

Acrylics are no longer the poor stepchildren of model paints. The range, quality, and availability of non-solvent-based paints has increased in the decade since *FSM* last looked at these products.



AIRBRUSHING acrylics

FSM evaluates the range of acrylic paint available to modelers



By Aaron Skinner

Once on the margins of a hobby dominated by enamels from Testors and Humbrol, acrylic paints have come of age in the last 10 years. In 1997, *FSM* evaluated seven brands of paint. Since then, a couple of the brands tested have disappeared, several that were hard to find are now more widely available, and a couple new brands have surfaced. Acrylic paints seem to be more popular with modelers than ever, as a glance at our stories in recent years shows.

But how good are acrylic paints? Is it time even the most die-hard enamel users gave them a try?

To find out, I decided to test some of the brands available today, replicating as closely as possible Matthew Usher's tests from a decade ago.

Our tests

Nine brands of acrylics were tested: Gunze Sangyo Aqueous Hobby Color; Polly Scale Model and Hobby Color; Tamiya Color Acrylic Paint; Mister Kit; Lifecolor; Xtracrylix; Vallejo Model Air; Vallejo Model Color; and Model Master Acryl. The latter replaces the Model Master acrylics we tested in 1997 and is a completely new formula, incompatible with paints from the old line.

Two colors from most brands were tested: gloss white and a light-to-medium

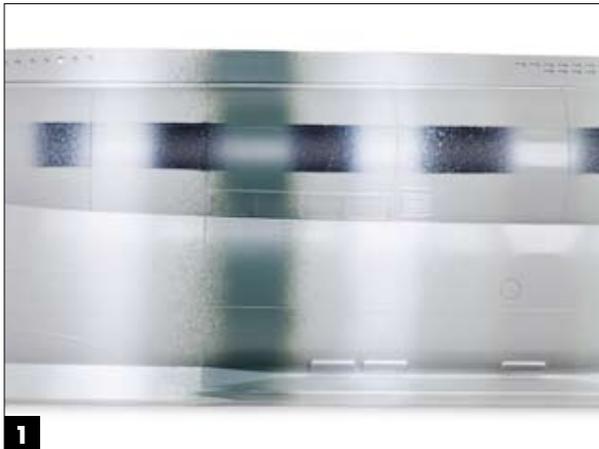
gray (where possible I chose light gull gray). I wanted to see how easily the different brands airbrushed and how well they covered raised and recessed detail. Adherence and opacity over darker colors also were checked.

In 1997, Matthew used a big wing from Revell-Monogram's 1/48 scale PBY Catalina and a hull from Emhar's 1/35 scale Mk.IV tank as test surfaces. This time, the hull of Revell Germany's 1/72 scale U-boat made the ultimate sacrifice. The part's combination of fine and heavy

detail was ideal for our purposes, **1**. The part was cleaned with soap and water before testing. (See the sidebar on surface preparation on page A6.)

To test the paints' opacity, I airbrushed a stripe of Tamiya flat black down the center of the hull. Airbrushing grays and whites over the black would indicate how well they covered darker colors and how many passes or coats were needed.

The airbrush used for my evaluation was a new single-action Badger 350 fitted with a medium tip, **2**. It's an easy-to-use



1 A big canvas: A hull half from Revell Germany's 1/72 scale U-boat served as a test bed for acrylic paints.



2 Aaron used a Badger 350, a single-action airbrush, to test the acrylic paints in this evaluation.

model that provides consistent results. It's also relatively simple to tear down and clean.

I airbrushed in a spray booth using regulated air pressure. Pressure, one of the variables in airbrushing, seemed even more critical with some of the acrylics tested. In several cases, I found raising or lowering the pressure was the difference between a good and a poor finish.

To determine how well the paints adhered – particularly their durability for masking – I burnished three different kinds of tape over the colors, left it in place for a couple hours, then peeled it off,

3. The tapes I used were Tamiya Masking Tape (No. 87033), Scotch No. 256 Paper Tape, and OfficeMax Invisible Tape. Only one of the paints, Model Master Acryl gloss white, showed any indication of lifting as the tape was removed. However, the Acryl gray stayed down.

