



K119 – Northern Pacific, Spokane, Portland & Seattle, and Chicago, Burlington & Quincy 52' Flat Cars



In 1936, the Northern Pacific settled on a fifty-two foot flat car design with fifteen stake pockets per side and large fishbelly center sill underframes. These cars were extended versions of fifty-foot cars that had been constructed previously (1928 by Seims-Stembel, car nos. 60000-60195.) The first group of fifty-two foot cars were built in 1936 (60250-60499) by the NP's Como Shops. These were followed in 1937 by an additional 380 cars built by Bethlehem Steel (63000-63379). In 1948-1949, the NP built an additional 196 cars at their Brainerd, Minnesota Shops (64000-64195). The 1936-1937 deliveries had decks that extended only to the sides, while the 1948-1949 cars had decks that extended over the side sills with notches at the stake pockets.

The Chicago, Burlington & Quincy, a "child" of the Northern Pacific and Great Northern, also built a large number of this type of flat car. Most were 53'6" in length, but the first group, Class FM-12, nos. 89000-89100, built in 1938, were 52'0" in length. Their decks extended past the stake pockets, with notches where the stake pockets were located.

Another Hill Road, relation, the Spokane, Portland & Seattle also had 52'0" flat cars. These 200 cars, nos. 34000-34199, were built in 1951, and like the early NP cars, had a deck that was almost flush with the side sills.

General Assembly Notes

Begin by inspecting the castings. If there are any obvious defects, you may contact Speedwitch for replacements. In general, you will use many of the same tools that you use for other modeling projects, such as hobby knives, like those from Xacto (we most frequently use the no. 11 and 17 blades), sprue nippers (available from P-B-L - www.p-b-l.com - or Micro Mark - www.micromark.com), needle and mill files, wire nippers (www.xuron.com), drills and pin vises, screwdrivers, sandpaper, etc. We recommend that for items such as screws and drill bits, buy them from commercial suppliers rather than

hobby suppliers, as the quality is generally higher and prices are more competitive. Companies such as Otto Frei (www.ot-tofrei.com), Small Parts (www.smallparts.com) and McMaster Carr (www.mcmaster.com) offer these as well as many other useful tools. For adhesives, we use MEK for styrene-to-styrene joints and cyanoacrylate (CA or ACC) for most other situations. In some instances such as attaching an etched metal part like a running board to a plastic or resin part, we use Barge cement (available at cobbler's shops) followed by ACC to firm things up even more.

Assembly

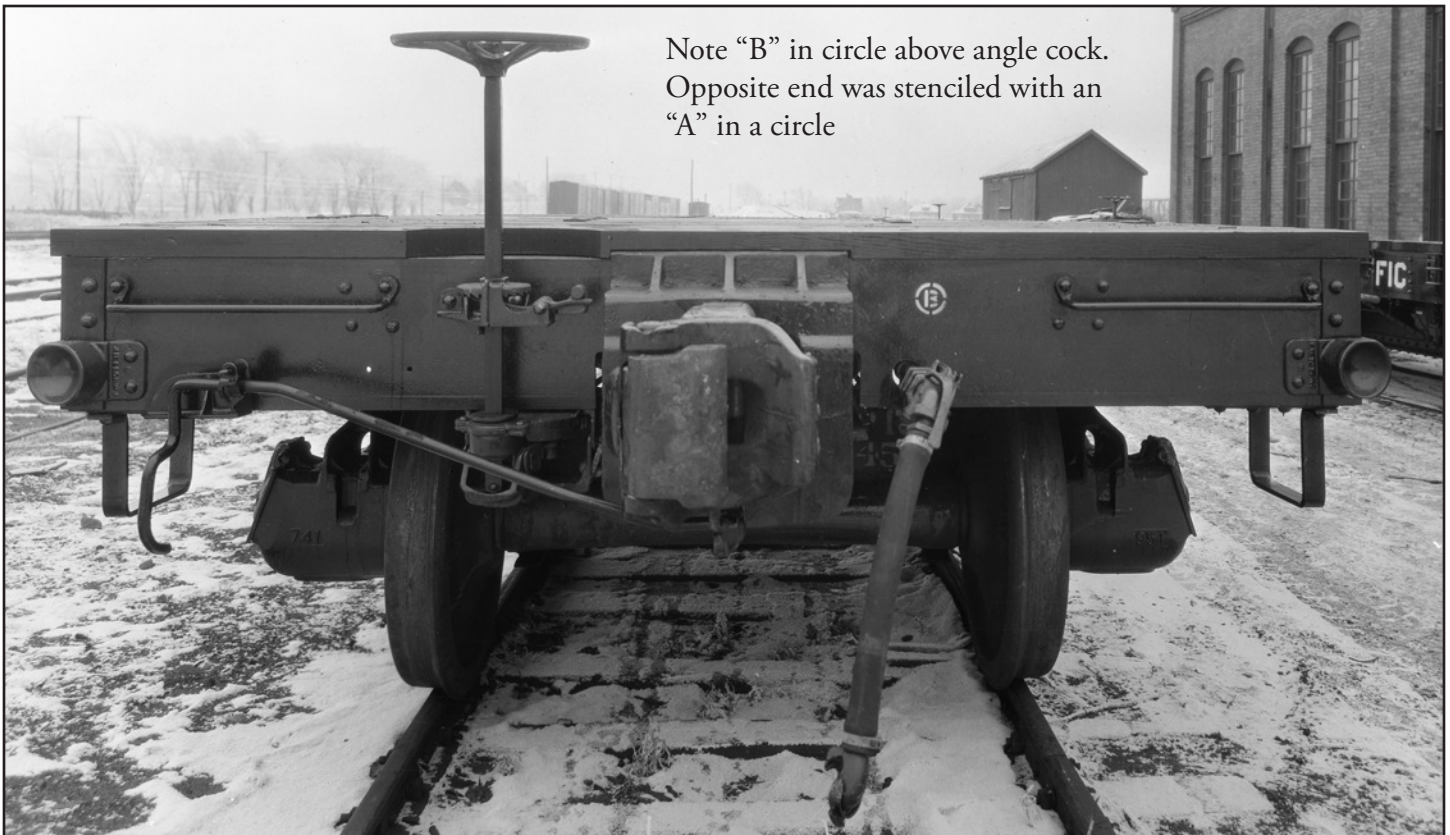
Remove the flash from the main casting by rubbing it gently back and forth across a sheet of sandpaper placed on a flat surface, such as a piece of glass or a countertop. The objective is to remove enough material so that the flash becomes tissue thin and easy to remove. It may be necessary to clean out the material inside the stake pockets by carefully drilling through from the underside, with the casting upside down on a flat surface. Follow this by carefully scraping with a hobby knife, using a no. 11 blade to "open" the stake pockets. Once the casting is cleaned up to your satisfaction, turn your attention to the underside.

