

REALISTIC WEATHERING  
FOR N SCALE MODEL RAILROADERS

# GETTING GRUNGED



TUTORIALS BY TOM MANN





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## WEATHERING OVERVIEW GETTING STARTED

To get started, you'll need to pick up the following equipment:

### BRUSHES

You'll want a wide variety of good quality brushes. The key here is good quality! I choose synthetic materials, as they seem to produce less brush strokes than natural materials. Pick up some flat tipped brushes in varying widths up to about 1/3 inch. You'll also want to get a small tipped firm brush for small texturing.

### PAINT

Again, the key here is good quality. I use the Liquitex Acrylic bottles that retail for about \$3.50 a color. You'll want the following colors: Burnt Sienna and Umber, Raw Sienna and Umber, Mars Black, and Titanium White. These colors will allow you to paint a wide variety of rust and dirt. Since acrylic is thick, you'll want to pick up the cheap blue windshield washer fluid as a thinner.

Dullcote and 91% alcohol are also good things to have. If you would like to replicate graffiti, gel pens work well.

A couple of things to call out from the Rich Yourstone article that are really, really important.

1. Think in layers. Paint in layers, and let the paint dry before moving onto the next layer! So, in other words, fade the paint, and then add dirt and rust.
2. Look at the prototype. I made a lot of assumptions about how a railcar weathers, but it wasn't until I actually listened to Rich and looked at photos that I noticed that real life was a little different. This was my turning point.



# WEATHERING A CNW BOXCAR



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Have all your supplies close by and handy: paints, brushes, windshield washer fluid, some paper towels, dullcote, and chalks.

## INTRODUCTION

To start, I think it's necessary to have a well-lit and comfortable work area. My place is a converted closet with a window, but the kitchen table will do fine. It does help to have a permanent location, as a weathering project could take days to complete. It's helpful to me to take my laptop into the work area and refer to the prototype photo as I weather.

Try to find a prototype photo of your model. This forces you to stay within the bounds of realism by copying something that exists in real life. It's not necessary to find the exact

same car – you'll go crazy doing so. Pick something that is close to your model in shape and color, and that matches the quantity of weathering that suits your time period or your tastes.

Today's tutorial model is an Atlas ACF Precision Design 50' boxcar. Although I found the exact car on the rr-fallenflags.org website, I'm going to base the weathering on the above 50' box car.

In this case, I replaced the trucks with MT rolling bearing medium shank trucks. I also replaced the wheels with MT lo-pros, as they look closer to the prototype.

You'll want to paint the trucks with Floquil's Rail Brown. This color is available in a rattle can. I place the parts on a small cutting board, place that on the window sill, open the

window, and spray! Also, run a silver sharpee on the outside rim of the wheel to create a polished look.

The PD boxcar is at or close to prototypical height, so we'll leave the bolsters alone.

## STEP 1

Onto the actual weathering. Look at the prototype photo and try to break the work down into layers. These layers can then be thought up as steps. In this case, I'll divide the work into a series of steps:

1. Washing the car with a dirty, dusty, wash mixed from white, black, and raw umber.
2. Following up with another, darker wash mixed from black and burnt sienna.
3. Drybrushing the rust on the door with black and burnt sienna.
4. Sealing the side with dullcote.





Photos clock-wise: Photo 1 upper left, Photo 2 close-up, Photo 3 overview, Photo 4 side face, Photo 5 bottom on angle.

5. Painting the graffiti with gelpens.
6. Sealing the graffiti with dullcote.

Make sure that the model is clean and fingerprint free, and give it a light coat of dullcote to create some tooth for the paint to stick to.

The roof of the model will be done during steps 1 and 2. If the logos and lettering were very faded, I would use an eraser to wear them down. In this case, I'm going to guess the washes will do the trick.

### STEP 2

Create a wash from white, black, and raw umber and your windshield washer fluid. I use a small cap to hold the fluid, a lid to do the mixing, and a paper towel to remove excess paint from the brush. This color should resemble a dirty white or dust color. [Photo 1]

Paint one side and one end. Why? I like to break up weathering into a multi-day or week process to allow time for my skills to improve and allow my eyes to rest. Use your fingers or a paper towel or anything that works to get a nice even look with no blotches. This is easier said than done, but if you keep the wash really wet, it's

doable. **Let the model dry for a while.** [Photo 2]

### STEP 3

Wash your brushes out and change your washer fluid. Using raw sienna, paint some streaks on the roof. This color looks like fresh rust, and it'll be the base coat for the roof. [Photo 3]

### STEP 4

Mix a darker wash of raw umber/black and burnt sienna for the side and one end. Make sure the earlier white dust wash is dry! Refer to the prototype photo! You should notice that you won't cover the dust, and you'll get a nice layered effect.

