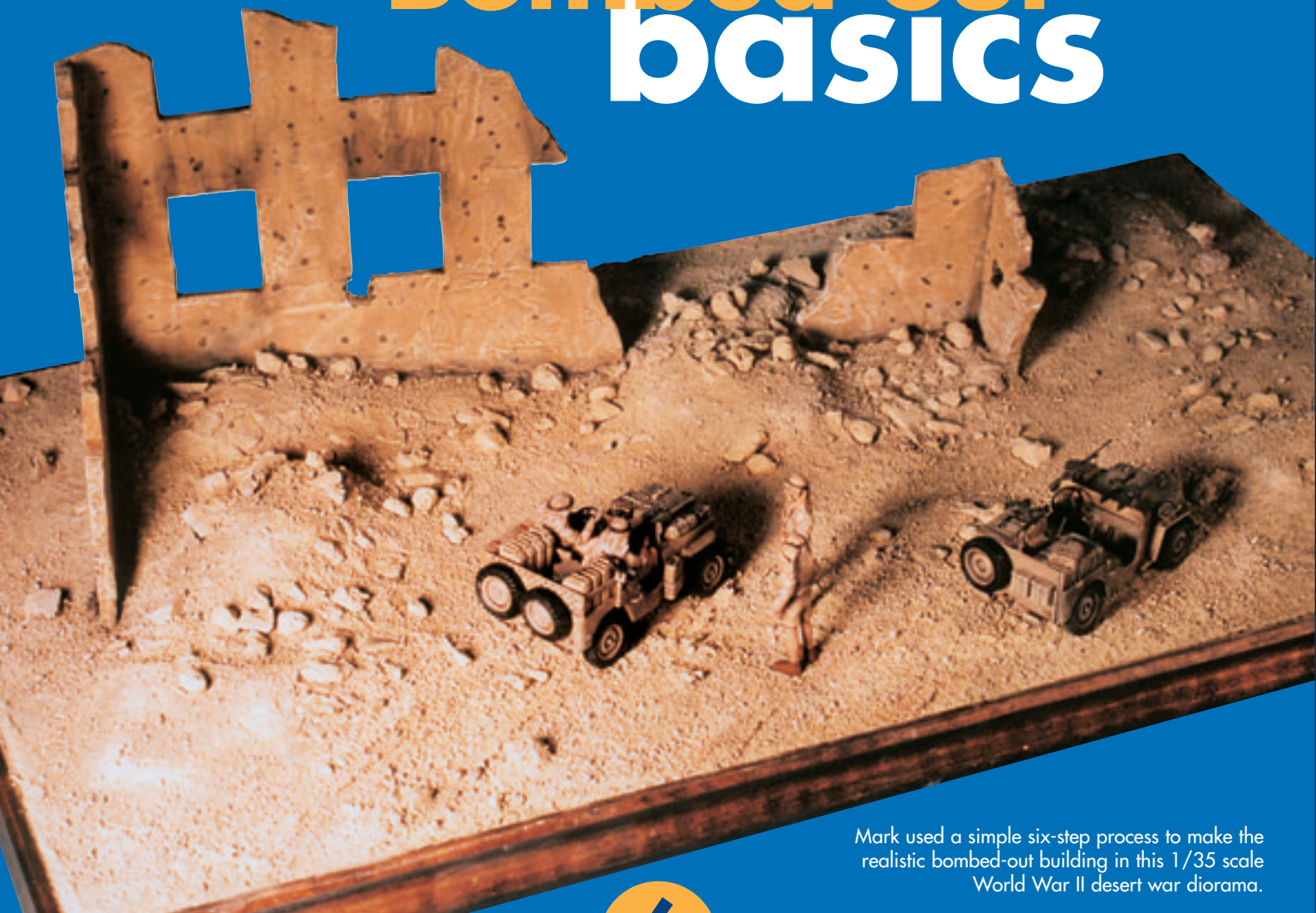


Bombed-out basics



Mark used a simple six-step process to make the realistic bombed-out building in this 1/35 scale World War II desert war diorama.

6

EASY STEPS FOR REALISTIC BATTLE-DAMAGED BUILDINGS

Story and photos by Mark Theoharis

Whether it's a gutted storefront in London during the Blitz, an urban fortress in the ruins of Stalingrad, or the remains of a plantation from Sherman's march to the sea, battle-damaged buildings appear in almost any war scene. Many modelers shy away from dioramas because they're intimidated by the prospect of constructing buildings. Bombed-out buildings are actually easy to make from scratch, and well worth the effort.

