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This spray booth from Paasche is large enough to hold most models. The exhaust fan and ductwork are out of sight at the rear.

The BearAir Polar Bear (model 1000) is a solid, basic-level compressor. It has a built-in regulator and a moisture trap.

The air regulator allows you to adjust air pressure, and the moisture trap filters out water before it reaches your airbrush.

Cans of propellant are expensive, and it's difficult to regulate the air flow because of varying pressure as the can is used.

Use a filter when using a siphon cap on a bottle. Stainless-steel filters work well, but they require cleaning after each use.

Small pieces of pantyhose, held over the siphon tube with small rubber bands, serve as cheap, disposable filters.

keeps any water (formed when air is compressed) from reaching your airbrush and model.

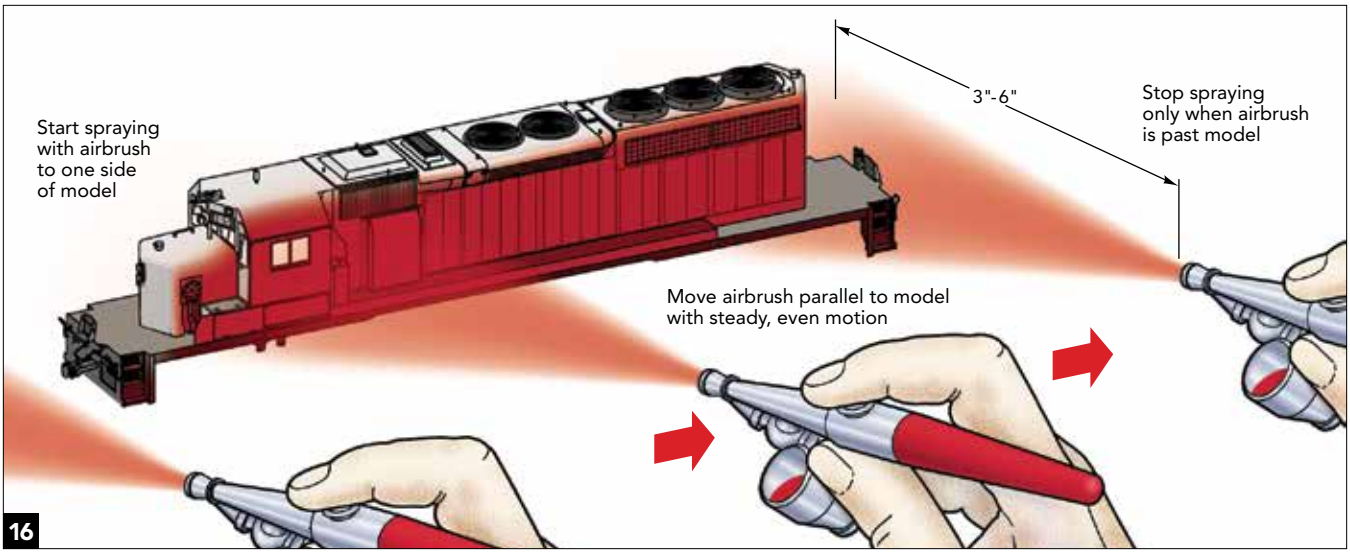
If you plan to do a lot of painting, consider spending the extra money for a silent compressor. Although more expensive, as the name implies, they are very quiet, making about as much noise as a refrigerator.

Small cans of propellant, such as Badger Propel, are handy and portable, but they are a very expensive air source, **13**. Cans will only last for a couple models' worth of painting, and the pressure will vary depending on usage.

Preparation

Start by mixing your paint. It's important that paint be thin enough to flow easily through the openings in the airbrush. (The chart on page 11 lists recommended mixing ratios and air pressure for various brands of paint.)

Shake the bottle or stir the paint to mix it. Some modelers recommend stirring paint instead of shaking it to eliminate the air bubbles that often occur when shaking acrylics. I don't find it to be much of a problem (just wait a few minutes after shaking to do anything with the paint), and I find



This illustration shows the basic airbrush painting stroke, which begins and stops off the model for more consistent coverage.

Each airbrush stroke should slightly overlap the previous one. The paint should stay wet on the surface briefly after spraying.

