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# Contents

I first met Chris around 1991 at the SCAHMS California figure show. There is always an ordnance section at the show, and it was filled with a large sampling of Chris' work—showcasing his distinctive style of super-clean building and painting. His models were attracting quite a lot of attention.

Chris then moved out to California to take a job with DML/Marco Polo and for the first time began mixing his passionate love of the hobby with the business side. Our friendship continued, and when Chris wanted to expand his horizons, we both decided upon forming a company to provide the modeling world with a unique product line. That company was Warriors Scale Models, and it carved quite a niche for itself by setting new standards with an interesting range of figures and models.

Chris is the perfect choice to author this book. No one loves all facets of this hobby more than Chris or has the all-around expertise to give an insider's perspective. It's all covered here, from building and finishing dioramas to Chris' "wedgies." Chris generated the wedgie idea, and it's now a staple at model shows. Manufacturers sell them prepackaged, right out of the box, as well.

Chris is well-known for his airbrushing skills, and they are showcased here in depth. An exciting "first" for hobbyists is an introduction to casting in resin. Chris lays out the fundamentals of the process, shedding light on one of the vague mysteries of our hobby. (I'm sure this will be a dog-eared section of the book for those wishing to get into this aspect of modeling.)

This book is a must-have for beginners looking to expand their modeling skills as well as for serious hobbyists.

—John Rosengrant

A master modeler in his own right, John Rosengrant is a leader in the motion-picture field of character effects. You've seen his work in the *Terminator* series, the *Jurassic Park* series, *Aliens*, *Predator*, *Edward Scissorhands*, and *Avatar*. He is one of the founders of Legacy Effects, which completed projects for *John Carter of Mars*, *Real Steel*, and *Twilight: Breaking Dawn*. To learn more about John and his work, visit [legacyefx.com](http://legacyefx.com).

## A NOTE ABOUT THIS BOOK

Building great dioramas requires modeling skills from the ground up. If you're a woodworker, you can make your own wood frame to contain a display base. If you're making groundwork, you can make your own—from plaster, Celluclay, even wall patching compound—and cover it with dirt, sand, or artificial grasses and trees. But the model is not finished until you set it on the base and put it on a shelf or start taking it to shows. How much you want to put into any given project is up to you. I believe this book gives you the information to get your dioramas on the shelf.

—Chris Mrosko



11 Steve Hustad's 1/72 scale diorama combines figures, an artfully damaged Junkers Ju 52, and groundwork featuring a Celluclay base covered with Verlinden static grass, Woodland Scenics scrub brush, and Hudson & Allen snow mixed with Verlinden thermoplastic microballoons. The sum of these elements is the story: it's late winter in Luxembourg and the war is not going well for the Germans.



12 "The Last Supper" shows German soldiers pausing for a quick meal before bugging out of Normandy. As the first diorama I ever sold, it's not bad. Since then, my composition (and photography) has improved in terms of focus. For instance, the two soldiers around the corner of the church (at right) contribute little to the scene.



You can even build a narrative with just one model. For instance, a crashed airplane tells its own story, **11**.

One of my first serious dioramas (and the first one I ever sold) was called "The Last Supper." Although there's a fair amount of action in it, and it's focused, it is not as simple and direct as the dioramas I do now, **12**.

### Natural environment—elements in their element

In a good composition, groundwork, foliage, models, and figures all have to agree. If you're going to do a diorama of the British Special Air Services on patrol in North Africa, you want desert terrain, figures in desert garb, vehicles correctly painted and marked for the time and locale, and a pose that's in line with all the elements, **13**.

If you are modeling an American tankerman at the Battle of the Bulge, even though he may not be on the ground in the elements, he should be muddy if he's on the tank, **14**. Don't pose a clean, dry figure on the tank. Show the context; do a continuity check. How did the soldier get on the tank? If he climbed up on that tank, add a little grime to support the story. Show the lead-up to the final results.

Research and imagine. Lean on your visual references. If you have an Afrika Korps theme, look at a variety of desert scenes, not just PzKpfw IIs in Africa. Read books on the Afrika Korps and desert warfare, and study the terrain. Then you can set the scene of your diorama.

