

Contents

1	Weathering with artist's pastels.	<i>Tony Koester</i>	4
2	Patching freight cars with paint pens	<i>James McNab</i>	8
3	Upgrading a Burlington boxcar	<i>Jeff Wilson</i>	11
4	Kitbashing a Monon 50-foot PS-1 boxcar	<i>Mont Switzer</i>	15
5	Undecorating a "cheese" boxcar.	<i>Cody Grivno</i>	20
6	Modeling a C&NW ex-Rock Island boxcar	<i>Jeff Wilson</i>	24
7	Replicating a Soo Line 40-foot boxcar (N scale) . . .	<i>Keith Kohlmann</i>	28
8	Making realistic wood grain doors	<i>Jeff Wilson</i>	32
9	Finishing a BN leased boxcar.	<i>Cody Grivno</i>	36
10	Weathering a war-emergency hopper.	<i>Jeff Wilson</i>	40
11	Decorating an ACF covered hopper	<i>Cody Grivno</i>	44
12	Upgrading a basic covered hopper	<i>Cody Grivno</i>	48
13	Modeling an ex-CRR aggregate hopper	<i>Cody Grivno</i>	53
14	Building a PM auto frame gondola (N scale).	<i>Keith Kohlmann</i>	57
15	Updating a former Railgon gondola	<i>Jeff Wilson</i>	62
16	Building a 3D printed PRR gondola (N scale)	<i>Keith Kohlmann</i>	65
17	Adding a pipe load to a mill gondola	<i>Jeff Wilson</i>	69
18	Converting a BN flatcar to a gondola	<i>Cody Grivno</i>	72
19	Building a realistic deck for a NP flatcar	<i>Mont Switzer</i>	77
20	Making lumber loads for a bulkhead flatcar	<i>Jeff Wilson</i>	81
21	Adding a grader load to an ITC flatcar	<i>Mont Switzer</i>	85
22	Modernizing a Sioux City wood reefer	<i>Jeff Wilson</i>	89
23	Upgrading a Wilson meat reefer	<i>Jeff Wilson</i>	92
24	Modeling GN ore cars in gravel service	<i>Cody Grivno</i>	96
25	Placing sheep and cattle in stock cars.	<i>Jeff Wilson</i>	101

Undecorating a "cheese" boxcar

By Cody Grivno



Whichever way you slice it, Wisconsin & Southern no. 503194 is an interesting boxcar to model.

Throughout my life as a model railroader and railfan, I've crossed paths with certain pieces of equipment time and time again, and some have eventually become models for my future HO layout, **1**. As a child, it was a Burlington Northern locomotive that had a road number that matched the last four digits of our home telephone number.

Fast forward 30 years, and now Wisconsin & Southern 52-foot, double-plug-door boxcar no. 503194, painted for the cheese manufacturer Sargento, has become a frequent

subject in my camera's viewfinder, **2**. I was invited to the boxcar's unveiling ceremony (complete with a champagne christening) on November 25, 2008, in Horicon, Wis. A few weeks later, I caught up with the car in Plymouth, Wis., where it delivered its first load (Christmas trees!) during the town's Christmas festival.

Sadly, in early 2009, the car had to be stripped of its SARGENTO lettering, and the logo touting Plymouth as the World's Cheese Capitol had to be covered. Why? Because of the 1930s ruling by the Interstate Commerce

Commission that prohibited cars with advertising from interchange. But even in its patched appearance, WSOR no. 503194 proved too interesting of a modeling subject to ignore. With an Athearn HO scale boxcar in hand, I set out to re-create this one-of-a-kind car.

Removing the lettering

The first step was to remove the white SARGENTO lettering and the black OUR FAMILY'S PASSION IS CHEESE slogan. For reasons unknown to me, Microscale Micro Sol removes factory applied lettering on Athearn cars without damaging the paint. (I've tried this method on cars from other manufacturers with mixed results.) The Micro Sol works best on black and other dark colors, but it will also work on white or brightly colored graphics.

To start, I brushed Micro Sol over the slogan (but not the underline), 3. I let the setting solution sit for several minutes until it had almost, but not completely, evaporated.