Follow along as I demonstrate the six steps for real-

istic ruins by constructing the shell of a stucco building for a World War II desert diorama.

SOURCES

Golden Gel Mediums Golden Artist Colors Inc., 800-959-6543, www.goldenpaints.com

Brick surface styrene sheet Plastruct, 626-912-7016, www.plastruct.com

Bricks and rubble Verlinden, 636-379-0077, www.verlinden-productions.com

1 PLANNING

Before you buy a scrap of wood or invest in any materials, the first step is planning. Complete the diorama's other major elements (armor, aircraft, or figures) first to get a feel for the overall dimensions of the space. Study photographs to get an idea of the appropriate size for your structure. Scale is important: Walls that look out of proportion with

other elements will be obvious giveaways on the finished product.

Using scrap cardboard, scissors, and tape, make cardboard mockups of the buildings, **1A**, and position them on the diorama base. Experiment with different placements before settling on a final layout. Don't do any groundwork yet; add that after the building shell is attached to the base. When you're completely satisfied with the layout of your mock-up, you're ready to commit to materials.

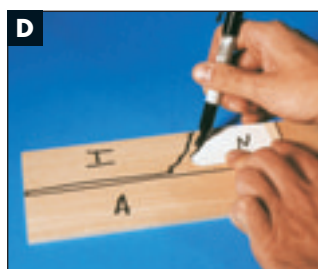


2 MATERIALS AND PATTERNS

The best material for making walls is basswood or plywood. For 1/35 scale buildings, $\frac{3}{16}$ "- or $\frac{1}{4}$ "-thick sheet usually works best.

Your cardboard mockup is now going to serve as your pattern. Using a pen, draw lines on the mockup that divide it into fairly uniform pieces with as few complex edges as possible, **2A**. Label the pieces with letters or numbers, then make a diagram of the mockup on a sheet of paper with the labels written on the pattern pieces; this will be your blueprint later on during assembly. Cut out the pieces, **2B**, and lay them out to determine how much wood you'll need, **2C**. For my example, I used a 4" x 24" x $\frac{3}{16}$ " piece of basswood.

Trace the patterns on the wood, **2D**, and use a jig-saw or coping saw to cut out the pieces, **2E**. Don't cut too close to the pattern lines; leave a little extra outside the lines so there's room to sand the pieces to their final shapes.



3 ASSEMBLY

Test-fitting along the way, sand or file the pieces that are too big. Absolute precision isn't necessary – the pieces just need to fit well enough so you can glue them into place.

Join the pieces with small-diameter dowel rods or round toothpicks: Line up adjacent pieces and, using a straightedge, mark across them the best locations to drill pilot holes, **3A**. Make sure the holes

don't interfere with each other.

Mark your drill bit with a piece of masking tape, **3B**, so the pilot holes will

all be the same depth. Cut off lengths of dowel that are slightly shorter than twice the depth of the holes. For example, if the





holes are $\frac{1}{2}$ " deep, cut the dowel into pieces a little less than 1". On side pieces, drill the hole completely through the piece, run the dowel through it, and saw off the excess after the glue has dried.

Put a bit of wood glue or white glue in

the pilot holes and insert the dowel rods, **3C**. Let the pieces dry for a few minutes, then put glue in the matching holes and on the joint edges. Apply enough glue to the edges to make a solid bond when the parts are joined, but don't overdo it. Wipe

off excess glue with a damp cloth.

After the glue has dried, **3D**, trim any protruding dowels, **3E**, and fill the seams with model or wood putty. Let this dry overnight.

4 TEXTURING

An easy way to give the walls texture is to use acrylic gel mediums. They can be found in most art-supply stores in varying thicknesses, colors, and grains. For simulating stucco and concrete, I use Golden Gel Mediums fine or very fine pumice gels. Be careful not to select a grit too coarse for your diorama's scale. These gels can be colored with acrylic paints, and if they get too thick, they are easily thinned with water.

I decided to apply the gel before attaching the walls to the base, but depending on a project's needs, it can be done later. I also chose not to color the gel because I intended to paint and weather my building.

