right away with a cotton swab. But if there is solvent on the decal, put the swab down and back away from the workbench. After applying decal solvent, never touch the decal until it is dry.

• **Finish coat:** When the decals have dried, finish the model with an overall coat of clear. Whether it's a flat, semigloss, or gloss clear, the finish will erase the edges of the decals and make them look as if they are painted on. Then you'll know you've done it right!

There's so much more!

Even though this last article has been the longest, it probably leaves the most unsaid of any in the series. There have been books — several books — written on the subject of model painting and finishing as well as airbrushing, and there will be more.

And that's to say nothing of *FineScale Modeler* magazine: In 10 issues per year, along with extra features on our website at www.FineScale.com, we cover these and countless other topics in detail.

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Then, open that kit box and let's get going!