With the area still slightly damp, yet dry enough for tape to stick, I applied Scotch Magic tape over the slogan. Then I burnished the tape with a toothpick, 4.

I slowly pulled the tape back and away from the model to remove the lettering. Not all of the lettering lifted off on the first try, so I repeated these steps until the slogan was removed, 5.

Next, I shifted my attention to the white SARGENTO lettering, which proved to be much more stubborn. I tried removing the lettering using



On the day of its unveiling in November 2008, Wisconsin & Southern no. 503194 features lettering for Sargento Cheese.

Micro Sol and tape with limited success. Then I used a round-head toothpick to gently scrape off the lettering, 6. This technique may remove some of the black paint underneath the lettering, but you can use a Microbrush and Model Master engine black (no. 4888) to touch up any damaged paint.

A shiny surface

With the SARGENTO lettering and slogan removed, I wiped the model with 70 percent isopropyl alcohol, followed by distilled water, to clean off any impurities that might affect paint adhesion.

I then sprayed the boxcar with Model Master gloss clear (no. 4638). This provides a glossy surface for the decals to adhere to. If you skip this

step, the decals may “silver,” or fog, under and around the graphics.

Two sides, two looks

I let the gloss clear dry thoroughly (until there was no discernible paint odor). I modeled the right side of the car as it looked shortly after the lettering and slogan were removed. I cut a 4⁷/₆₄" x 3⁸/₈" piece of Microscale black trim film (TF-2) to cover the Plymouth logo. Like the prototype, the upper left corner of the patch on this side of the car is a bit wavy, 7. The patch on the left side of the car lacks this feature.

Over time, the full-size car became the target of taggers, a look I re-created on the left side, 8. I applied graffiti from Microscale sets 87-1139, 87-1320,

Materials

3M

Scotch Magic tape

Athearn

91286, Wisconsin & Southern
50-foot, double-plug-door boxcar
no. 503194

InterMountain

33" metal wheelsets

Microscale

MC-5004, Clean, Oil, Test & Stencil
triple panels

TF-2, Black trim film

87-1139, Urban graffiti

87-1320, Graffiti sheet vol. 3

87-1322, Graffiti sheet vol. 2

87-1377, Burlington Northern

40- and 50-foot boxcar markings
(capacity data)

87-1460, Archer Daniels Midland

Trinity tank cars (for road number)

104, Micro Set

105, Micro Sol

Graffiti

Model Master acrylic paint

4637, Semi-Gloss Clear

4638, Gloss Clear

4675, Rust

4885, Railroad Tie Brown

4887, Grimy Black

4888, Engine Black

Miscellaneous

Round-head toothpicks

Making realistic wood grain doors

By Jeff Wilson



1 The fall grain rush means lots of traffic for rural elevators. In this HO scene, a string of boxcars with grain doors in place are ready to be loaded at a small-town grain elevator.

Through the 1960s, the most common method of carrying bulk grain was in 40-foot boxcars. Temporary doors—called grain doors—were nailed across the inside of each door opening, **1** and **2**. The elevator’s loading spout was then placed over the grain doors and the car was loaded with grain. Although the process was labor intensive, boxcars were versatile cars that could be used for carrying many other goods. It wasn’t until railroads were allowed to offer special rates for jumbo covered hoppers (beginning in the 1960s) that

boxcars began to give way to covered hoppers for grain shipments.

Prototype grain doors

There were two types of grain doors: wood and reinforced cardboard or paper. Wood doors were the only option into the 1950s, **3**, when single-use paper and reinforced cardboard doors began to appear. Paper doors gradually increased in popularity, and both types were used from that period through the end of boxcar grain service in the 1970s.

From the 1930s onward, wood doors were made to standard designs. Most

were made from two layers of three side-by-side planks, with overall dimensions about 20" wide and 7 or 8 feet long, with a vertical piece on each side, 4. Several grain doors would be nailed in place to the inner door posts, starting at the bottom, to the height needed for the load.