The amount of detail that you desire will determine how much time you spend on the underframe. Begin by drilling the bolsters to accept your choice of trucks. Use a no. 50 drill and a 2-56 screw, which will tap its own threads in a no. 50 hole. For the NP and CB&Q cars, we recommend the Tahoe Model Works Double Truss AAR 50-ton trucks, while for the SP&S cars, we recommend the Kato ASF A-3 trucks. We found that the overall operation was improved by removing the "boss" on the bolster with an Xacto no. 17 blade, leaving a flat surface without the post of the boss.

The "body" is comprised of two pieces, one that contains a rectangular cavity for a weight, should you choose to use the



Photos this page and next, Northern Pacific Railway, Collection of Steve Peery



Note "B" in circle above angle cock.
Opposite end was stenciled with an
"A" in a circle

space for it. Regardless, the first assembly should be to glue these two pieces together. The method we recommend is to clean up the edges with a file and then tack the two pieces together in several spots from the bottom of the car. Once it is tacked in place, use the thin ACC and flow it into the seam from the top of the car (the place where the weight will be located should you add it.) Keep a tissue with the corners twisted into points to wick away excess ACC if it flows into unwanted places. Once everything is set, you can move on to the next step.

Add your choice of couplers. Secure the couplers and covers with short screws that extend into the body casting, but do not protrude through the top of the casting. If the screws extend above the top of the casting, the deck will not "sit" properly on the top of the body casting. We used Kadее scale couplers with whiskers for centering, although most Kadее and Kadее-compatible couplers will work.

Clean out the holes for the brake levers and rods. Chisel the inside of the center sills where there are openings (four in total) for the brake levers (these openings are on the outer faces of the center sills. To do this use an Xacto no. 17 blade to remove the thin pieces of material that you can see between the center sills "behind" the openings where the brake levers are to be located. Do the same for the hole locations on the crossbearers through which the brake rods will pass. A no. 17 Xacto blade is good for this purpose. Next, using a no. 72 drill bit, clean out these holes from the opposite side. The holes in the center sill for the brake levers will be cleaned through a combination of drill holes combined by scraping with a no. 11 Xacto blade as well as a fine round file. Once finished, the cast

resin brake levers should be able to pass through the slots. If you are adding weight to the car, it is recommended that you "beef up" the center sills to prevent "sagging" of the car over time (it may take years for it to manifest itself.) To do this, add three pieces of 0.060" x 0.125" strip styrene between the center sills, leaving the area where the brake levers pass through the center sills open. Then, on top of this, add one continuous piece of 0.125" x 0.125" styrene, tapered at the ends to match the center sills. This should provide enough rigidity to stem any potential sagging from the weight that is added to the car.