Conclusions

All of the paints tested provided good results when used according to the manufacturers' directions. Each paint is a little different, requiring different thinners, different thinning ratios, and differing air pressures. However, with experimentation,

any one of these brands should be a positive addition to your workbench and an asset for your modeling.

Model Master Acryl and the other colors in the extensive Acryl range are widely available and provide a good quality finish. Also from Testors, the Polly Scale range is broad, matches many specific military colors, and delivers a dead flat finish.

Tamiya's paints need more thinning but produce a nice, even finish. Gunze Sangyo's range is large, the paints are nicely thin, and the semigloss finish for flat colors provides a nice base for decaling without the need for a gloss coat. Both

Surface preparation

THE SINGLE most important step in producing a good finish with acrylics is surface preparation.

Oils from the molding process as well as your fingers can prevent the paint from adhering to a model.

Before starting construction, I always wash the parts trees with a few drops of dishwashing soap, then rinse with plenty of clear water. I repeat this step with the major assemblies before painting.

After the parts are dry, as a final guarantee against stray fingerprints, I wipe them down with Polly S Plastic Prep or isopropyl alcohol before painting.

Aaron applies Polly S Plastic Prep to the turret of a Trumpeter KV-1 to remove skin oil before painting.



Tamiya and Gunze Sangyo are more widely available than they used to be.

Vallejo Model Air paints produce a fine finish. Vallejo's large Model Color range, though it requires a lot of thinning, provides a solid, durable coat.

Hannant's Xtracrylix paints are a nice option, airbrushing well and providing lots of colors, especially for British subjects.

The two Italian companies, Mister Kit and Lifecolor, may be harder to find in North America. But they are worth seeking out for their specialized ranges. Both provide a good finish. Modelers of World War I aircraft will appreciate Mister Kit's range, while LifeColor's range includes Italian subjects as well as many other matched military colors. The soap and water cleanup for both is nice.

Even more so than 10 years ago, acrylics provide a reliable alternative to enamel paints. Acrylics are generally safer than solvent-based paints (see sidebar on page A10), and they definitely clean up more easily. The range of colors and finishes offered easily equals the enamel options. Personally, I use only solvent-based paint when there is no acrylic option available – and that's less and less the case.

So, is it time for hard-core enamel users to give acrylics a chance? There's never been a better moment! **FSM**



Aaron peels Scotch Paper Tape away from a sample to test the paint's durability and adherence.



Aaron finished Italeri's 1/35 scale Autoblinda AB 43 entirely with acrylics, including a sludge wash, to model a glossy post-World War II Italian police vehicle.



GUNZE SANGYO AQUEOUS/ MR. HOBBY HOBBY COLOR

Manufacturer: GSI Creos Corporation, Tokyo, Japan, www.mr-hobby.com

U.S. distributor: Dragon Models USA, 1315 John Reed Court, City of Industry, CA 91745, 626-968-0322, www.dragon-modelsusa.com

Price: \$2.10 for a ½-oz. (10ml) bottle

Recommended thinner: Mr. Hobby Aqueous Color Thinner (No. T110)

Comments: Gunze Sangyo's line of more than 150 paints includes military and general colors with transparents and clear coats, metallics, weathering colors, and fluorescents.

Performance: The light gull gray (No. H51) and white (No. H1) were thin in the bottle. I added a few drops of 91 percent isopropyl alcohol, thinning the paints to the consistency of milk. Both sprayed easily, covering well in a few passes. They dried smooth, but the white wanted to pull away from raised detail. The tape did not harm the finish of either color. Both paints tested were gloss finishes and dried to an appropriate sheen. My past experience indicates that the flat paints in the range tend toward a semigloss finish.



MISTER KIT

Manufacturer: Mister Kit, Via Monte Amiata, 31, Rozzano MI, Italy, 39-2-8243791, www.misterkit.com

U.S. distributor: Mister Kit USA, 1413 Spring Fest Lane, Orlando, FL 32828, 917-586-3906, www.misterkitusa.com

Price: \$3.00 for ½-oz. (15ml) bottle

Recommended thinner: Water and alcohol

Comments: Range consists of more than 200 colors, many coded to specific air forces and time periods. Mister Kit is notable for a large range of WWI aircraft colors.