Wood doors were reusable—they would be collected at the boxcars' final destinations and shipped back to their owners. More accurately, they were shipped back to owning railroads in proportion to their use, meaning—like freight cars themselves—doors from other railroads could appear on any given railroad. To track grain doors, railroads labeled them by stenciling or stamping them with their initials, 3, and sometimes with additional lettering, such as RETURN TO. As they aged, the wood doors would become weathered and the lettering would fade.

Modeling

Once cars were loaded, the boxcars' sliding doors were closed over the grain doors. This means that cars weren't often seen in transit with the grain doors showing, although this sometimes occurred with empty cars returning home (both sliding doors may be open, with only one side of grain doors having been removed for unloading). So if you're modeling grain doors, you're usually limited to scenes at grain elevators, inspection points, and other loading or unloading locations.

There are a few ways of modeling wood doors. You can simply glue weathered stripwood across the door openings, or you can use commercial products such as the laser-cut wood doors made by Modeler's Choice.

However, I wanted to capture more detail, specifically the stenciling found on prototype grain doors. After much experimentation, I found a relatively easy and quick method of making my own by using computer graphics and printing them out on photo paper.

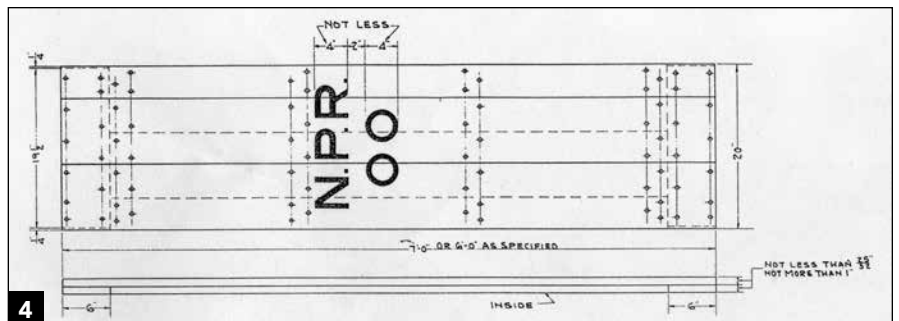
In trying to figure out how to get the graphics onto the wood doors (decals, transfers, etc.), it finally occurred to me that I could just turn the doors into graphics as well. So I began by taking pieces of HO scale 4x10s and staining them to look like



2 The printed grain doors are quite realistic, showing wood grain and weathering as well as stencils that indicate ownership. The boxcar is from InterMountain.



3 Workers load a boxcar with a conveyor in the 1940s. The wood grain doors are stenciled RETURN TO AT&SF. Jeff Wilson collection



4 This Northern Pacific drawing shows how wood grain doors are assembled, with two layers of planks. Northern Pacific



6 I centered the jig for the crossover platform on the draft-gear box and used a pin vise with a no. 78 bit to make holes for the new part. I repeated this process on the B end of the car.



7 To avoid having to repaint the car, I used Microscale Micro Sol to remove unwanted graphics. I wet-sanded areas where the black printing left residue on the white and red paint with 600-grit and 1,500-grit sandpaper.



8 The roping holes were originally printed on the model. I used jack pad faces from a Plano kit to upgrade these areas.



9 Microscale decal sets MC-5004 and 87-1276 provided the new COTS panel and Thrall builder's stencil, respectively.

After the decals were in place, I used a cotton swab dipped in distilled water to remove decal glue and residue from the decal-setting solution. Then I sprayed the panels containing the decals with a thin coat of gloss clear to seal the decals and prevent the weathering colors from forming halos around the clear decal film.

Next, using blue painter's tape, I masked the area where the new reporting marks would be added. I then sprayed the entire model with thinned railroad tie brown and grimy black (9 parts 70 percent isopropyl alcohol to 1 part paint). I followed that with thinned engine black (same ratio) along the exterior posts. I built up the weathering in several light layers, as it's much easier to add more weathering than it is to remove some.

With the weathering applied and the masking tape still on the car, I dipped a cotton swab in Windex to do some reverse weathering. Using prototype photos as a guide, I carefully wiped some of the paint off the faces of the exterior posts, **10**. Then, keeping the swab parallel with the posts, I gently wiped paint off the body panels to re-create the look of uneven grime on these areas.