Once you're happy with the side and end, you can also use these colors to add another layer to the roof. You'll probably have to alternate between a new rust color (raw sienna) with older rust (burnt sienna), letting each shade dry a little so that they don't mix together.

At this point, take your digital camera and take a good close up shot to detect any issues [Photo 5]. They can be fixed at this point. (Step 5, bottom of page 4)



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## QUICK TRICK RUSTY METAL WHEELS



For this quick project, NWSL 33" 50 tread wheels were used. The track has a light coating of PolyScale "earth".

- Rusty metal primer for the wheel. Don't clean the wheel before painting (the metal shavings are cool).
- 2 parts rust/1 part grimy black for the truck. (A Rich Yourstone formula) Paint the truck separately from the wheel.
- Put the wheel in the truck and lightly spray it with the rust/grimyblack mixture.
- Use all the paints straight, to get the slight texture.

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### STEP 5

Seal the model with dullcote. The washes are very thin layers of paint and can come off easily.

It's now time to paint the rust on the door and the little rust marks on the right side of the car. I use a cheap stiff bristled brush and burnt sienna/black straight from the bottle. It also works if you mix in a little brown colored chalk, to create more texture.

The HO and larger guys use a bunch of tricks to create rust texture, but that I found out that these do not scale down too well.

### STEP 6

I use gel pens for the graffiti and freehand what I see on the prototype. I seal this with dullcote, and fade it with a wash of a brownish-gray color to tone it down.

The whole process took me about 4 hours. I'll probably spend another hour on touch ups based on your feedback, and then do the other side in a week or two.





# BOXCAR WITH HEAVY RUSTED DOOR



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My MILW car received a lot of nice feedback so I thought completing the car would make a nice tutorial.

## INTRODUCTION

Like I recommended last time, weather one side of a car at a time. This way, you can give yourself some time to improve. For a photo of the completed side, see photo on next page.

My goal for today is to be a tad more subtle, improve the blotchy white paint, and use decals for the graffiti.

Creating these tutorials is helpful to me, as they force me to take a break at each step in the process. It's also helpful to explain what is involved – to hear what I'm doing in my own words. I also want to share the knowledge, as Rich Yourstone did for

my behalf. By doing this, I hope your techniques get better, and you feel comfortable to in turn, share your own work.

## STEP 1

Don't forget refer to the prototype photograph. I made the two evil faces directly from the prototype photo. I printed on the clear laser paper available at <http://www.decalpaper.com>. In a state of excitement, I placed the left face one

panel to the left. I didn't notice this until I was finished! As I say all the time, refer to the prototype photo!

## STEP 2

Scrape a little white Rembrandt Chalk to make a powder. Apply this with a clean brush that you reserve for this step in the future. What are we doing? We are trying to replicate the fading process that the prototype goes through. If you don't tone down the stock paint, additional







Photos clock-wise: Photo 1 top left, Photo 2 overview, Photo 3 door rust detail, Photo 4 removing brush strokes, Photo 5 bottom on angle.

weathering will not blend in well. Using chalk is much nicer than the paint I used in the previous tutorial. This is my preferred method now. [Photo 3]

Try to replicate what you see on the prototype.

Although the Rembrandt brand has a bit of an adhesive quality to it, it's necessary to seal it with Dullcote. Unfortunately, the Dullcote causes some of the chalk to disappear, requiring two or three applications.

Wait for the Dullcote to dry before moving onto the next step.

### STEP 3

Let's tone down the chalk layer with a wash of burnt sienna and raw sienna. Your wash should be mostly the windshield washer fluid (we covered this in the last tutorial) – a very wet wash. Use a good quality brush and brush straight down. In another thread, Rich recommends letting this dry for a few minutes and returning with a damp brush to remove any sign of brush strokes. [Photo 4]

This wash creates a second layer, but still shows the chalk underneath, giving a nice sense of depth.

I used a darker wash (more burnt sienna) around the doors to trick the eye into thinking there was more depth. [Photo 5]

### STEP 4

This step is the hardest to write, because it isn't as mechanical or as general as the previous steps. I'll just jot down what I did.