Performance: I thinned the light slate grey (No. MKRAF06) and white (No. MKAC-028) with a mixture of equal parts distilled water and 91 percent isopropyl alcohol, then airbrushed them at 20-30 psi. The grey covered well with just a couple of passes. The white took more coats, and the paint wanted to pull away from raised detail. Both provided a smooth, durable, semigloss finish which tape did not lift.



XTRACRYLIX

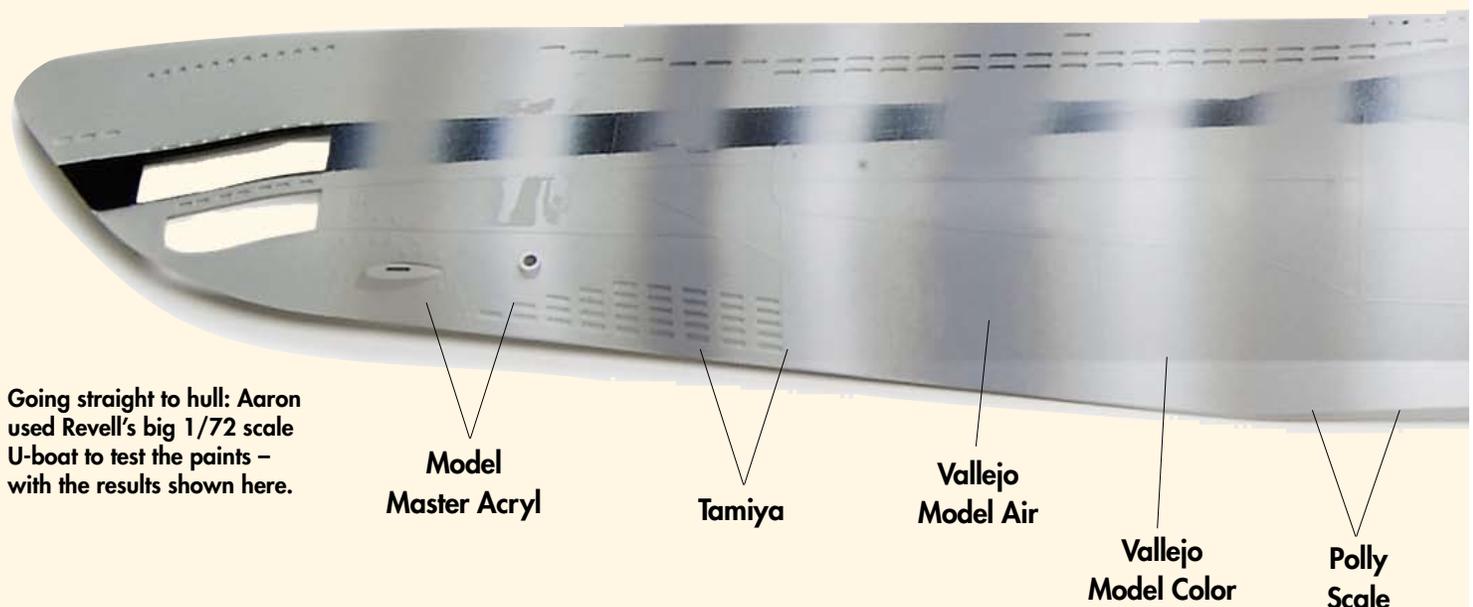
Manufacturer: Hannants, Harbour Road, Oulton Broad, Lowestoft, Suffolk, England, NR32 3LZ, 44-1502-517444, www.hannants.co.uk

Price: \$3.00 for about ½-oz. (16ml) bottle

Recommended thinner: Water or Xtracrylix Thinners (No. XATHIN)

Comments: Range covers 88 colors matched to military standards, including FS, BS, and RLM. Many British subjects are covered.

Performance: The RAF dark sea grey (XA1004) was very thin in the bottle. Thinned with the recommended 10-15 percent water or thinner, the paint went on well, covered quickly but thinly, and dried to a smooth, glossy finish. Masking tape did not affect the finish.



Going straight to hull: Aaron used Revell's big 1/72 scale U-boat to test the paints – with the results shown here.