I finished this phase of the project by spraying the model with gloss clear. This not only protects the weathering, but it readies the model for the next round of decaling.

Post-weathering work

I let the gloss clear dry thoroughly (exhibiting no discernible paint odor) before proceeding. While examining

prototype photos, I noticed three of the four hatch covers had been replaced. I captured that look by brush-painting the same number of hatch covers with Polly Scale new gravel gray. To further enhance the roof, I painted the batten bars and hinges grimy black, **11**.

I lettered the car with decals from a set designed for center-beam bulkhead flatcars. The lettering is a bit smaller, but I was willing to compromise on that front because the font closely followed that the one on the prototype, **12**.

Though I had applied a general weathering coat to the slope sheets, I also wanted to add the vertical streaks of grime kicked up from the spinning car wheels. Instead of doing this with an airbrush, I used Moon Dog Rail Cars wheel spray and flange sling decals, **13**. This decal set contains



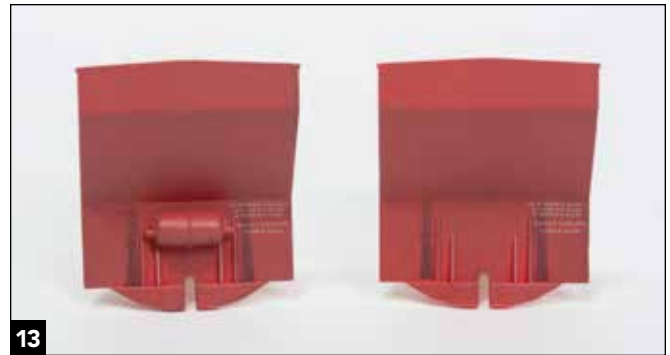
10 A cotton swab dipped in Windex is handy when doing some reverse weathering. Here, I am wiping paint off the faces of the exterior posts. I also used this technique to remove some of the weathering from the body panels (with the masking tape on, of course).



11 To better match the prototype, I brush-painted three of the four hatch covers with Polly Scale new gravel gray. I made the batten bars and hinges stand out by painting them grimy black.



12 A decal set for center-beam bulkhead flatcars contains NOKL reporting marks and road numbers in a font that is similar (but smaller) than the one used on the full-sized covered hopper.



13 Decals aren't just for lettering. I added the vertical streaks of grime kicked up from spinning car wheels using decals from Moon Dog Rail Cars.

streaks in various shades and patterns, appropriate for use on car ends on hopper bays. I applied Microscale liquid decal film to the set prior to application to protect the printing.

Unfortunately, the car suffered a bit of damage during the decaling process when one of the stirrup steps snapped off, **14**. I replaced it using a stirrup from A-Line set no. 29000, a no. 73 bit, and a pin vise. I brush-painted the brass part with Model Master Rot RLM 23.

With the decaling completed, I once again cleaned the model with distilled water. Then I sprayed the model with Model Master flat clear to seal the decals and hide their edges, as well as give the model a uniform dull finish.

Finishing touches

With the car weathered and decaled, it was time to address the running board assembly. As done before, I

gently sanded the stainless steel to promote glue and paint adhesion. I also masked the gluing faces on the bottom. Then I applied light coats of caboose red, railroad tie brown, and grimy black. I sealed the weathering with flat clear and removed the masking tape.

I sanded the paint off the running board supports so the gluing faces would be clean. Then I used a toothpick to apply E6000 glue. This glue works well for securing metal parts to plastic models, but apply it sparingly. The running boards are perforated, so excess glue will ooze out of the holes.

I wasn't happy with the airbrushed weathering on the running board assembly, so I randomly drybrushed panels with Lifecolor UA 701 rust dark shadow to capture the look of rusty, galvanized steel. In addition, I brush-painted one panel camouflage gray to suggest it had been replaced, **15**. I also used this color to paint the corner grab

irons, which I secured with cyanoacrylate adhesive (CA).

To give the crossover platforms the look of newer galvanized steel, I only weathered them with flat clear. Then I secured the parts with CA.

The trucks are molded in a shiny black plastic, which would look out of place on a weathered model. I replaced the metal wheelsets with plastic ones to mask the sockets and sprayed the trucks grimy black. Then I brush-painted the bearing caps railroad tie brown.