You could come up with a nice, sandy setting, but not necessarily a pristine one or one at an oasis. Look at your resources and imagine where the setting is going to be and decide how you're going to create it.

But don't get so hung up on one reference or photo that it limits you. Everything you use doesn't have to be from the same photograph. You can add elements from other sources as well. Beg, borrow, and steal, **15**.

You can add a lot of life to even a small scene. Whether it's a bit of stonework and a bridge, a little lizard hiding behind a rock, or a dog in the yard, incorporate it! These small details add up. Imagine the place, look around, and visualize what you see. Add little touches of ordinary life to make



**13**

John Rosengrant's SAS patrol conveys desert from the sandy and scrubby groundwork to the soldiers' keffiyehs, an adoption of local garb to protect the head and neck from sunburn. Every detail contributes to set the scene and tell the story. *John Rosengrant*



**14**

This is an example of an accurately imagined scene. Many details place John Rosengrant's diorama at the Battle of the Bulge, including the snow on the ground, the Sherman Jumbo tank fitted with "grousers" on the track (extensions to reduce ground pressure in muddy conditions), and the European ruins behind the scene. On the tank, the muddy footprints left by the soldier standing next to the turret further animate the scene. There are a lot of figures to manage in this diorama, but John does a great job of engaging all of them in credible actions: the dogfaces on the left cutting up and killing time, while the tank commander studies the map.



30

The base features a big resin casting for my building section to stand on. You'll notice my sidewalk section (again). The blue flecks are from the RTV of the mold.



31

Brush-painting a wash brings out details. With the brush, I also added hairline cracks and other features.



32

More washes and powdered pigments provide color variation and, by adding darker tones in recesses, more depth. The swatch of paper with Arabic-looking characters doesn't actually say anything, but at this scale, it works.



33

A website provided the Coca-Cola sign image, à la Mogadishu, which I scaled to make a decal. After applying the decal, I painted some of the bullet holes and used filters and washes on it. Some of the weathering was done in Adobe Photoshop and was built into the image.

cured and used it for a master. That texture will stand out when painted.

I painted the sidewalk the base color, highlighted it with a lightened shade of the base color, and began applying washes, **31**. This painting process gave the sidewalk a little more depth and dimension.

Multiple layers of washes and pigments created a look of concrete poured over decrepit stonework, **32**. Near the sidewalk, I dropped in one of those little details that are important in providing the Wow Factor: a newspaper lies crumpled in the sand. I painted the letters to look like Arabic script, but there are no legible words. Being that small, from a distance it looks pretty doggone good!

After seeing a picture of a "Welcome to Mogadishu" billboard, I surfed the Internet some more and came up with a real Coca-

Cola sign, **33**. I scaled it down to size in Adobe Photoshop, and also added some weathering with the software program. Weathering graphics on the computer is a touch that can help draw your eye to the scene and up the Wow Factor.

I then applied various filters and layers with oils and acrylics, and painted on the bullet holes.

To finish the base, I gave it a faux-wood paint job.

### Desert Storm armor defilade

In the uncertain early stages of Operation Desert Storm, the media, in describing the Iraqi armor that would oppose the advance of the coalition forces, mentioned tanks in dug-out positions, or berms. Also called *defilades*, these emplacements were situated below the attackers' line of vision to defend against enemy fire.

While the defilades made for interesting explanatory graphics in television news reports, the tanks in those emplacements were no match for coalition armor. In fact, the tactic was to leave the Iraqi tanks right where they were and roll over the top of them.

I thought a defilade was yet another effective and unusual way to display an armor model, **34**.

Like the base I built for the Marder III, this one began with Styrofoam covered with Apoxie Sculpt. Then I added real dirt, which was coarser in this diorama to show a different texture than that shown in the Somali scene.

After preshading the deepest contours with Tamiya dark yellow (XF-60) darkened with flat black, I airbrushed the terrain with the dark yellow straight up, **35**. But the preshading remained in the corners and





**7** Camouflage will later cover the sharp contrast between shadows and highlights, but they will still show through.



**8** The camo pattern begins with a faded black; I added a little flesh and blue to the black to give it that faded appearance. If you look at the lapels, you can see the highlights under the camouflage.