You can use a hair dryer to speed drying time with acrylics, as I am doing with the acrylic clear coat on this boxcar.

that shaking mixes the paint more thoroughly.

If you need to add thinner, do it in a separate jar, using an eyedropper or pipette to transfer the paint and thinner. I keep a supply of empty 1- and 2-ounce bottles on hand for this (which you can get at art supply stores and hobby shops). Mix only the amount of paint you need for each session, and make sure the paint is thoroughly mixed.

Get your airbrush ready. I'm using a Paasche H here, but the techniques remain the same regardless of the airbrush. Select the proper nozzle and needle combination. Most airbrushes have three sizes—small, medium, and large—indicated by number or letter. For the Paasche, the sizes are 1 (small), 3 (medium), and 5 (large).

When spraying acrylics, use only the large tip. The higher surface tension of water compared to most solvents means that it takes more pressure to spray water-based paints than solvent-based paints. Using small nozzles greatly increases the chance that the airbrush will clog. Even when airbrushing lacquers, it's not necessary to use the smaller tips—they are designed primarily for painting fine lines and details.

Another key to preventing clogging is to filter the paint or use a filter on the siphon tube. You can buy commercial mesh filters, **14**, but I like to use small pieces of pantyhose held in place with a rubber band (the small kind used for orthodontic devices), **15**. I keep a supply of these on hand by the spray booth. When you're done with one, you simply throw it away.

I generally prefer to use a color cup. I find this makes cleanup easier, and the cup allows you to easily transfer paint from the bottle to the cup with a pipette or eyedropper. This tends to eliminate any paint particulates or lets you see them before they wind up in the cup.

Getting a smooth finish

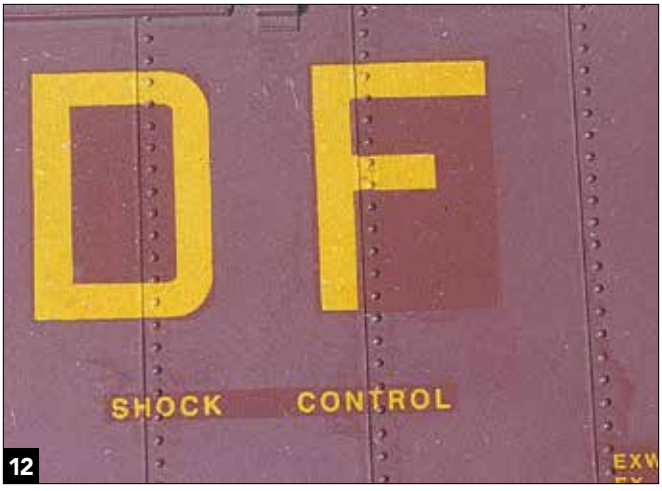
Set your air supply to the desired pressure, and then make sure the needle is closed all the way. While aiming at a scrap piece, press the trigger to start the air flow. While holding the trigger down, slowly open the needle until the paint begins to flow. When the paint begins to flow smoothly, you're ready to begin painting.

10

Carefully poke any bubbles where the decal film didn't adhere properly to the model.

11

Reapply Micro-Sol to the areas that didn't adhere properly.



12

Repeat the bubble poking/setting solution process until the decal has completely adhered to the surface.

13

Even with the decal firmly on the model, the clear film is still visible under certain lighting.

about a minute. During this time, the decal will release itself from the paper.

With heavier decals, such as Champion and Walthers, you can allow the decal to float in the water until the paper floats off. These decals are sturdy enough to move without their backing paper. However, I find it easier to keep the decal on the paper when transferring it to the model. It makes the decal easier to position.

Paint a puddle of Micro Set onto the model where the decal will go. Micro Set is a weak setting solution that softens the decal a bit but still allows you to move the decal without damaging it.

Slide the decal from the backing paper onto the model, **6**. You can use a paintbrush, tweezers, toothpick, or your fingers. If using tweezers or other sharp tools, be careful to avoid tearing the decal or marring the surface.