I cleaned the blackened metal wheelsets with 70 percent isopropyl alcohol to remove any residue from the manufacturing process. Then I painted them blackened umber using a Microbrush. I didn't paint the face of the tread to indicate that the car had recently passed through retarders in a hump yard, **16**.

Finally, I weathered the couplers using a three-step process. First, I



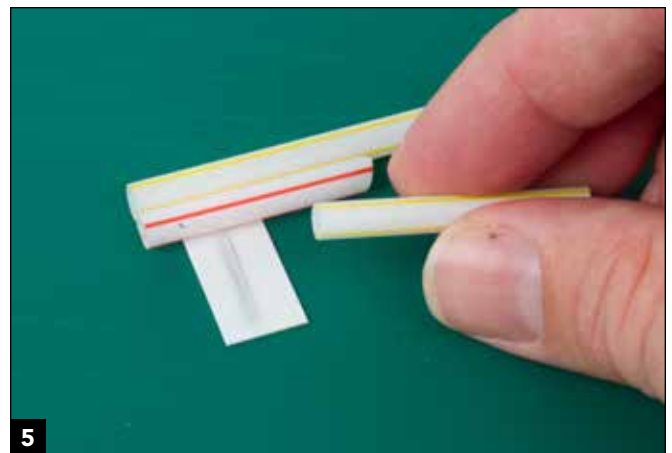
2 The pipe load in this Baltimore & Ohio mill gondola is stacked, held together with bands, and kept in place in the car by vertical posts. *Trains magazine collection*



3 Weather the car with washes of rust-colored artist's oil paints, brushing them downward along each side panel.



4 Oil paint washes also work well on the interior sides and floor.



5 Glue the first layer of straws to a styrene base using E-6000 adhesive. I recommend a long styrene base instead of the short ones I initially used.

(dark rust). To do this, squeeze a bit of each color (it doesn't take much) on a plain card or aluminum artist's palette. Then dip a wide brush in turpentine, touch it to one or more of the colors, and stroke the brush down the car side.

The turpentine/oil wash takes longer to dry than acrylics do, giving you plenty of working time to get the effects the way you want. If a wash appears too dark, use a clean brush of turpentine to thin it and redo the effect.

A variation of this step is to paint rust patches on the surface with oil colors. Let them dry and then wash a brush of turpentine across it and down the car side a couple of times. This results in a rust streak that is heavy directly below the rust patch and lighter down the side.

I did the same thing to the car interior, using various rust colors on both

the interior sides and floor, **4**. I also gave the trucks a rust wash and painted the wheel faces dark brown with black highlights.

Let the car dry a day or two and then seal the effects with a coat of clear flat or semigloss. You can then add additional weathering (more washes, chalk, or any other effect) if you wish. Seal each layer of weathering with a clear coat.

Pipe load

Disposable plastic straws of various sizes can be used to represent pipe loads. The first step is to cut the straws to length. I used scissors to cut mine a scale 50 feet long, which seemed appropriate, and ensured that they'd fit in the car's 52-foot-long interior.

If you have enough of them, you can simply build the entire stack with

whole straws. I didn't have enough straws on hand (and I didn't want to run to a store just to try and find matching straws), so I cheated by using some short lengths on each end, making the stack hollow in the middle.

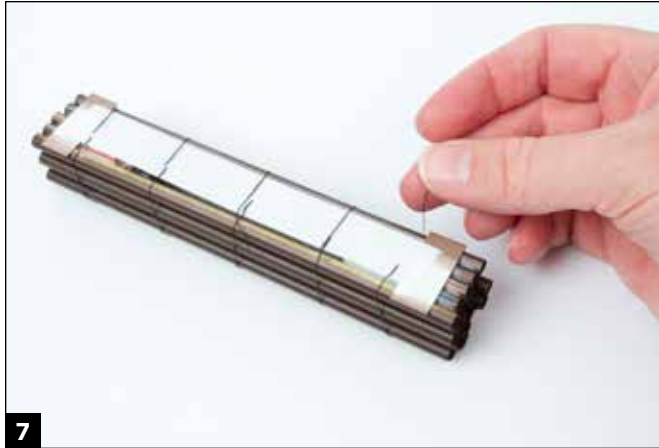
Figure out how wide the load can be—this will vary based on your straws and the model that you're using. The inside width of this car is a scale 9 feet, and I needed to allow room for 4 x 4 wood stakes along each side. Five straws side-by-side worked out almost perfectly for the straws I had, so I decided to make my load a series of alternating layers of five straws with four straws.