The angles to complete the center sill and crossbearer sections are cast as a single piece. This makes assembly easier, but precision is more important. We prefer to lightly tack things in place to ensure proper alignment followed by application of ACC to strengthen the joint. To tack things in place we used Barge cement. It is advisable to approach things in three steps. First, tack the casting to the bottom of the center sill between the crossbearers. Once everything is located to your satisfaction, add ACC to secure the casting. Next, glue the ends of the center sill sections in place by carefully adding ACC, using something like a pin and then holding the casting down in place, letting it conform to the center sill sections. Hold until set. If necessary, add more ACC along the joints. Lastly, hold down the portions of the casting that cover the crossbearers and where the crossbearers meet the side sill. Follow the technique mentioned above. There may be some portions of the casting that extend past the side sill. These may be trimmed once everything has dried.

Assemble the brake cylinder from the Tichy brake sprue using parts 3, 8, and 9 and liquid cement. Likewise, assemble



November 5, 1951, Fort Bragg, North Carolina, Col. Chet McCoid photo, Bob's Photo



February 20, 1955, Tacoma, Washington, Col. Chet McCoid photo, Bob's Photo



Chicago, Burlington & Quincy photo, courtesy of Al Hoffman

the reservoir using parts 1, 2, and 10. Once dry, drill no. 78 holes in the rear of the cylinder and in the two halves of the reservoir. Also, drill three holes in the AB valve, part no. 5.

Attach the three main brake parts to the underframe. Add the reservoir as shown in the photo. One half rests on the ledge against the crossbearer while the other end should be attached using the cast resin bracket. Glue the cylinder to the small cast resin bracket. After this has dried, add this assembly to the center sill. Note that the height of the cylinder needs to be aligned with the slot for the main brake lever, so trial and error along with some measuring is in order. The best way is to test fit things before gluing. Finally add the cast resin "pad" for the AB valve, with the cast-on rivets at the side sill and then add the AB valve to this "pad." Please refer to the underframe photos to aid in placing these parts. Once everything is in place, drill no. 72 holes through the crossbearers and center sills for the piping between the reservoir and AB valve, again using the photos as a guide.

If adding the brake piping, add now. Use 0.010" wire and route the piping as shown in the photos. Make one bend at a time, then insert the part, make another bend, etc., until

the wire can be trimmed and inserted into both parts. Affix with ACC. Add the dirt collector (part no. 6) to the largest hole in the AB valve (the one that was already in the AB valve and did not have to be drilled) and secure with liquid cement.

Next add the brake rods. The rods between the center sills cannot be seen and are ignored. Use the clevis (part no. 29 on the brake sprue) to secure the main lever, while the dead lever is attached directly to the center sill. It may be necessary to shorten the main lever to have a straight piece of wire for the brake rods (notice how one of ours is not straight because we did not follow our own advice!) Add wire brake "rods" between all of the levers using 0.012" wire. Again, consult the photos as they are a far better guide than a textual description. If you choose, you can add a segment of chain (not included) in front of the clevis on the piston of the brake cylinder, as shown, for more realism.

Drill below the bolt heads at the two corners of the sides and on the ends with a no. 78 drill bit and add the straight grab irons as included. The grabs will need to be rebent to be slightly wider (yes this is a pain, but the prototype did not use 18" or 24" grabs, the two sizes available commercially.) The

legs should be trimmed before adding the grabs. Secure with ACC.

Add the sill steps. Drill no. 74 holes under the side at each corner and add the metal sill steps. Note that there are starter holes to guide your efforts. The sill steps will need to be rebent to have a narrower step.

Add the uncoupling devices. The brackets for the uncoupling rods are already cast as part of the ends. Create eye bolts by bending from 0.010" wire to create wire with a small loop on the end. Drill holes at the brackets using the starter holes as a guide, using a no. 78 drill. Bend 0.012" wire, consulting the photos, and add these parts, affixing with ACC.

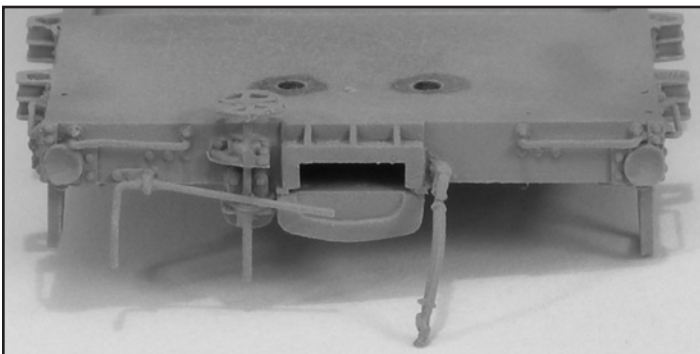
Add the hand brake assembly. The piston of the brake cylinder "points" toward the B end, so make sure that your B end is properly oriented. It is comprised of two resin castings, wire, and a hand wheel. Drill holes through the two resin castings to accept a piece of wire. Glue the castings to the end sill as shown, making sure the wire brake staff is straight vertically. Note that the hand brake had a drop shaft, meaning it could be raised, as shown in the photo of the prototype, or lowered, as on our model. Secure everything with ACC.