**9** I outlined the black tiger stripes with the second camo color to complete the pattern. You can see how the direction of pattern varies on different sections of the shirt.

and shadow over the camouflage doesn't work well, and, if you do, it could take forever.

At this stage, the contrast of highlights and shadows appeared very stark, **7**. Later, a lot of this would be covered with camouflage, yet the effects would still show through.

**TIP: The best way to judge where to emphasize shadows and highlights is to place a figure right under a single lamp (turn off all the other lights in the room). This gives you a look at the most prominent highlights and deepest shadows. Sometimes I'll take a photo of the figure and keep it by my workbench as reference.**

The first layer of the camouflage pattern was black, lightened with a little flesh and a little blue to show fading, **8**. The black doesn't have to be pretty, but it should have sharp edges. It's a disruptive pattern calculated to hide or "disrupt" the true shape of the body inside the uniform.

A lot of modelers make the mistake of painting the whole uniform as a one-unit piece. They paint over the pockets without thinking about the fabric and how it was sewn together. On real uniforms, the patterns on the pockets might not run in the same direction as the pattern on the shirt

or pants because the pockets were sewn onto them. Around seams, such as those on shirt sleeves, the patterns change. The patterns aren't even the same coming across the horizontal. It depends on how the fabric was cut. In the back, the pattern on the collar runs vertically—perpendicular to the shirt, **9**.

I used the second color (50:50 Reaper Terran khaki and Lifecolor olive drab yellow tone) to outline the black pattern. Again, this second camouflage color can vary depending on factors such as the light source it's seen in, the printing of the fabric, the printing of a photograph, or the fading of the fabric. It can look like anything from a pale green to something near yellow. What I matched up came out pretty close to khaki. Since the webbing goes over the shirt, you have to connect the pattern on both sides of the webbing, **10**.

### Uniform details

After working on the camo pattern, I turned my attention to some of the uniform details. I painted the webbing a darker shade of green—webbing can be hundreds of different shades of greens and khakis, **11**.

The buttons were base-coated with the same color as the webbing, but I dropped in shadows and highlights to make them look more three-dimensional.

To outline the stitching on the sleeves and collar, I used the highlight colors.

I researched the markings from photo sources and hand-painted them. The Special Forces patch on the bicep is Reaper marine teal (No. 09077), **12**. I outlined the patch by adding a little bit of white to the teal. I painted the sword and lightning bolts with yellow artist's acrylics: a golden yellow base, and then a flat yellow with just a drop of white over that to highlight.

The Airborne tag took me five tries to get right! I first tried to paint it with oils. That looked OK at first, but the yellow oil kept seeping into the black and wouldn't dry. So I scraped it all that off and started over with acrylics.

I painted Sisler's name tag and other patches to look as if they lie beneath the webbing, **13**. The American lieutenant's bar is on the collar, and the equivalent South Vietnamese rank is signified by the two stars on the chest. The shield on the breast pocket is a Mike Force patch.

With the uniform completely painted, you can still see the effects of shadow and highlights, especially on the stitching and the webbing, under the camouflage, **14**. It's all from the same sequence of painting—base, shadow, highlights, and outlining superhighlights.

Now it was time to put a face with that uniform.



27

You can see how the pressure has pushed resin into the mold. There's even a little "short-shot" as the resin is short of the very top of the mold, but it is not enough to spoil the pieces.



28

I snipped away excess resin with a sprue clippers (Tamiya Craft Tools 74035 sharp-pointed side cutters) and then removed the sealing tape and gently pried the mold open to extract the castings.



29

The first piece came out of the mold and was looking good.



30

After I saw off the pour plugs and clean the cast pieces up a little, they'll be ready to install on the Abrams.



31

The antenna and gas cans, as well as several other resin-cast items, have been added to the tank. All the extra parts add up to make a more detailed model.

Now the mold went into the pressure tank, **25**. I put the lid on and tightened it down. I built the pressure by letting the air in slowly. Otherwise, the incoming air can tip the mold over and blow the resin right out of the mold. It probably takes 10–20 seconds to put the air and get the pressure up to 80psi, **26**.