To keep the bottom layer flat, I glued each end of a straw to a small piece of styrene slightly narrower than the load. I would instead recommend using a long piece of styrene as a base



6

This stack is complete and ready for painting. You'd never know the stack is hollow from the outside.



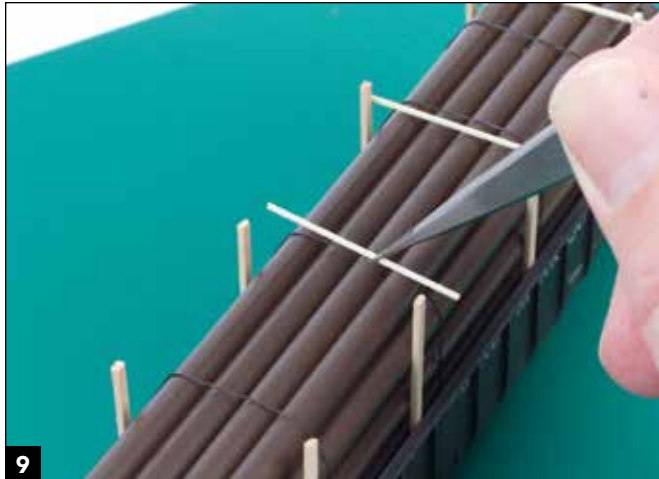
7

Glue the EZ Line strapping around the load, making sure the spacing is relatively even.



8

Add the vertical 4x4 posts, either inside the gondola as shown or by gluing them directly to the load.



9

Glue lengths of scale 2x3 stripwood across the posts above the load.

(you can see I added one later)—it makes gluing and aligning the straws and straps easier.

Glue the straws to the styrene base and to each other with E-6000 adhesive, 5. This is a clear, flexible, strong adhesive that works well for slippery plastic surfaces like these. Build up the layers of straws, being careful to keep the adhesive on the inside and bottom surfaces of the straws so the adhesive isn't visible. Test-fit the load in the car after the first layer is in place to make sure it fits properly and then again when the stack is complete, 6.

Paint the finished stack of straws with an airbrush or spray can. I used an airbrush and Modelflex roof brown, but pipes come in many colors, so feel free to improvise or follow a prototype car.

Prototype stacks are secured by several straps surrounding the load. I

used five pieces of Berkshire Junction EZ Line, an elastic thread. Use super glue to fix one end of each thread to the styrene base, spacing them evenly along the load. Pull each line around the load, keeping it aligned, and glue the free end in place, 7.

You can make the load removable by gluing the 4x4 posts to the load itself (be very sparing with adhesive, and keep the glue below the level of the top of the sides if possible). I simply glued the posts to the inside of the gondola with cyanoacrylate adhesive (CA), keeping the spacing even on both sides, and then set the load in place, 8. In photo 2, you can see that the posts in the prototype car have shifted quite a bit, but my posts are vertical.

The vertical posts are typically tied together over the top of the load either

with cable (as in the prototype photo) or with boards. I used CA to glue cross pieces of scale 2x3 stripwood to the posts (two for each pair of posts, one on each side), 9. You can use EZ Line to simulate wire if you desire.

Materials

Proto 2000 (Walthers)
54120, Mill gondola, Pere Marquette

Midwest Products stripwood
8001, HO 2x3
8016, HO 4x4

Miscellaneous
Soda straws
Berkshire Junction EZ Line (black)

Adding a grader load to an ITC flatcar

By Mont Switzer



1

An Illinois Terminal flatcar with a Caterpillar grader rests at the Monon/Pennsy interchange on my HO layout. The Norscot model makes a perfect load for the Proto 2000 flatcar.