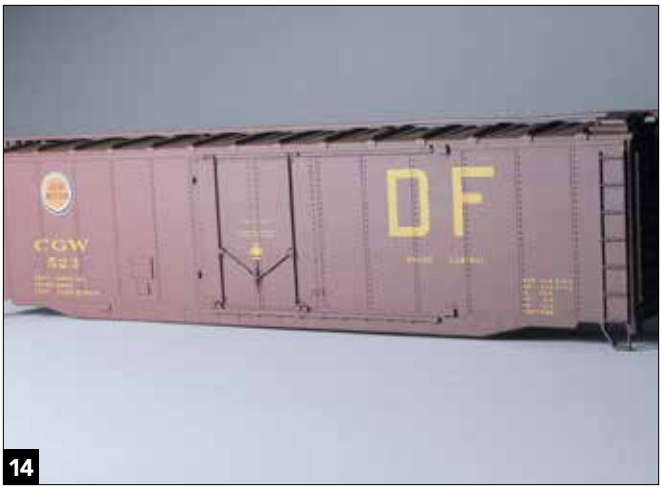
Once the decal is on the model, use a toothpick or brush to place it into its final position, **7**. If it starts to stick, add more Micro Set—don't try to force the decal into moving, or you might tear it. Make sure it is straight and properly placed—follow rivet lines or other details as reference points.

Once you have positioned the decal, the best thing to do is to just let it sit until the Micro Set and water evaporate. However, you can use the corner of a paper towel to blot the liquid away, **8**. There are two risks with this: you could accidentally move the decal, meaning another application of Micro Set, or you could get towel fuzz or other debris on the decal.

Next, use a brush to add a stronger decal solution, such as Micro-Sol, **9**. Lightly touch the brush to the edges of the decal and let capillary action pull the fluid under the film.

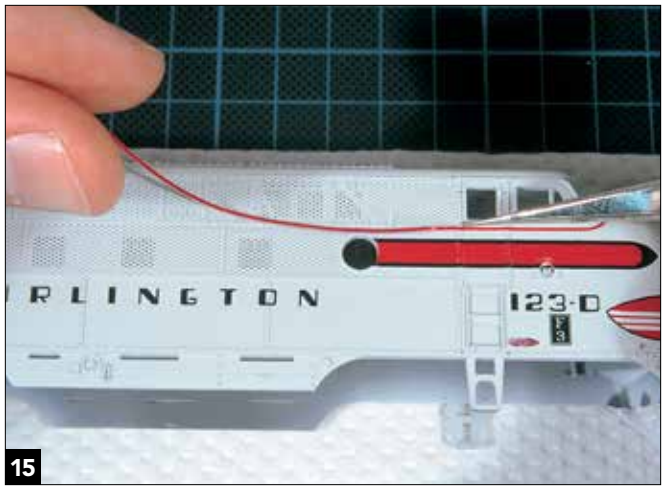
If you bump the decal out of place, try repositioning it quickly with the brush. If that doesn't work, use another brush to flood the area immediately with water. This will stop the action of the solution.

Once the setting solution is applied and the decal is in position, leave the decal alone. Once the strong solution has begun to work, attempting to move the decal will likely tear it. The



14

Spraying a light coat of clear finish on the model makes the film virtually disappear.



15

Start by sliding the decal stripe into the general area. Use plenty of Micro Set.

16

Use a brush to set the stripe into its final position. Sight down the model to check alignment.


17

The finished striping looks as if it's been painted on.

decal may appear to wrinkle, but this is normal. Move on to the next decal, and when they're all in place, set the model aside until it is dry.

Once a decal dries, there might be a few air bubbles or shiny areas where the decal didn't properly adhere to the model, **10**. Use a sharp knife to poke these areas, reapply the decal solution over the surface of the decal, **11**, and then allow it to dry. Repeat this process until no bubbles remain, **12**. When done properly, this process makes the letters and graphics appear painted on, even over surface irregularities such as rivets.

Since the decal has a different sheen compared to the paint, the decal film will still be visible, **13**. Applying a coat of clear finish to the model will solve this and complete the job, **14**. The clear finish seals the decals and, as the photos show, makes the decal film all but invisible.

If I have several models to clear-coat, I'll generally fire up my airbrush and use Model Master flat clear acrylic (no. 2015). If I have just one or two models, I'll use a spray can. My favorite spray finishes are Model Master Semi-Gloss Clear Lacquer (1959), Model Master Flat Clear Lacquer (1960), and Krylon clear matte. A very light coat is all that's needed.