Once the wash in step three dried, I went over the model with a fine brush and tried to replicate the weathering with a variety of colors: black, raw umber (dirt like color), burnt sienna (rust color), and raw sienna (new rust color). [Photo 6]

Starting from the left, the rusty runs by the face are made by using a fine bush and dry brushing on some paint, and then wetting the brush and pulling it straight down. The brush bristles will create the different colored streaks. [Photo 7, next page]

The rust at the bottom of the door is painted on with a stiff bristled brush. I mixed more black into a raw umber / burnt sienna mix. I also added a little brown chalk to get more texture, but this probably isn't too noticeable. (Step 5, bottom of page 7)



# QUICK TRICK ADD WEIGHT TO CARS

If you're willing to invest the time to make memorable, realistic models, don't pass on the chance to make sure they'll actually run. A primary reason I chose N Scale was the allure of long unit trains. During a recent exhibit, I fielded questions from model railroaders curious to know how my lengthy trains actually stayed on track. My answer – weight is a big deal. Ever had problems keeping your trains on the rails?

One guarantee is many ready to run cars are too light out of the box. The National Model Railroad Association recommends weight [See Chart] to help get you close to an ideal running weight.

With a small ounce scale, you'll get accurate results. For weight I'm using buckshot, but pennies or anything small and heavy will do the trick. Keep in mind, too much isn't good either. The formula is intended to give you optimal results.

Make sure the weight is secured in or under the floor. That way you'll have a lower center of gravity. Attaching the weight to the inside roof may seem

easy, but things are still not "grounded." Get low with the added weight and you'll love the way cars fight back against not so perfect track.

Once you've added some heft, consider tackling other elements that will increase your pleasure when you're running trains. With an NMRA gauge, you can check to make sure wheels and track are in gauge. Some time in the car repair shop will surely equate into hours of fun running the rails.

Start with the initial weight for your scale. Then multiply the car's length in inches by the extra weight shown in the chart. Add the initial and additional weight together.

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## IDEAL CAR WEIGHT

Scale	Initial	Extra
N	.50	.15
HOn3	.75	.37
HO	1.00	.50
Sn3	1.00	.50
S	2.00	.50
On3	1.50	.75
O	5.00	1.00

Weight in ounces

### STEP 5

Brush on a little more white chalk to tone down the black lettering. My example looks too white in these photos due to the strong indoor lighting. [Photo 8]

I'll set it aside and return to it this weekend to fix what's not popping out at me tonight. I'll also take a photo with natural sunlight. To see a larger version of the final photo, see page 12.





# RANDOM SURFACE RUST



I discovered this technique by accident. I'll call it the **Dirty Puddle method**.

To give you some background, I have a small Powerade cap that I use as a cup to hold the windshield washer fluid, which I use as paint thinner. As I dip paint-covered brushes into it, the fluid takes on a color. The next day, the fluid evaporates and at the bottom of the cap, the paint settles and dries in a speckled pattern. If I don't clean the cap, and repeat the above process with another color, I can get a nice layered peeling paint/rust effect. Let's translate this to a model.

For the Cotton Belt Dash-8, I needed to depict the faded paint first, since faded paint will happen before surface rust in, well, probably every

case! Incidentally, this step is often left out, and it results in models that look like the rust colored paint is applied over the factory finish. Not too realistic, as it doesn't happen that way in real life. Still, this is something everyone does when they



start out – no worries. If this is your approach right now, keep this idea in the back of your mind for next time. [Photo in previous column]

## STEP 1

I started with a mixture of white, black, and raw umber. I add in a tad raw umber because I think it makes a grey look less silvery. I then dip a small brush of this grayish color into the washer fluid. Note that at this point, the mixture is mostly fluid and very, very little paint. "Paint" a surface with this mixture, using enough so that it puddles up. Feather the edges with another, dry brush, or otherwise paint will settle around the edges and result in a ring around the puddle. Since I work under a 100W lamp, the fluid evaporates pretty quickly, and a nice flaky, random, slightly textured