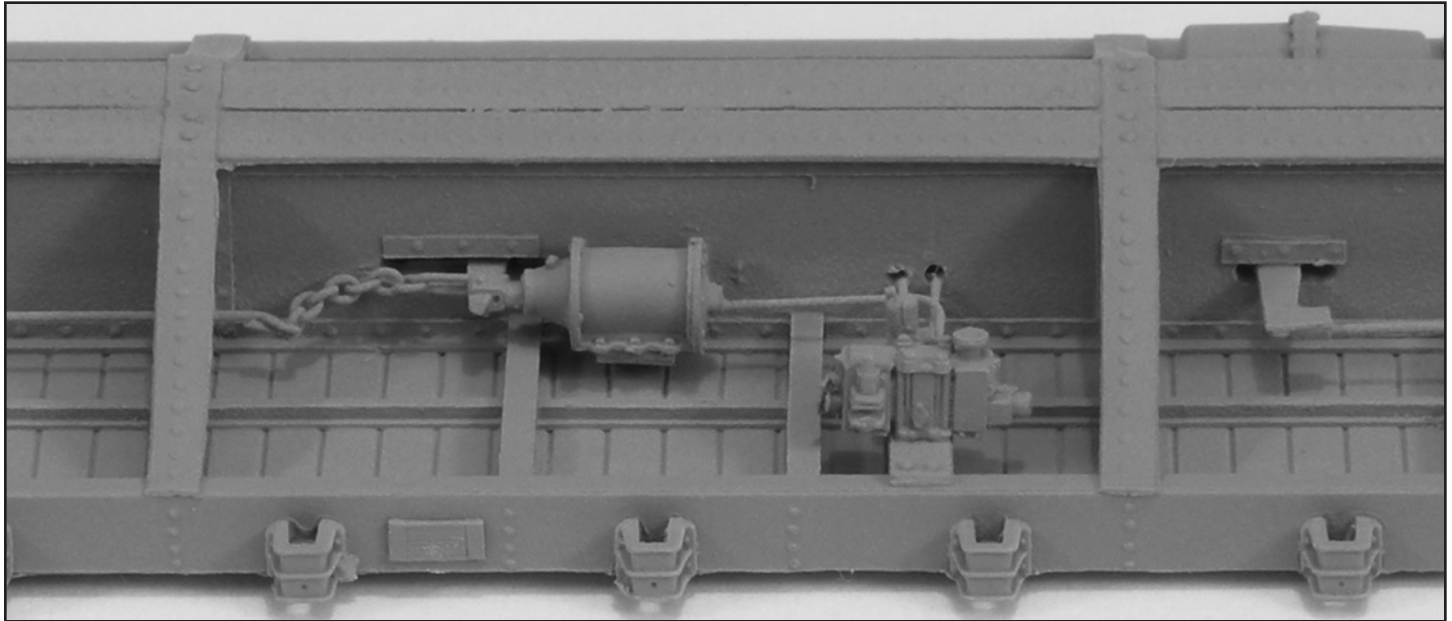
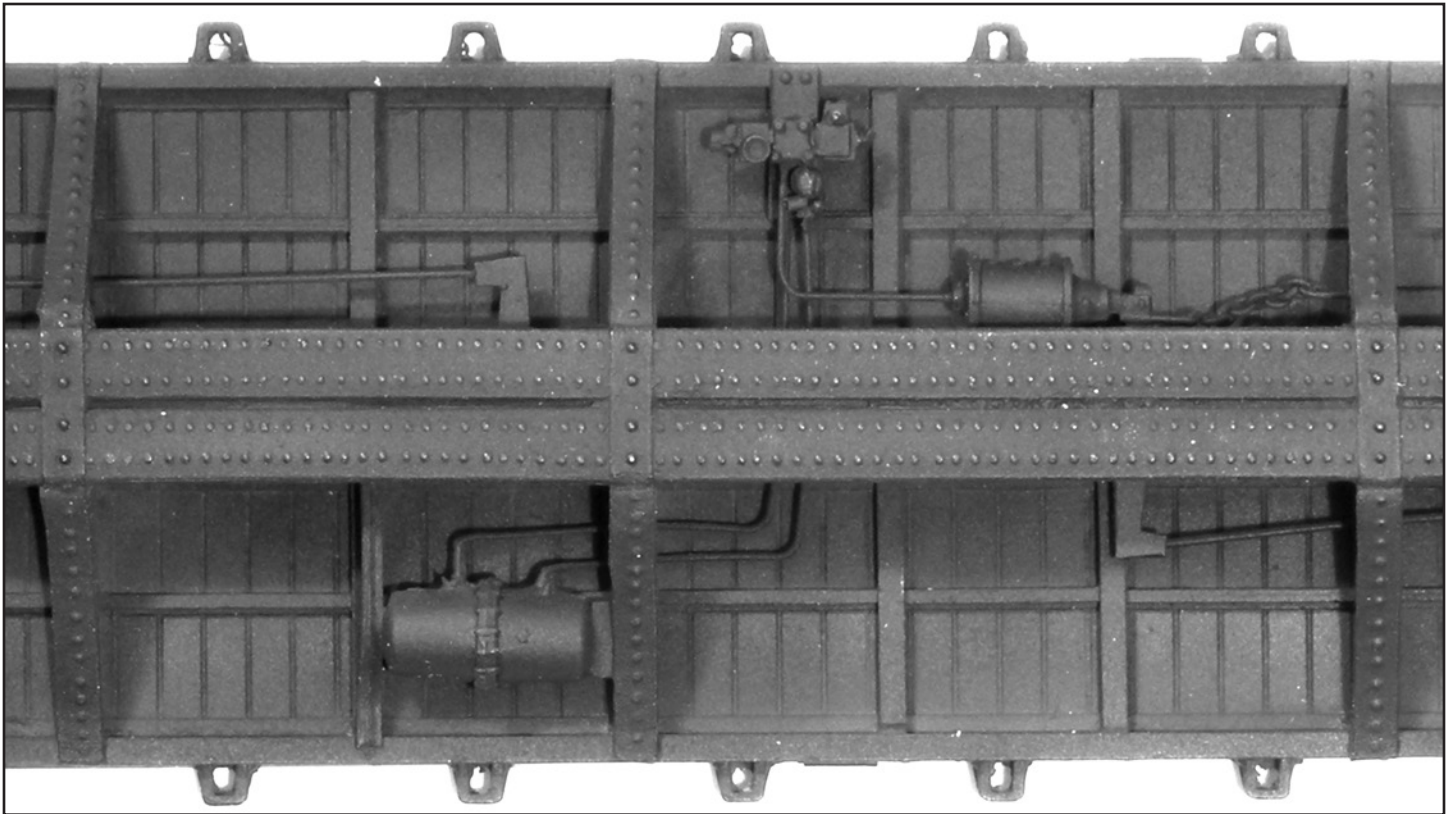
Add the angle cock/air hose (not included) if you choose to do so. Simply drill a hole in the end sill and glue in place.