### Demolding

The pressure pot pushed the resin into the mold and left a little "short-shot," **27**, but it

was still within acceptable parameters for personal use. I cut away the tape sealing the mold and used a sprue clipper to snip away excess resin, **28**.

To extract a casting from the mold, part the silicone and very slowly and carefully pull it out. If you try to yank it out, you'll rip the mold. It's a four-finger process. I spread the rubber with two fingers on one hand and eased the first part, a modern-style fuel can, out with two fingers on my other hand, **29**.

I carefully took the rest of the castings out of the mold, and they looked mighty clean, **30**. After a little trimming, they were ready to detail my Abrams tank and make it look like it belongs in the field, **31**.

My system optimizes the resin-casting process. But you don't need all this equipment to cast resin. If you can build simply, mix well, and pour slowly, you can simply and effectively make your own resin castings.



19

I reinforced MiniArt's lamppost with a brass rod to keep the light mount from drooping. I also added the decorative fixture and shade as well as the ornamental points at the top.



20

Just checking: I like to place elements as I go along to see how they work together. Adding the styrene weld seams and handles made the Kettenkrad a little more accurate. Notice how much photoetched brass is in that infantry cart behind the Kettenkrad—a tough little build!



21

Not all bricks are created equal—nor are any two exactly the same color. I used seven red and brown complementary colors that added detail and provided chromatic depth as well.



22

I dredged the paint pigments from the bottom of the tins and placed the blobs on a palette where I could pull bits of them out to mix other shades separately.

For painting bricks or cobblestone, I prefer Humbrol enamels, solvent-based paint. A lot of different colors go into creating a realistic look, 21. I used seven complementary colors here (red, orange red, a deeper red, garage red, brown, a deeper brown, and burgundy). Then, by adding tan, black, or yellow ochre artist's oils, I easily turned those seven colors into 20 or more different shades. The artist's oils are solvent-based too, so I could mix them right in and use the same thinner as with the enamel.

While sitting in the containers, the enamel pigment settles to the bottom, and the oil, or carrier, comes to the top. I spooned out the thick pigment, which is pure color, 22.

When using the paint in this state, it's very slow-drying. Instead of drying in 10-15 minutes, I can still get color out of pure pigment two hours later. I can work with it however I want. I can thin it with plain old cheap mineral spirits, control the drying time, and take my time applying colors.

Speaking of colors, the very first one I applied in what was a long sequence was a bright, fire engine red, 23. I applied it in a random pattern using a flat brush, such as a No. 4, and dabbed on little splotches. I don't paint individual bricks, which I suppose you could do if you were bored, but instead produce an overlap that blends with the subsequent colors.

But before I started any blending, I applied an orange red, 24. I don't paint straight from a pigment blob. I push a little pigment to the side and add thinner, so the paint is fairly thin.

As I added darker tones to the bricks, the paint built up and colors started to blend, 25. After I completed the multi-hued base coat, washes continued to blend the different shades, 26.

### Sidewalks

It's the same process for the sidewalk, but with different colors. I selected seven colors complementary to gray, 27. Again, I thinned these quite a bit, but not so much that they became transparent.





8

This is the first “Defenders of the Reich,” which I call the *Wehrmacht* version. I liked it well enough to want to try another version to see if I could improve on it—and because I sold this one!

## FINDING MOTIVATION

Soon after completing the Wehrmacht diorama, I started the SS version, but then it sat on the shelf for about two years. One day, Mig Jimenez, of AK Interactive, came to my house for a visit. While he sat on the floor wrestling with my two dogs, he noticed the uncompleted SS version and said, “That’s a very nice vignette. You ought to finish it.” That comment from a friend was all it took for me to get going. It was already built and primed, so I pulled it off the shelf and had it finished within a week.

you might have to make changes. That’s why I continually check the figures’ fit.

As I painted, I stopped every now and then to test-fit the figures because sometimes even an infinitesimal bit of paint alters that nice, tight fit, **10**. If it does, then I go back and scrape off a little bit of paint so the figure fits its “sockets” in the base.



9

In the SS version of the diorama, the scene is more vertical, with a tighter composition, and more action taking place in a slightly smaller space. The base has been primed.