Illinois Terminal Co. (ITC) was located amid various manufacturers of tractors, road-building, and other heavy equipment, including the Caterpillar Tractor Co., which built the no. 12 Diesel Motor Grader. I purchased a Norscot model of the no. 12, giving me the opportunity to load an ITC flatcar with a very visible load that could be routed over the section of the late-1950s Monon Railroad that I model, **1**.

The flatcar

I had a Proto 2000 (now Walthers) 50-ton, 53'-6" flatcar in my stash of

unbuilt kits. The model is lettered for ITC 1109, one of 50 cars of this design purchased by the ITC. Likely to show up in Peoria in the late 1950s, this car was perfect for transporting the grader.

I began roughing up the car's deck molding with 80-grit sandpaper mounted to a homemade sanding block, **2**. After a thorough cleaning, I dry-brushed the deck molding with grimy black paint. Once it thoroughly dried, I lightly sanded the deck with 120-grit sandpaper to gain the effect I wanted. If you take off too much material, add



2 Carefully remove the molded-on ladder detail with a chisel-tip hobby knife. Work slowly—don't try to remove all the material in one pass—and keep the blade at a low angle to the surface.



3 A Micro-Mark detail-removal chisel also works well for cutting off molded-on parts. Its design makes it less likely to gouge the surface than a knife blade.



4 Use a scribe to continue the car's vertical board grooves through the areas where the molded-on details were located. A straightedge guides the scribe.



5 Cut down the new ladders to size and airbrush them yellow before gluing them in place on the car sides.

I decided to remove the molded-on side ladders, end ladders, and grab irons and replace them with separate pieces. This is, of course, optional—you may find the updated appearance worth it, or decide that the effort is too tedious and simply isn't worth the time.

Start by using a chisel-tip knife blade or Micro-Mark detail chisel to



6 A new ladder and grab irons have been applied to the end. I painted the exposed part of the side yellow to match the prototype.

shave off the molded-on details, **2** and **3**. The key is to keep the blade flat to the surface to avoid gouging it, and to work slowly, not trying to shave off too much at once. The detail chisel is more expensive, but I find it offers much more control compared to a blade. Touch up any areas as needed with fine sandpaper.



7 The end ladder, grab irons, and brake gear have been applied to the B end of the shell.

You'll need to touch up areas where these details crossed the vertical grooves of the car siding. I used a scribe to add grooves in these areas, following the guide of a steel rule as a straightedge, **4**. Work slowly and try to match the existing grooves as closely as possible.

Touch up the modified areas as needed. I used a brush, although an airbrush would be ideal. Paint matching is an inexact science. I tried various shades of yellow for the sides, and wound up using Modelflex reefer yellow for the sides and a mix of light Tuscan oxide red and dark Tuscan oxide red for the ends. The colors aren't exact matches, but—with some weathering—they ended up being close enough. I also brush-painted the bottom of the sides on the shell yellow to match the prototype car, as the model had these exposed strips in red.

For the new ladders, I looked through my scrapbox and found some ladders from an old boxcar kit and cut them down to a six-rung height, **5**. I airbrushed them the same yellow and