Assembly is complete except for adding the deck (note that two decals, the "flush" and extended, notched are included) and weight (these will be done last) and the model is ready for painting. It is recommended that all metal and engineering plastic surfaces (truck sideframes) be lightly sandblasted to aid paint adhesion. Wash the model thoroughly using a soft toothbrush and liquid detergent, taking care around delicate areas, rinse thoroughly and allow to air dry. Airbrushing is the preferred method of painting. Apply a coat of primer first. Use whatever black (for NP) or oxide red (for CB&Q and SP&S) you prefer for the car body and trucks. There are small resin strips that will be added to the deck after painting. Paint these the same color as the car when you paint the car. After this coat has been applied, add a gloss coat to help the decals adhere to the surface of the model. For the deck, we recommend primer followed by a coat of Testors Model Master Armor Sand (Federal Standard 30277) as a good neutral tan that can then be weathered to your taste to reflect a flat car deck. We scuffed this with a wire brush to blend it and add some texture. Then we painted the strips above the bolsters black using a fine paint brush.

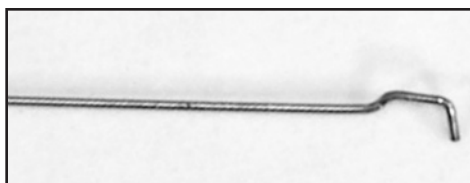
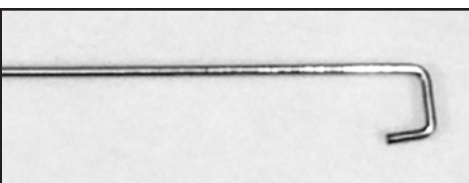
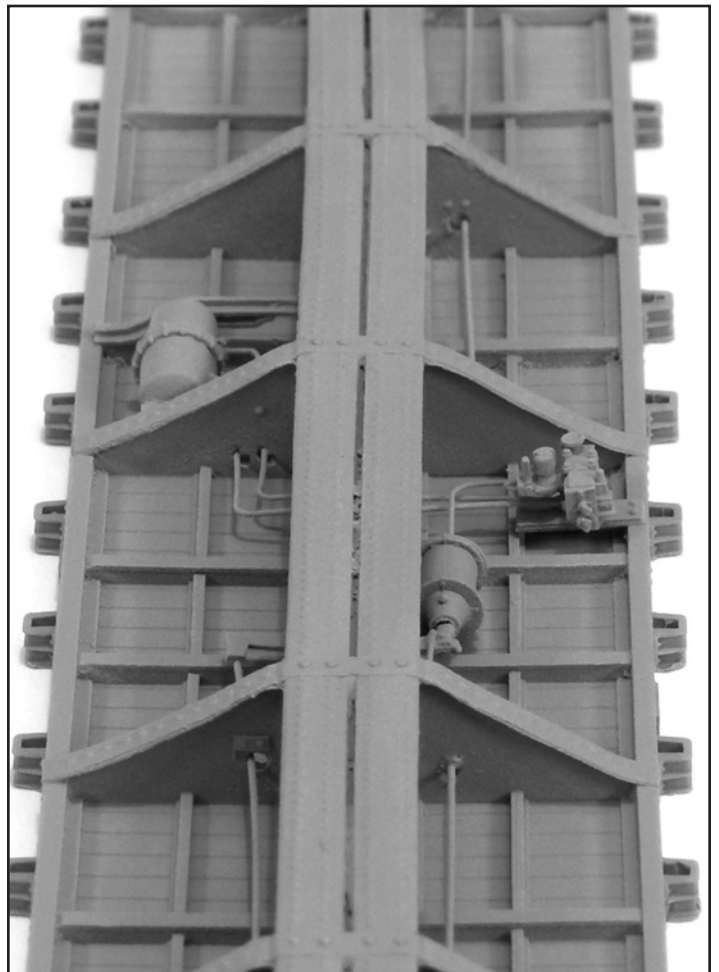
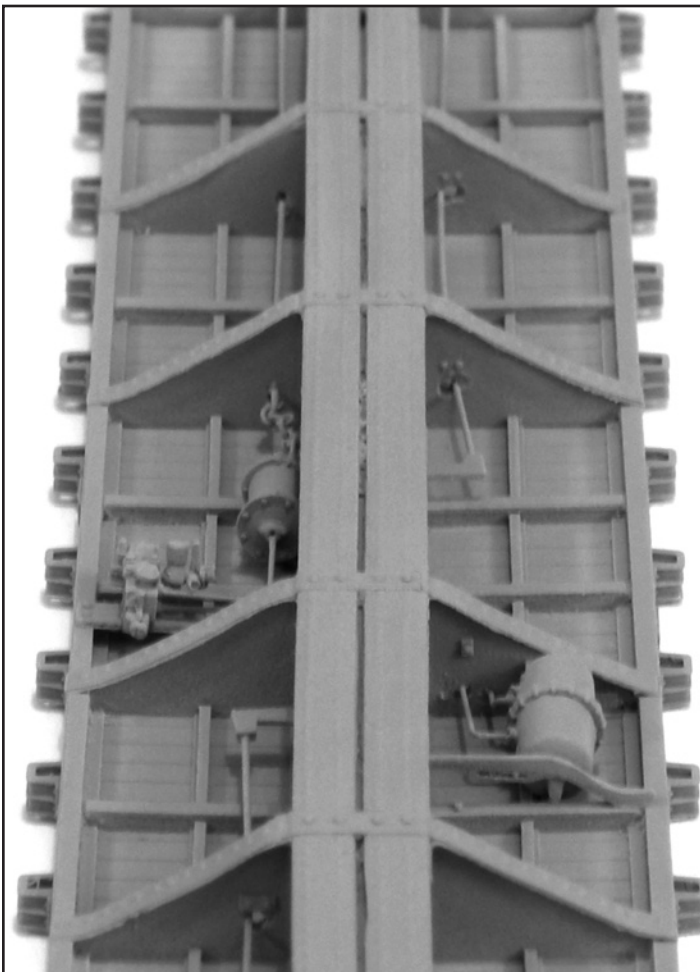
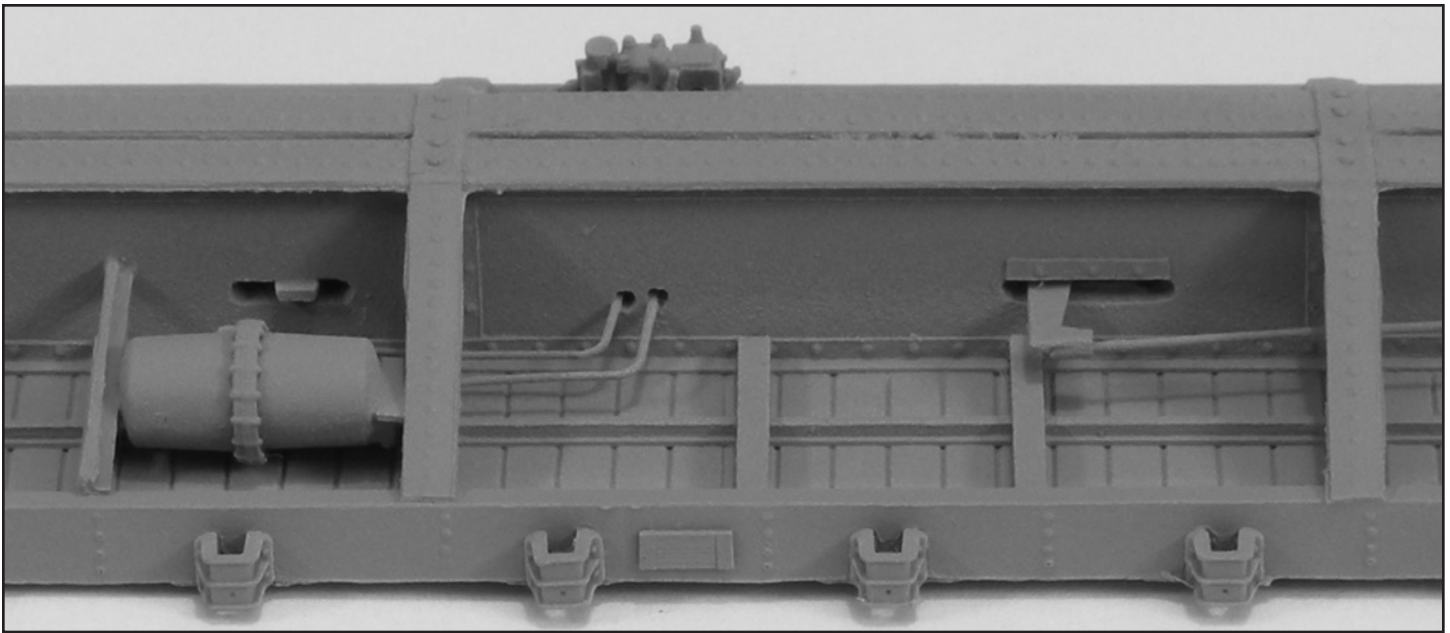
It is now time to letter your model. The decal paper we use is extremely thin. This is done to try to eliminate any tell-tale traces of the decals once they are on the model. However, this also means that extra care must be taken in applying the decals to the model. When the decals are slid off the paper backing, they tend to curl under the bottom of the paper. Use the following techniques to apply our decals. Start with a