Decal stripes

Narrow stripes are the toughest decals to apply. Stripes are the one type of decal where, if possible, you want to leave some clear film on either side of the stripe. The wider decals are more stable and easier to apply. However, if you're trying to place them atop details such as a batten strip on a diesel locomotive side, you'll have to trim them right to the edge of the stripe.

The example shows an HO Stewart F unit being decorated for the Chicago, Burlington & Quincy using a Microscale decal sheet, but the same techniques apply for most situations.

Dip the decal in water. Long stripes tend to curl when first placed in water. It's okay to let them do this, but don't let the decal float off the paper—it will become a tangled mess. Pull the decal from the water and hold it flat on a paper towel until it's ready to come off the backing paper.

Make sure that the entire application area on the model is liberally soaked with Micro Set, **15**. Slide the stripe from the backing paper onto the model,

10

When dry, the wash color highlights cracks and other recessed areas and is also pronounced around rivets and other raised details.

11

Washes can also be applied to smooth surfaces having details, as on this HO Athearn car. The wash color stands out around the vertical ribs and door details.


12

Some old cars have an overall grimy cast that makes it difficult to even read the lettering.


13

Apply weathering sprays in very light coats to build up effects gradually.

If you apply a wash and don't like its effect, you can usually remove it by immediately getting the model under warm running water and scrubbing it with a soft-bristled toothbrush. Do this before the wash has a chance to dry.

Washes can be built up in layers, so remember that you'll have more control over the final results if you apply two or three light coats instead of one heavy wash.

Once you're done weathering a model, give it a coat of clear finish.

Weathering oversprays

If you have an airbrush, thinned paint mixes are an excellent way to create many weathering effects. Mix paint in the same way as for a wash: one part paint to around eight parts thinner.

Among the most common—and effective—uses of a weathering spray are for locomotive exhaust stains (see chapter 9 for several examples) and for overall dust, grime, and grunge effects on locomotives, freight cars, and structures, **12**.

A double-action airbrush works best for weathering with thin mixes. To do this, dial the pressure to about 15 psi. Push the trigger to start the air flow, and gradually pull back the trigger until the mix just begins to flow, **13**. Don't apply too much at once. Back off and let the first coat dry (use a hairdryer to speed the process) before adding more. Keep building the effects in thin coats and take your time, **14**.

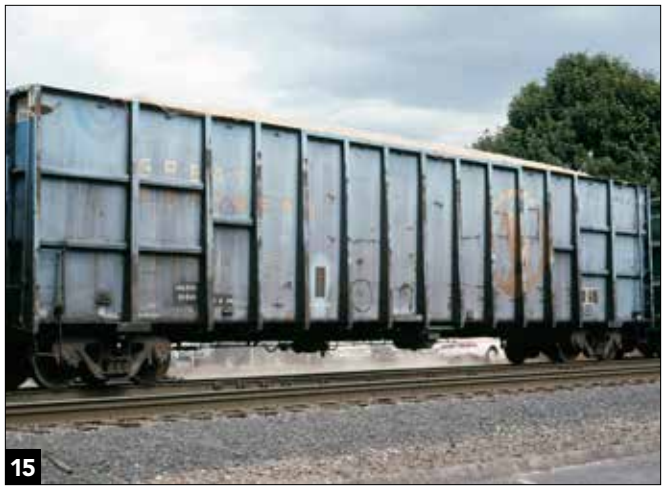
You can also use a single-action brush, but your control will be more limited. Set the air pressure and make sure the nozzle is closed. Aiming at a plain piece of cardstock, push the trigger and slowly open the nozzle until the mix begins to flow. Use short bursts on the model, again making sure you apply the mix in thin coats.

Thinned rust colors can be sprayed on trucks, couplers, and other rusted areas. Thinned earth-tone colors create dust effects on trucks, underframes, and the lower sides of locomotives and freight cars.

Another effective use of over-spraying is to fade lettering. To do this, airbrush a thinned mix of the freight car color over the lettering in thin coats until you achieve the desired effect.

You can also use oversprays to create the effect of faded paint as seen on the

A weathering spray of grimy black or mixed black and grimy black works well for creating an overall grungy look on a model.



When new in the late 1960s, this Great Northern wood chip car was a bright shade of Big Sky Blue. By 1994, it had faded considerably.

