Part P109 - Lehigh New England 'Re-roofed' ARA Box Cars

ca. 1964, Collection of Arnold Menke

History

The Lehigh New England received three groups of ARA-design steel box cars. The third group is in many ways an entirely different car, but the first two closely followed the design. They had flat, riveted ARA-design ends and roofs, "ARA" style sides (different from the PRR X29 side patterns,) and ARA underframes with the automobile car crossbearer configuration, with the crossbearers located 9'10" from the center of the car. The crossties were located under the door posts, 3'2½" from the center of the car.

The first group of cars was built in 1927 by Pressed Steel Car Co. to haul bagged cement. This was a 200 car order, placed in the 8001-8200 series. These cars had ARA Type Y trucks (similar to the PRR 2D-F8.) They used unpowered, staff-type hand brakes and Carmer uncoupling devices.

The second group of cars were built by Magor Car, again for hauling bagged cement. That order was for 300 cars in series 8201-8500. They were exactly the same except for the use of "standard" ARA cast sideframe trucks and Ajax power hand brakes.

Beginning in the late 1940s, these cars had their original roofs replaced with Murphy diagonal panel roofs. At that time, the running boards and brake steps were replaced with open grid steel types. The Carmer uncoupling devices were also replaced with rod-style devices. For some reason, very few cars ever received a second hand hold on the left edge of the car side.

Initially the cars were painted freight car red on all surfaces. However, in the early 1950s, the cars began to be repainted in an all-black scheme, retaining the "fried egg" emblem. In the mid-1950s, a billboard scheme was introduced with a large "LNE" and white stripe along the side sills.

One flaw of the ARA design was the tendency for the side sheathing to corrode where it overlapped the side sill. Most cars were repaired with patches in this area, clearly evident in the photo of LNE 8181 above. These cars lasted into the 1960s and could be seen throughout the country.

Instructions

General

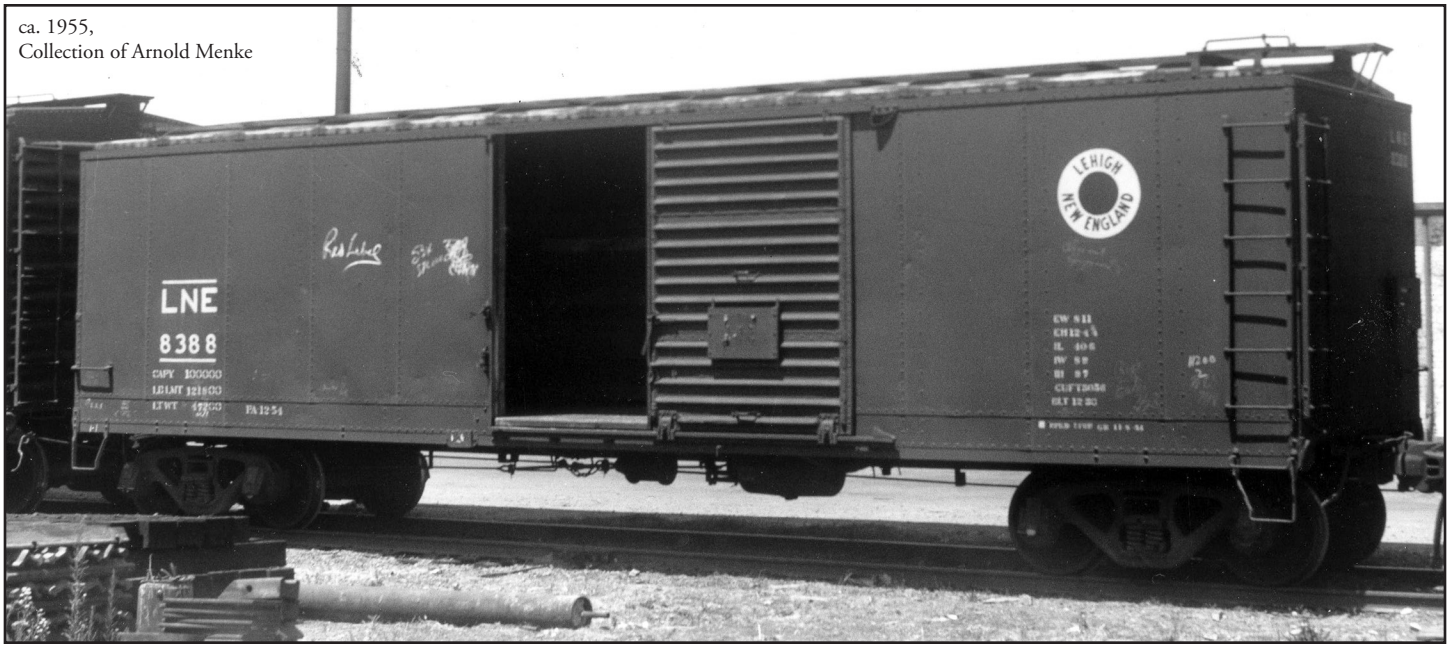
The general order of the assembly is in many ways up to the preferences of the modeler. There are also some things that are optional and require items not included in the kit. These are noted throughout the instructions.