glossy surface as decals do not like flat coats and do not adhere without leaving lots of trapped air. Save yourself trouble beforehand and apply a clear gloss coat if your model is not already painted with a gloss color. To apply the decals, cut the necessary pieces from the sheet and dip into water. Once we do this, we then place them on a sheet of paper towel for a few moments to allow the decal to loosen from the backing. Slide the decal so that there is enough paper exposed to grab with tweezers. Once you have grasped the paper backing with tweezers, slide the edge of the decal that is overhanging the paper back on to the top of the paper. The tweezers will not allow the decal to entirely cover the paper, meaning that the decal will "gather" at some point. This is ideal. Place some water on the model where the decal is to be located using a fine brush. Lay the paper on the model while still holding with tweezers and slide the decal on to the model. We use a very old and dull Xacto knife for just this purpose. Anything dull will work. If you use something with a sharp point, it will catch on the decal and create havoc. If the decal folds over on itself, just slide the decal away from the folded portion. This will "right" the decal. Gently slide the decal into position and then leave it alone. Let it dry completely! Once it has dried completely, decal setting solution can be added by touching a brush laden with solution at the edge of the decal. We use Champ's solution. Capillary action will pull it under the decal. Once the solvent has been added, again leave the decal alone until it has dried completely! After it has dried, you can then proceed to prick or slice where there is trapped air and reapply decal setting solution. After you are satisfied with the results, apply a clear flat coat (we use Testor's Dullcote lacquer) to the decals.