The faded paint effect on this N scale Great Northern wood chip car was created with a thinned white overspray. The car also received some rust-color drybrushing.

Many older freight cars, like this Cotton Belt boxcar, have numerous rust spots where paint and lettering have completely worn away.

prototype wood chip car in photo **15**. A thinned mix of white, antique white, or light gray, sprayed over the surface, will lighten paint and make it look as if it's faded, **16**. Once again, airbrush the mix in thin coats to build up the effect you're looking for.

Weathering sprays work well in conjunction with other weathering effects, such as drybrushing, washes, and chalks, and can be effective at blending multiple weathering effects together.

Oil paint weathering

You can use artist's oil colors (in tubes) to create many weathering effects. Oil paints dry slowly—a day or more, depending upon the thickness of application—which gives you a great deal of working time compared to conventional model paints.

Oil paints are especially effective at re-creating the rust patches and streaks often found on older freight cars like the Cotton Belt boxcar in photo **17**, and the rust-colored streaks that wash down the sides of cars from rust on the roof or door tracks, **18**. You can apply the paints with a brush, use them as washes, or combine the techniques to vary the effects.

You'll find five basic colors come in handy for oil paint weathering: burnt umber, burnt sienna, and raw umber for rust, along with Mars Black and titanium white (which can be mixed to make any shade of gray) for grime. Squeeze a bit of each color onto a piece of scrap plastic and mix a bit of each color together with a toothpick, **19**. This provides a good variety of colors.

Use a fine brush to paint patches of rust on the model, using burnt sienna and burnt umber for the darker areas, **20**. Raw umber works well for large streaks of lighter rust, or for areas where Mother Nature has washed rust colors over the paint and lettering. The thickness of the oil paint provides a bit of texture that makes rust effects more realistic.

You can add washes in two ways. First, take a wide, flat brush dampened with mineral spirits. Stroke the brush downward over the areas

33

This HO scale Proto 2000 0-6-0 switcher is a nicely detailed model, but it needs some weathering to tone down the dark black paint and metallic running gear.

Decal upgrades

With factory-painted models, always keep an eye out for ways to upgrade with decals. I had an older Kato HO GP35 painted for the Burlington Route. The paint scheme itself was nicely done, but the herald under the cab window was incorrect—the proportions of the lettering and border were off by quite a bit. It was an easy matter to cut a new herald from a Microscale decal set and apply it.

The Microscale decal at right was far more accurate than the factory-painted herald on the Kato shell.

Add the herald as you would any other decal.

I made another decal upgrade to an HO Proto 2000 E8 shell also painted for the Burlington. Many prototype passenger E locomotives had their multiple-unit (m.u.) cable sockets hidden under a hatch on the nose next to the headlight. Microscale set 87-527 includes outlines for these. Apply them as shown, and when the decal dries, the thin black lines look like the outline of the hatch doors.

Nose-hatch decals can be applied on either side of the headlight.

The finished decals look like the outline of the nose m.u. hatches. The model also received new number boards.

Give wood parts a coat of primer before painting the final color. This is common latex primer.

This HO interlocking tower from American Model Builders is painted white with boxcar red stairs.

Weathered wood, as on this HO trestle, ranges from light and dark gray to brown to black.

a hobby knife. Paint as many items as possible before you assemble the kit.

I like to give all wood parts a coat of latex primer, **12**. This helps keep wood grain or other imperfections from showing through, and makes it easier to get an even coat of the final color. Painting both sides with primer limits warping.

Once the primer is dry, paint the finish color with either an airbrush or paintbrush. It's best to apply several light coats. Don't apply the paint too heavily, or the wood pieces will tend to warp or bow. If this happens, add additional interior bracing during assembly. A completed American Model Builders interlocking tower is shown in photo **13**.

In many cases, you want to replicate the effect of weathered, unpainted wood, as on the trestle in photo **14**. Making a stain from thinned washes of acrylic paint work well for this. I prefer artist's tube acrylics mixed with water, **15**. Wood tends to weather toward gray, but it can have tinges of red and brown. Treated lumber (ties, trestle timber, utility poles) often starts out dark gray (sometimes almost black) and weathers toward brown, medium gray, and light gray.

To make a stain, put a dab of color in a recessed area of a small aluminum tray or palette, add water, and mix with a stir stick or large toothpick. Having