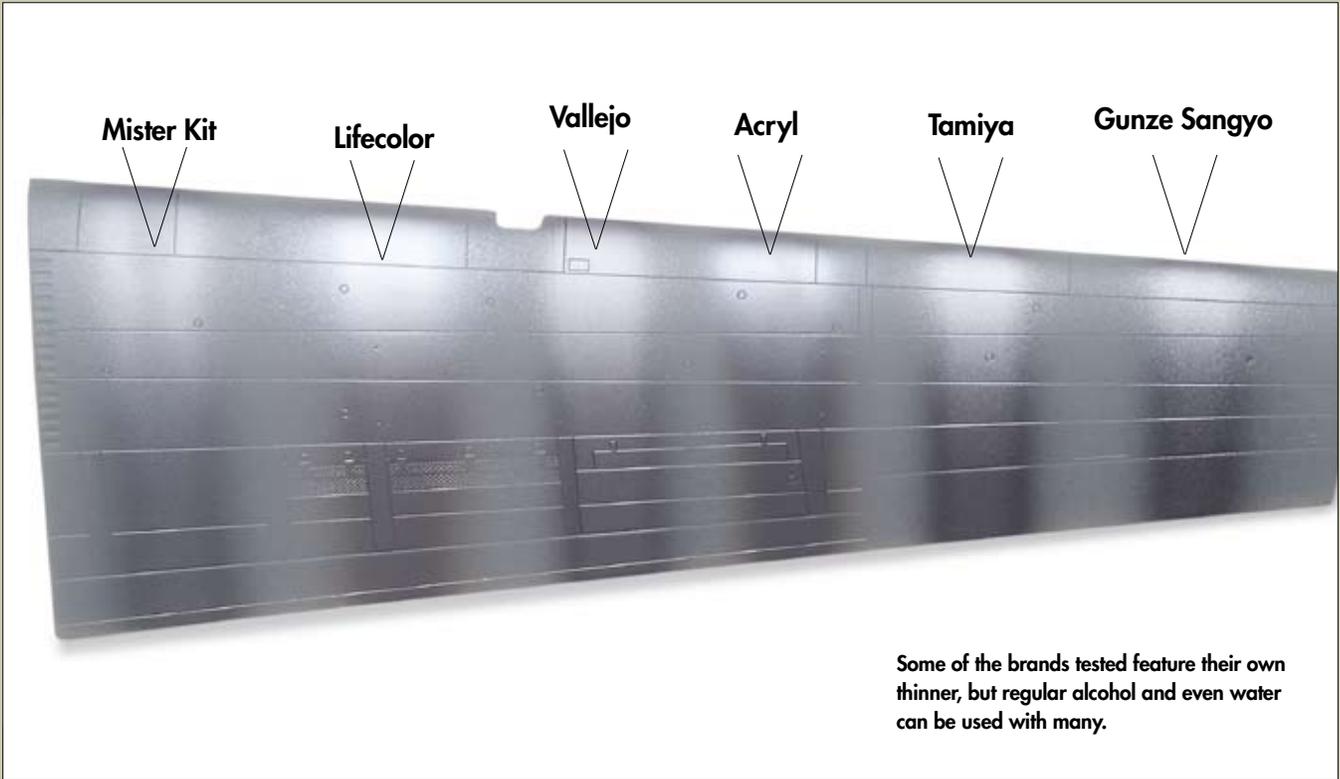
Model
Master Acryl

Tamiya

Vallejo
Model Air

Vallejo
Model Color

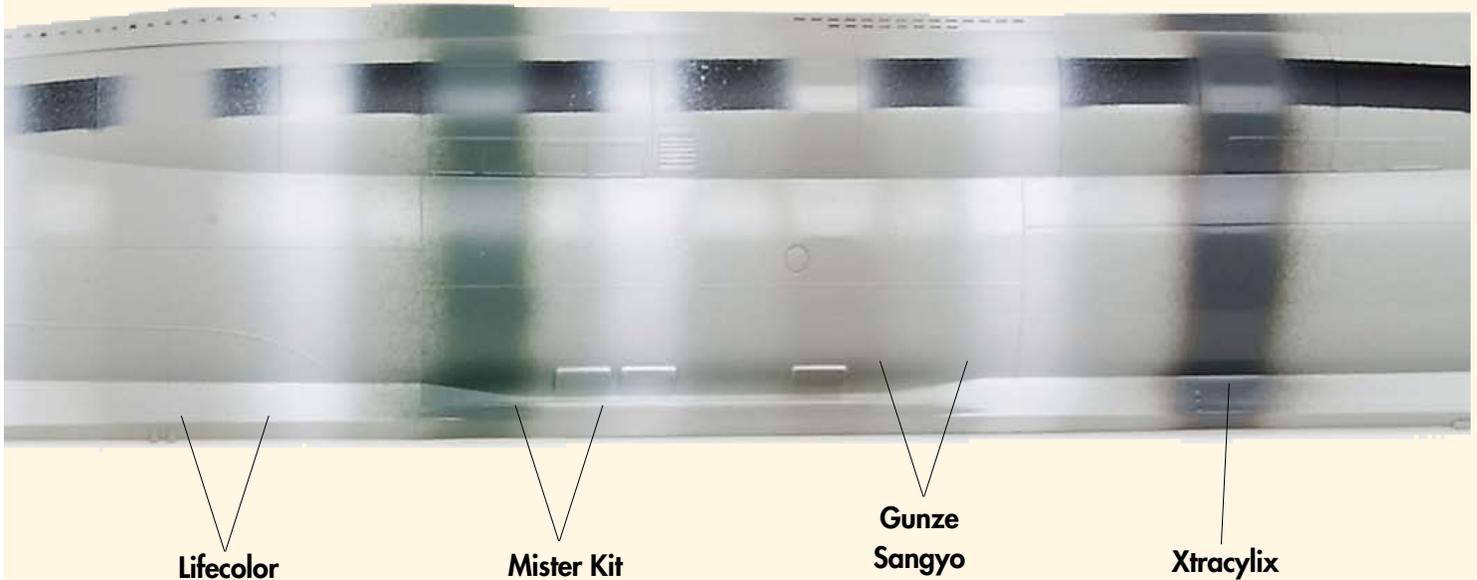
Polly
Scale



A sliver of silver

AS AN ADDED evaluation, I sprayed silver paint from six of the nine brands evaluated. Colors tested were Mister Kit alluminiata (MKAC-022), Lifecolor gloss silver (LC74), Vallejo Model Air silver metallic (No. 71063), Model Master Acryl silver (No. 4678), Tamiya chrome silver (X-11), and Gunze Sangyo silver (H8).

With the appropriate thinner, all of them sprayed smoothly and thinly from 20-25 psi. I used a wing from Revell Germany's 1/72 scale C-160 Transall; all six paints covered well without obscuring fine, recessed panel lines. All produced a semigloss finish.





MODEL MASTER ACRYL

Manufacturer: Testor Corporation, 440 Blackhawk Ave., Rockford, IL 61104, 800-962-6654, testors.com

Price: \$2.99 for ½-oz. (15ml) bottle

Recommended thinner: Testors Universal Acrylic Thinner (No. 50496)

Comments: Testors introduced the Acryl line to replace the first Model Master acrylic enamels (tested by Matthew 10 years ago). The line is large: In addition to the 140 paints in the Model Master series, including car, figure, and 96 military colors matched to FS, RLM, and ANA standards, the Acryl II range includes 64 marine colors for shipbuilders, and 54 fantasy colors for gamers and figure modelers. An additional 58 colors are sold in the Acryl General range in Testors' traditional ¼-oz. square bottles for a total of 320 paints. There are also clear coats available.

Performance: Acryl paints are thin enough to be airbrushed straight from the bottle, but I found they performed better with a drop or two of thinner or 91 percent isopropyl alcohol. Both colors tested – gloss white (No. 4696) and flat gull gray (No. 4763) – went on smoothly in light coats at 20–25 psi. The gull gray dried very flat, while the white proved suitably glossy. Both were opaque without obscuring surface detail and stood up well to the Tamiya masking tape, although the gloss white pulled up with heavier tape.