Materials

5th Avenue Car Shops

Accurail refrigerator car,
Sioux City Dressed Beef

American Model Builders

293, 40-foot wood running board

Cal-Scale

190-276, Brake hoses
190-283, AB brake gear set

Detail Associates

2206, Wire eye bolts
6215, Uncoupling levers
6242, Ladders

InterMountain

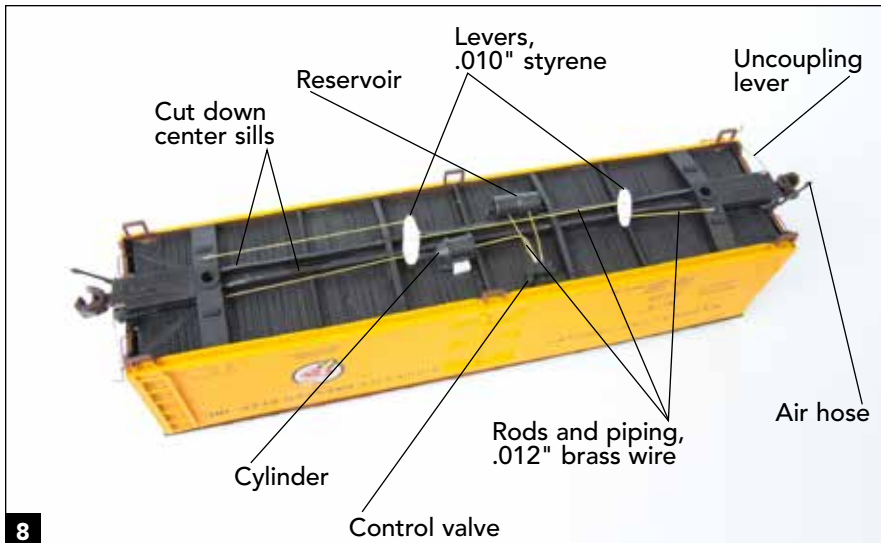
40050, 33" scale wheelsets

Kadee

2020, Ajax brake wheel

Tichy

3021, 18" scale grab irons



8 Add underbody details as shown.

red that I had used on the body. Detail Associates no. 6242 ladders will also work, but they'll need to be cut down as well. I added a few small dots of cyanoacrylate adhesive (CA) along the back of the vertical posts and carefully set each ladder in place on the car.

For the new wire grab irons, drill mounting holes using the marks from the old molded-on irons as reference. Add a bit of CA to the ends of the grabs and insert them in the mounting holes. You'll have to drill clearance holes in the body shell behind the side grabs as shown in photo 6.

The kit includes the older style vertical brake staff with the brake wheel mounted horizontally atop the staff. When these cars were rebuilt, most received new brake wheels mounted on the car ends. Glue the new brake wheel housing and platform on the B end,

along with the Kadee brake wheel and paint them to match the end, 7.

The model had the deep fish-belly center sills of USRA-style cars, but the prototype had a straight center sill. I simply cut down the kit's center sill, 8. The other brake components are glued in place, with brass wire rods and piping as shown in photo 8. I also added Cal-Scale air hoses and Detail Associates uncoupling levers at each end.

The trucks are the kit's original frames, but I substituted InterMountain scale 33" metal wheelsets. I painted the wheel faces rail brown, and then added Testor's CreateFX oil and grease to simulate the effects of journal box oil leaking onto the wheels.

Weathering

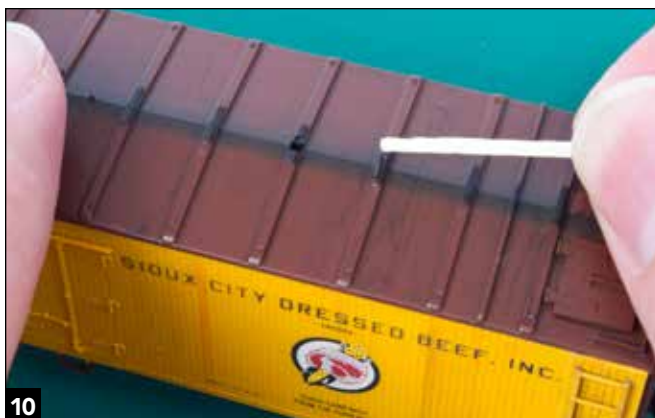
I weathered the car using artist's oil colors, placing small dabs of black,



9 The sides received a light wash of black and rust-color oil paint, streaked down the side to match the boards.

brown, and rust colors in an aluminum palette. Then I touched a turpentine-filled brush to a color and streaked it on the car. I used black on the roof with various browns on the sides, 9. You can make this effect as light or heavy as you like, depending on how old you want your car to appear.

I removed the kit's injection-molded running board before working on the car, and decided to replace it with a laser-cut wood part from American Model Builders. Before installing the running board, I painted it with washes of boxcar red, letting some wood grain show through. I added a bit of super glue to each running board support on the roof, and then carefully set the piece in place, 10 and 11. The car is now ready for service.



10 Add a bit of super glue to the running board supports along the center of the roof.



11 Press the new wood running board in place, making sure it's aligned properly.