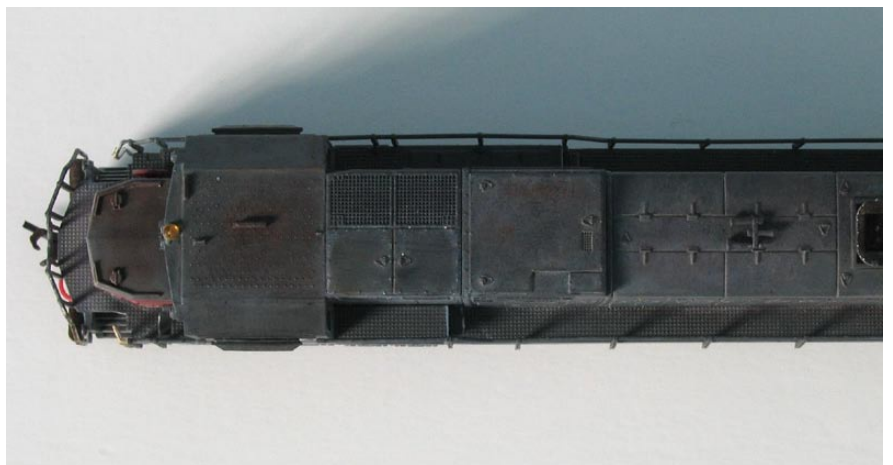
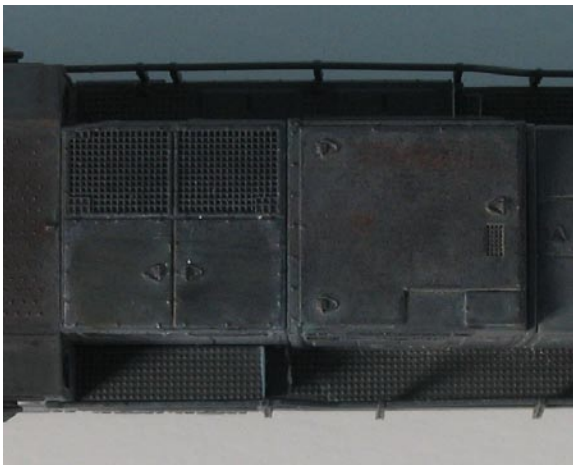
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## QUICK TRICK FOCUS ON BOXCAR RUST



Play attention to the details! This spot is the most interesting location on boxcars. A lot of water collects on the sill (creating rust), the door scrapes the ribs, and dirt and grime collect here. I spend a lot of time on this area when I weather a boxcar.

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surface appears. I'll follow this up with layers of burnt sienna, raw sienna, and maybe black. Make sure each layer dries before moving on to the next. No protectant sealant is necessary, but work gently. Let the puddle work for you! In so many cases, I've noticed that a natural process gets better results. This "Dirty Puddle" method mimics the real life process of standing water wearing down paint. [Photos above]

For extra effect – but use this sparingly – sprinkle a little rust colored powder on an area that is still wet to get more of a 3-D texture. The bottom left of this door shows this approach. [Boxcar to right]





# AMBITIOUS UP JOB



I started with the stock MT car and spent an evening lowering it. After doing quite a few of these, I'm getting faster and more accurate.

My favored technique now is to remove the trucks, stirrups, and plastic underframe detail and hand file the bolsters to get them a little flat. Then, I place the underframe on the file and file until I just reach the height of the ribs that are part of the underframe detail.

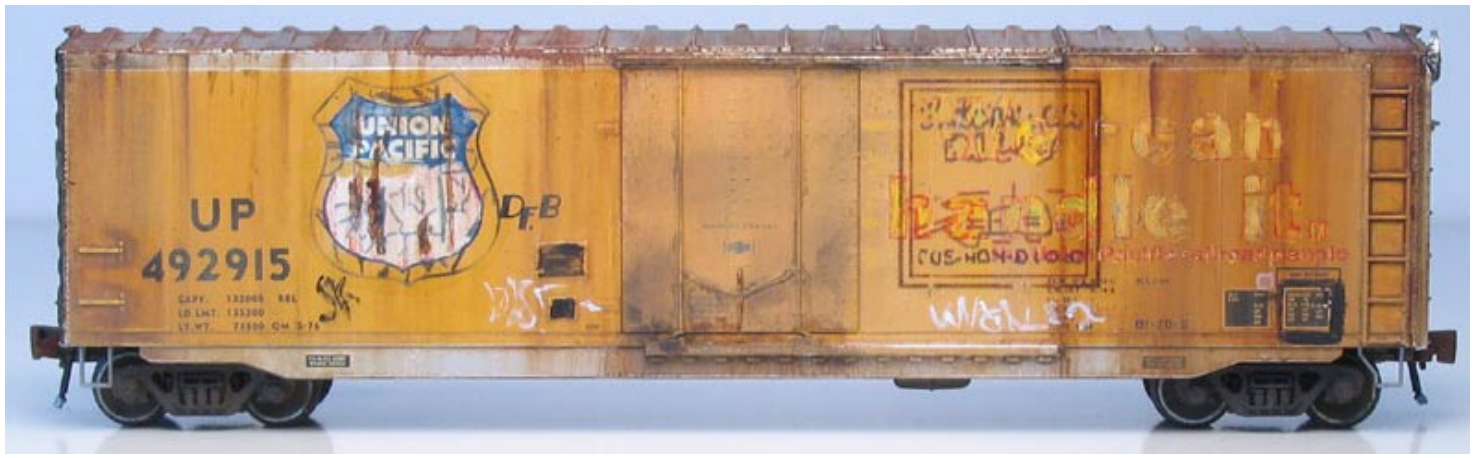
To help the low profile wheels clear the underframe, I use a large metal drill bit to dish out the area for the "inner" wheelset. The "outer" wheelsets require no drilling,