Spread the gel over the surface evenly



with a small putty knife or rubber spatula, **4A**. It's difficult to remove excess gel once it's dried, so don't apply it too thick, **4B**. If it turns out to be too thin, you can always go back and add more.

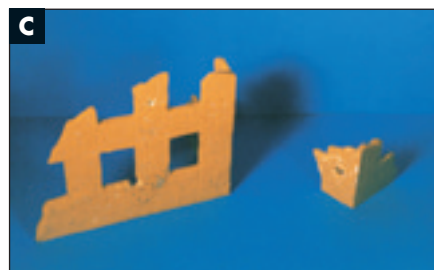
Simulate cracks in the surface with a scribe or awl when the gel is still soft, but after it has dried for several hours. Study pictures or actual damaged structures beforehand to get a good idea of what



these imperfections should look like.

After drying overnight, the gel should be firm but still slightly spongy. Trim excess with a hobby knife or razor blade, or add additional layers as needed (just be sure the layer you're applying them over is completely dry). Depending on conditions in your workplace, it may take one or two days for the gel to dry completely.

5 PAINTING AND MINOR BATTLE-DAMAGE



I prefer to paint with oil-based paints because water-based paints can re-wet and soften the gel, making it difficult to work on.

Apply a base color to the entire struc-

ture, **5A**; it can range from light tan to white to ugly gray, depending on the diorama setting. After the base coat is dry, you can add bullet holes and shrapnel damage using a drill bit in a motor tool.

At medium to high speed, tap the drill gently against the surface, **5B**, making random holes in the gel. Use different diameter bits to simulate damage from different caliber weapons, **5C**.

If some gel fibers stick out of the holes, simply remove them with a hobby knife. If you drill down to the wood, don't worry; fill the holes with more gel and try it again.

Large areas of battle damage actually need to be planned out earlier in Step 4, before the gel is applied. Small holes that go completely through the wall can be drilled and covered with gel along with the rest of the surface. When the gel is

dry, use a hobby knife to punch out the hole and make rough edges.

Areas where the wall's underlying stone or brick core has been exposed can be simulated with brick- or stone-pattern styrene sheet available at stores that sell model-railroad supplies. Plastruct makes a wide range of such materials in various scales and textures.

Cut out a piece of the sheet in the shape of the exposed area and glue it onto

the building. Apply the gel around the edges of the styrene, leaving the textured area exposed.

Paint the battle damage like the rest of the structure, but use redder colors for exposed brick. Use tan and light colors for exposed stone. Very large holes can be detailed with loose bricks or stones; Verlinden makes bricks and rubble ideal for this application.

6 WEATHERING

Apply several highly thinned washes made by adding brown or black to your base color, **6A**. The wash should be mostly thinner, very little paint. Apply it so a little extra pigment accumulates in crevices and recessed areas.

Let the wash dry thoroughly, then dry-brush the entire building with a lighter shade of your base color, **6B**. Repeat this process several times with increasingly lighter colors. Try adding a touch of brown or tan to reflect the color of the ground in the area, but don't overdo it. You want a hint of color, not glaring patches. If the dry-brushed highlights seem too bright, dull them down with another wash.

When the overall wash and dry-brushing are done, you may want to add subtle highlights to the battle damage. Older damage can be colored dark gray or black, newer damage in lighter shades. Highlight the battle damage with tan or light gray, mixed with some reddish-brown to simulate brick where needed.

Spray the model with a protective coat of clear flat, let it dry thoroughly, and apply artist's pastel chalk. Shave a little pile of chalk dust from the stick with a hobby knife and brush it on to highlight the lower portion of the building.

If you want to simulate the effect of a raging fire, add black chalk smoke trails coming from windows or doorways. Light gray or even white can simulate soot left by different materials. The pastel dust can be anchored by moistening it with a little acetone (see "Less mess with pastels" in the November 2002 FSM).

At this point, I attached my building to the diorama base using the dowel rod method, **6C**, and added groundwork around the structure, **6D**. Finally, I positioned the figures and vehicles, **6E**. The ruins give them a sense of proportion and add impact to the finished diorama.



My sample took less than a week to build, and most of the time was spent letting it dry between steps. Once you have

gained the confidence to create your own buildings, you can boost the realism and impact of any diorama. **FSM**