VALLEJO MODEL AIR

Manufacturer: Acrylicos Vallejo, S.L., Apartado 337-08800 Vilanova i la Geltrú, Barcelona, Spain, 34-93-893-6012, www.acrylicosvallejo.com

U.S. distributor: R&K Productions, 7201 Garden Grove Blvd., Suite A, Garden Grove, CA 92841, 714-786-8025, www.r-kproductions.com

Price: \$3.00 for about ⅓-oz. (17 ml) bottle

Recommended thinner: Model Air Thinner (No. 71061)

Comments: Manufactured in Spain, Vallejo's Model Air range covers 96 colors including metallics and clear varnishes. The range features widely used military colors, most identified by their common names. The paints come in a convenient plastic eyedropper bottle.

Performance: Although designed for airbrushing, these paints still need to be thinned before use; I added thinner until the paint was the consistency of milk. I airbrushed the light grey (No. 71050) at about 25 psi, achieving good coverage with a minimum of passes. The paint was opaque without obscuring surface detail, and finished with slightly more sheen than the other flat paints tested. No tape used lifted either color.



VALLEJO MODEL COLOR

Manufacturer: Acrylicos Vallejo, S.L., Apartado 337 - 08800 Vilanova i la Geltrú, Barcelona, Spain, 34-93-893-6012, www.acrylicosvallejo.com

U.S. distributor: R&K Productions, 7201 Garden Grove Blvd., Suite A, Garden Grove, CA 92841, 714-786-8025, www.r-kproductions.com

Price: \$3.00 for about ⅓-oz. (17 ml) bottle

Recommended thinner: Model Color Thinner (No. 70524)

Comments: Vallejo's original range of 220 colors includes metallics, glazes, mediums, and fluorescents. In addition, Vallejo markets Game Color paints (84 specially labeled colors for fantasy modeling). Model Color also comes in the 17ml plastic eyedropper bottle.

Performance: Originally marketed for figure painting, these paints are very thick in the bottle and require a lot of thinner or water for airbrushing. Once the paint was thinned, I found I needed many very thin coats to get good coverage without pooling or runs. Once dry, the paint covers well and dries smooth. The gloss white (No. 70842) yielded a semigloss finish. There was no lifting from the masking tape.

Safety with acrylics

WHILE GENERALLY considered safer than solvent-based enamels, acrylic paints should still be handled with caution. Many contain alcohol, ammonia, or other agents which can irritate your throat or lungs if inhaled. Wear a good two-stage respirator whenever you airbrush; a pair of safety goggles is a good investment, too.

As always, good ventilation is essential when using acrylics. If you can smell paint after you finish spraying, the ventilation is inadequate. In addition, some acrylics are combustible and shouldn't be used around open flame.



TAMIYA COLOR ACRYLIC PAINT

Manufacturer: Tamiya, Inc., 3-7, Ondawara, Shizuoka City, Japan, www.tamiya.com

U.S. distributor: Tamiya America, 2 Orion, Aliso Viejo, CA 92656, 800-826-4922, www.tamiyausa.com
Price: \$2.50 for 1/3-oz. (10 ml) bottle

Recommended thinner: Tamiya Thinner (X-20A)

Comments: Also available in 3/4-oz. (23ml) bottles, Tamiya's 84 acrylics feature gloss, flat, and transparent colors. Generic and military colors are featured. Also included is a flat base (X-21) that, added to gloss colors, produces a flat finish.

Performance: Tamiya's paints are quite thick in the bottle and need to be thinned 30-40 percent thinner to 60-70 percent paint. Airbrushed at 22-25 psi, the gray dried flat, the white glossy and smooth. The gray covered well, laying down over the raised detail, while the white needed several coats. Tape did not affect either.



LIFECOLOR ACRYLIC HOBBY COLORS

Manufacturer: Astromodel S.A.S., Via M. Lercari, Sez. M/5, 16126, Genoa, Italy, 39.010.24.64.555, www.astromodel.it

U.S. distributor: Pacific Coast Models, 613 Martin Ave., Rohnert Park, CA 94928, 707-538-4850, www.pacmodels.com

Price: \$2.29-\$2.79 for 3/4-oz. (22ml) bottle

Recommended thinner: Lifecolor Acrylic Thinner

Comments: Made in Italy, Lifecolor features more than 150 colors, including such specialized colors as Italian aircraft camouflage. In addition to the single colors, the company markets sets of paints for specific subjects.