Add the small strips to the top of the deck as shown in the photos. Weather the model to taste. We used Bragdon weathering powders (<http://www.bragdonent.com/>) followed by a coat of Testors Dullcote to seal them. Add the weight and the deck. Replace the trucks, maybe add a load and your model is ready for service. Congratulations!

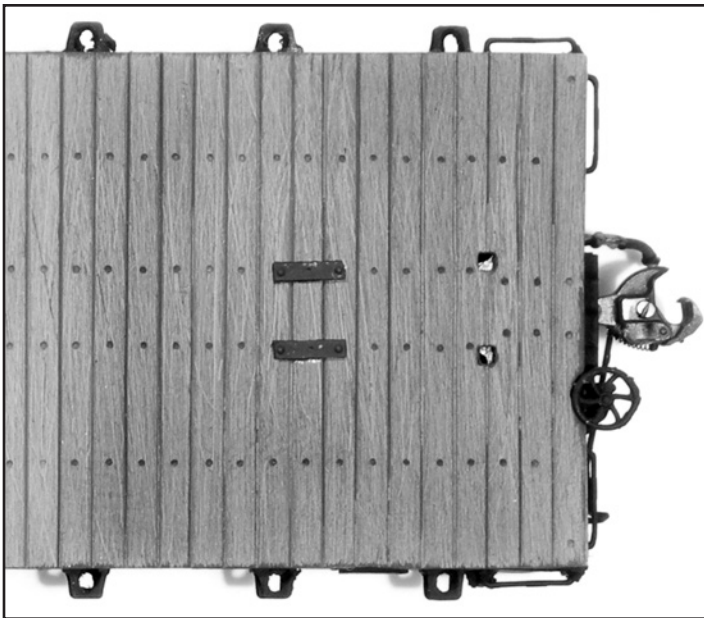
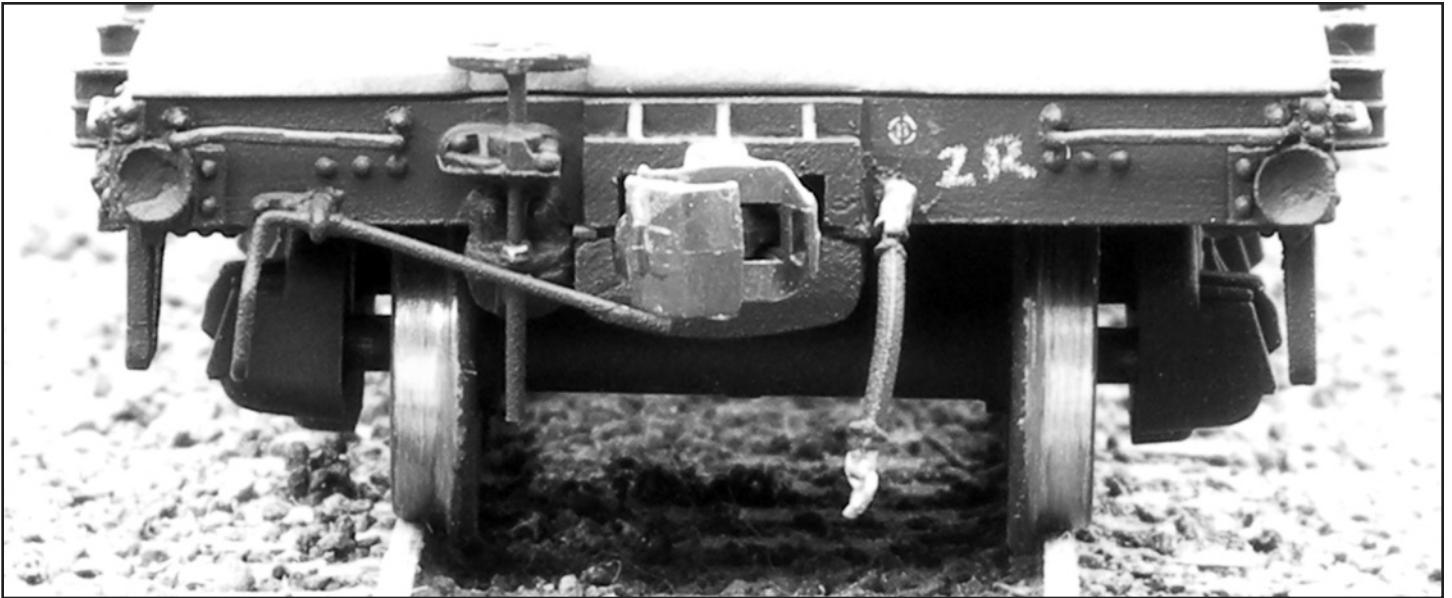




Note that the strips above the bolsters had not yet been applied in this photo.



Create the uncoupling levers by using 0.012" wire and making the bends as shown. At left, a small, u-shaped bend is made to create the "handle." In the middle, a small 'jog' is bent above the "handle." Lastly, on the right, a bend is made to create the link to the coupler.



Thank you to Aaron Gjermundson for use of patterns and to Model design Associates for production. Please watch for more NP and Hill Roads offerings in the future.