Assembly Sequence

◊ Begin by gluing the desired weight to the inside of the car body. If using an adhesive such as Goo, silicone, etc., wait until the adhesive has fully cured before gluing the roof in place.

◊ Modify the kit underframe to fit the car body. The kit underframe is for a car with 5'0" kingpin-to-striker spacing while the MEC and LNE cars had a 5'6" spacing. Remove the stringers from the car floor using a chisel blade. Move on to the black underframe part (this is the long piece with the center sills, crossbearers and coupler pockets.) The material past the bolsters should be cut away (save the coupler boxes if you will use them or discard them if you prefer another type of coupler box.) Then trim the bolsters themselves away from the rest of the underframe. Glue the bolsters in place using the two rivet pairs on the side sills as locator aids. In essence, you are moving the bolsters 6" closer to the center of the car. Add the kit crossties (rectangular-shaped pieces with small tabs on one edge.) Remove the small tabs and glue the crossties so that they are located under the door posts. Consult photos for placement.

◊ Add the roof casting. Clean the edges of the underside of the roof using a mill file, by running the file along the edge



ca. 1955,
Collection of Arnold Menke

at an angle to avoid damaging the detail on the roof eaves. Take the roof and insert it into the car body, centered from end to end. If the fit is satisfactory, glue the roof in place using ACC. The best way is to hold the roof in place and carefully run thin ACC along the joint from the inside, keeping a tissue at hand to wick away any excess ACC that may seep through to the outside. If the roof is held in place firmly during this step, and you tackle one part of the roof/body joint at a time, there should be little opportunity for the ACC to leak out from inside the car body.

◊ Now the details will be added. Much of what you do from here on will be determined by how much detail you prefer to add. If you wish to add a train pipe, drill holes in the underframe cross members now. The model shown in these instructions does not have a "separate" train pipe, although there is one cast on to the floor of the Red Caboose car body.

◊ Add the brakes to the underframe. If adding full detail you will need to add an AB brake system. Begin by assembling (see the diagram) and pre-drilling the parts using a no. 78 drill (the Tichy diagram shown later in the instructions recommends a no. 80 drill, but a no. 78 provides more room with which to work.) These holes will be for wire "piping." Once all of the holes are drilled, add the three brake components to the underbody. The cylinder can be glued to the bracket on the Tichy brake parts sprue. The AB valve as shown in the photos was add to a strap/bracket simulated with 1x8 styrene strip. One piece rests against the inside of the side sill while the "platform" for the AB valve rests on the piece of strip just added and on the 4x4 stringer section that was added earlier. The AB valve is then glued on top of this. The double lugs of the reservoir are glued to the crosstie while a section for the single lug is fashioned from two pieces of 4x4 strip styrene glued together to form a segment of 4x8. If using a different set of AB brakes, it may be necessary to modify your approach.

◊ Add the brake piping using 0.010" wire. Add the two pipes between the reservoir and the AB valve. Bend as shown in the photos. Add the pipe between the cylinder and the AB valve. If your AB brake set has a dirt collector, add it to the AB valve now, pre-drilling it with a no. 77 hole. Secure all of these "pipes" with ACC if you have not done so already.