Performance: These are thicker-than-normal paints but thin well using a mix of 30-40 percent Lifecolor thinner. The two colors tested airbrushed well at about 25 psi, the gray drying flat and the white to a satin finish. Tape lifted neither color.



POLLY SCALE MODEL & HOBBY COLOR

Manufacturer: Testor Corporation, 440 Blackhawk Ave., Rockford, IL 61104, 800-962-6654, testors.com

Price: \$3.99 for 1/2-oz. (15ml) bottle

Recommended thinner: Testors Universal Acrylic Thinner (No. 50496) or distilled water

Comments: Polly Scale's 136 model and hobby colors are matched to WWI, WWII, and modern military standards, conveniently broken down by service and era. In addition, Polly Scale's Railroad range covers more than 100 colors matched to railroads and including several useful weathering colors.

Performance: Thinned 10-15 percent with acrylic thinner or distilled water, U.S. gull gray light (No. 505380) and white (No. 505011) went on smoothly and covered well. The gray dried flat; the white, not a gloss, dried satin. Neither color lifted during the tape test.

A word about thinning

PROPER THINNING of acrylic paints is essential, especially when airbrushing.

While some of the paints tested are thin in the bottle, a little extra thinning makes them easier to handle. Some brands, such as Polly Scale and Xtracrylix, carry thinning ratios on the bottle, but most don't. And, in some cases, a single ratio does not cover every paint in a brand's range.

If the manufacturer has a thinner/paint ratio listed, that's a good place to start. But test it first. The type and model of airbrush you are using, the size of the tip, the desired effect, even the weather (particularly humidity) can affect the paint performance and the amount of thinning required.

The key is experimentation. For these tests, I poured a little of the paint being tested into a separate container, then added the recommended thinner a few drops at a time until the paint reached the consistency of milk. Another way to test the consistency is to take a little paint on a toothpick tip and touch it to the side of the container; if it runs smoothly back into the bottom but leaves a little on the side as it goes, it's about right.

During these tests I used some paints in the Thayer & Chandler Omni 4000 double-action airbrush I use for my everyday airbrushing. I found that the paint did not need to be as thin as it did for the Badger 350. I also set the regulator about 10 psi lower with the Omni.

Also, be mindful of what you can use to thin the paint. Normal isopropyl alcohol works great in Acryl, Tamiya, and Gunze Sangyo – but it turns Vallejo into an airbrush-clogging goo.



Some of the brands tested feature their own thinner, but regular alcohol and even water can be used with many.

AIRBRUSHING Future

Put away your mop!
The acrylic floor
finish is easy to
airbrush for
perfect high-
gloss clear coats

By Matthew Usher



Two of modeling's most useful tools. Applying Future with an airbrush makes a wide variety of finishes and effects possible.

There are a lot of models in every issue of *FineScale Modeler*, and sometimes I think every one of them has some Future on it. I'm fairly certain the chemists at S.C. Johnson had no idea their new floor polish would end up being used on scale models.

Technically speaking, Future is an "acrylic floor finish." Although it's sometimes mistaken for a wax or a polish, it's neither; it's really more of a clear acrylic paint. Several things make Future ideal for modeling: It's inexpensive, it's easy to work with, it levels out on its own producing a smooth, glossy finish, that's also plenty durable (remember, it's made for people to walk on, after all!) There are no noxious fumes, and cleanup is simple. How many other modeling supplies have such a long list of positive attributes?

One of the most common uses for Future is as a clear gloss base coat for decal application, and one of the easiest ways to apply it to a model is with an airbrush. If you've never airbrushed Future before, here are the basics of what you'll need, and what you'll need to do.



1 Thinner? It's not required with Future. You can go straight from the bottle to the airbrush.



2 The He 162's wing is painted with flat light blue paint. It needs to have a clear gloss coat applied to it before the insignia decals go on.



3 It's best to apply Future in light, thin coats. Dial in a low air-pressure setting, too.



4

As the Future dries, it “levels out,” leaving a smooth, even finish that’s perfect for decals.