because the underframe steps up a little. The plastic underframe detail part has to be trimmed, as it will no longer fit under the inner axles.

Using z scale couplers mean that no cutting of the plastic body is necessary. The Z Scale couplers perform well and hold up in long







trains just fine. Of course, your results may vary.

Weathering is mostly acrylic, with a little bit of chalk mixed in to tone everything down. The streaks are made from wet-brushing with an uneven amount of paint on a large 1/2" brush. Another example of a "natural" process looking better than if I would try to hand paint each one with a very fine brush.

I applied the decals after weathering, which made positioning them very difficult. I think I went through 2 for each side.



I'm pretty happy with the roof. I started with a base coat of acrylic, and added AIM weathering powders to create the dirty-rusty effect. [Above photos show the before and after of the boxcar.]

# GALLERY



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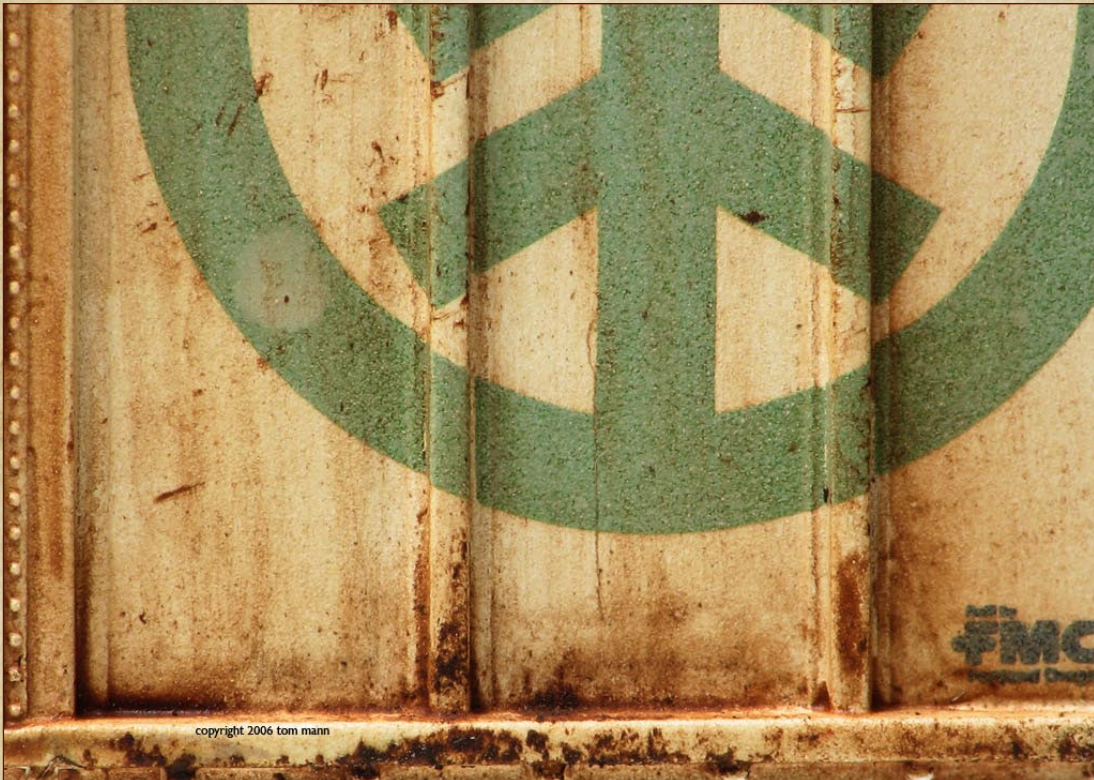


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Find more of Tom's work online. He shares photos of his work on the <http://therailwire.net/> weathering forum.

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