◊ Add the brake levers, using those in the Tichy brake set, or alternatively creating them from scratch as described below. The main brake lever from the cylinder on the model was created using 1x6 styrene strip. Insert the main lever at the front of the cylinder into the clevis and secure everything in place using the appropriate type of cement. The dead lever is also 1x6 styrene and is attached to the center sill with a scrap of styrene as a "pad." Add the brake levers as shown using more Tichy turnbuckles (with one end trimmed off) to simulate clevises and 0.012" wire for the brake rods. Consult the photos as you work. Add grab irons to simulate hangers for the levers. For the rod emanating from the clevis on the front of the cylinder, a section of chain may be added as well for additional realism.

◊ Add the etched metal running boards. We recommend using Barge cement followed by a touch of ACC to further strengthen the joints. The underside of the latitudinal running boards must be created from 1x3 strip styrene. This is necessary because you must "shorten" the latitudinals by one row of grid openings. This likely sounds confusing. However, if after adding the running board, you lay a latitudinal on the roof in its proper location, you will see that it extends out past the roof eaves. Using cutters, such as those from Xuron, remove the row that hangs over the eaves. Dress this edge with a file and proceed. The supports for the ends in the Plano etched parts may be bent to shape and used or you can create these from styrene. We used styrene. For the angle under the end of the running board, we used a styrene 1x2 "flat" on the underside with a 1x3 on edge against the 1x2 (see photo.) The diagonal supports are 1x2 styrene. For the latitudinals, the straps are 1x3 styrene (again, see photo.)

◊ Next, detail the sides and ends. Add the bracket grabs (these are on the Red Caboose parts sprue.) We removed the

ca. 1960, Paul Dunn photo, Richard Burg Collection

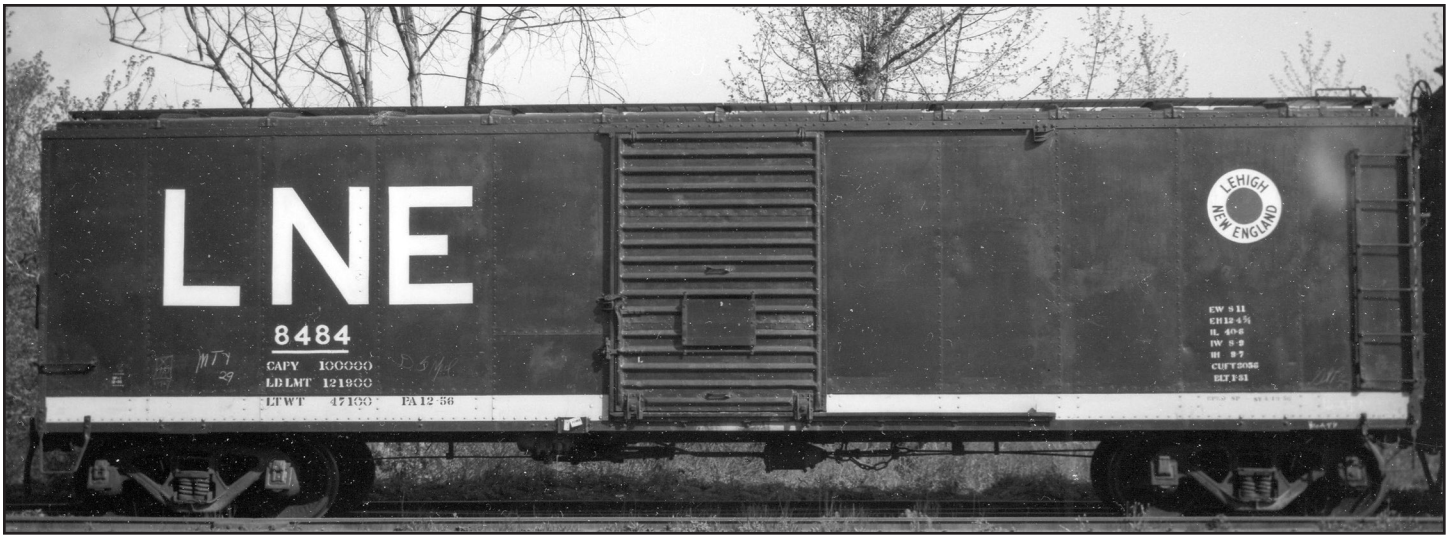
grab portion and replaced it with 0.012" wire for durability. If you wish to add the doors now, scroll down to that section of the instructions. However, if adding now, it is recommended that you add some thick styrene to the back of the doors to "beef" them up as handling may cause them to "cave-in" a little. Add the sill steps. On our model, we added the Red Caboose sill steps and then trimmed them off, leaving the mounting "straps" in place. We then added A-Line sill steps to improve the durability. Add the ladders from the Red Caboose parts sprue and drop grabs just below the ladders. Please consult the photos.