5

The decals adhere perfectly to the high-gloss Future. A final clear-flat coat seals them down.



6

Windex window cleaner or diluted household ammonia will clean the Future out of your airbrush. Make a point to clean your airbrush right after your painting session.

Fill ‘er up

Believe it or not, Future is ready to airbrush straight from the bottle; no thinning is necessary, **1**. You might decant it into a smaller bottle to make it easier to pour into the airbrush, but otherwise, it’s ready to go.

Now is as good a time as any to mention a couple of key things about Future and models. First, it’s best to use a fresh bottle of Future for modeling. This point is especially worth noting because Future comes in a big, big bottle (compared to other modeling supplies), and for our purposes, a little Future goes a long, long, way, and you may never get to the bottom of a bottle, no matter how much modeling you do. “Fresh” Future is thin and clear. Future that’s been around for too long will have a yellowish cast and will thicken slightly. If there’s any doubt, pick up a new bottle at the supermarket and use the older stuff to shine up the kitchen floor – it’ll still work great for that!

For this example, I’m applying a Future gloss coat to the wing of Tamiya’s 1/48 scale Heinkel He 162, **2**.

Future goes on best in light, thin coats, with the airbrush set at a low air pressure, **3**. Airbrushing in an area with plenty of light will help you keep track of your progress as the coats build up. Although the Future may have a slight “eggshell” finish right after it’s applied, eventually it will smooth out on its own into an even, glossy finish, **4**.

Future dries quickly, but I usually let it cure at least overnight before I apply decals over it, especially if I’m planning to use setting solutions. After the decals are in place and dry, a flat-finish clear coat can be used to seal them down, **5**.

Cleaning up

As detailed on the bottle, diluted ammonia is ideal for cleaning up after you’ve used Future. Windex window cleaner contains ammonia and works well, too, **6**. As soon as you’re done with your airbrushing session, flush plenty of Windex through the airbrush. A full teardown cleaning’s not a bad idea, either. Future is tough when it dries, and any excess left inside the airbrush can lock things up in short order.

Safety

Safety should always be a top consideration when you airbrush, regardless of what you’re spraying. Airbrush in an area with plenty of ventilation, and wear proper respiratory, eye, and skin protection, **7**. Most hardware and home-improvement

stores will be able to outfit you with the gear you'll need to work safely. Although Future smells nice (or at least doesn't smell bad) you still shouldn't be inhaling it as you airbrush.

Other uses

Although Future's best-known as a high-gloss finish, it can be adjusted to produce any number of sheens, from semigloss to dead flat. Some modelers have mistaken Tamiya's Flat Base (X-21), **8**, for a clear flat finish. In reality, it's an additive that can be mixed with Tamiya's gloss paints to reduce their shine, and it works just as well with Future. The more Flat Base you add, the flatter the finish gets, but the Future's protective qualities remain the same. Paul Boyer used a mixture of Future and Flat Base to produce a slightly glossy finish on Monogram's 1/72 scale X-15A-2, **9**.

Full shine

It's also worth remembering that Future makes a great final coat on high-gloss subjects. When I built my JoHan Chrysler Turbine Car, I mixed its distinctive (and unusual) copper-colored paint using Floquil's flat-finish model-railroad colors. After applying it to the car body, I added a top coat of Future to give the finish a realistic level of showroom shine, **10**.

As always, practice makes perfect, and after a little experimentation, you'll soon unlock a whole new set of finishing options to make your "future" models look even better. **FSM**



7

Protect yourself! Anytime you airbrush, you should wear a respirator to protect your lungs. Proper ventilation is a must, too.



8

Tamiya's Flat Base (X-21) can be added to Future to reduce its shine. By varying the amount you add, you can produce a finish anywhere from semigloss to dead flat.



9

Paul Boyer mixed Tamiya's Flat Base with Future to simulate the slightly semigloss nickel-alloy finish on this 1/72 scale Monogram X-15A-2.



10

The metallic-bronze paint on Matthew's JoHan Chrysler Turbine Car has a top coat of Future; it gave the flat metallic paint a glossy finish.