◊ Detail the ends. Add the ladders. Add the bracket grabs to the end. The ones on the end sill and the one on the right side of the end have the brackets oriented vertically. The Red Caboose parts set includes two styles so make sure you use the correct type (the same as the ones installed on the car side.) Add uncoupling levers. Drill no. 78 holes above the coupler and above and to the right of the push pole pocket. Create eye loops from 0.010" wire and glue the one above the push pole pocket in place. Bend the uncoupling levers from 0.012" wire (there are two bends in each lever, offset 90° from each other so that while the "handle" of the lever points down toward the rails, the part that operates the coupler extends out from the end of the car, "pointing" out.) Thread the extra eye loop over the lever and then thread the lever through the eye loop that you have already glued above the push pole pocket. Then insert the second eye loop into the hole above the coupler and affix with ACC. See photos of the model. Secure the uncoupling lever with ACC. Add the placard boards from the Red Caboose parts. Now, turn your attention to the B end. Prepare the Tichy hand brake housing by drilling hole(s) in the bottom to accept a u-shaped wire loop (if you are adding a segment of chain [not provided]) or just running a piece of wire into the bottom. Add the chain and wire loop, or just the wire, to the bottom of the housing and secure with ACC. If using chain, make sure that the section of wire from the chain to the bottom of the car side is in place as well. Next, glue the housing to the model as shown in the photo. Add the bell crank to the end sill, directly below the housing. Trim the wire from the housing so that it is the proper length and secure in the notch in the bell crank using ACC. We used a Tichy turnbuckle (not provided) that was modified and slipped over the bell crank. This is also shown in the photo. Add the brake stand (etched part) and brake stand supports to the car end. Finally, pre-drill the resin retainer valve and add it to the end. Run 0.008" wire from the retainer to the underside of the end sill, as shown. Add the Ajax hand wheel from the Tichy brake parts.

◊ Now turn your attention to the door castings. Clean these up by rubbing on sandpaper until the flash is tissue thin. Clean up the edges using a fine file. If all is okay, glue using ACC. Next, add the placard boards to the doors. The route card boards are Red Caboose parts and are located on the side sill just to the left of the door. If you are modeling a car with billboard "LNE" and white stripe above the side sill, it is advisable to add these after painting to avoid making masking more difficult. Finally, add the door tracks below the doors and along the side sill. These are Red Caboose parts, but with the door stop trimmed off. Add the resin door stops. The complex one is located at the end of the top door guide while the simple triangular one is glued at the end of the bottom door track. See photos.

◊ For trucks, we recommend Bowser Pennsylvania trucks as being matches for the early cars and Tahoe Model Works Buckeye trucks as being close matches for the later prototypes.

◊ Before painting the model, we recommend lightly sandblasting all metal (grabs) and engineering plastic surfaces (truck sideframes) to ensure that the paint will not chip or flake. This should be followed by a washing using liquid dishwashing detergent and a soft toothbrush. Rinse thoroughly and allow to dry completely. Prime the model with your choice of primer, then paint the model a dark shade of freight car red (like Floquil box car red) for early re-roofed cars and any black for later



ca. 1957, Paul Dunn photo, Richard Burg Collection

Weber Canyon, Utah, Will Whittaker photo

repaints followed by a gloss coat to improve decal adhesion. If modeling a car with the white stripe along the side sill, paint this first, mask it, and then paint the rest of the car black.

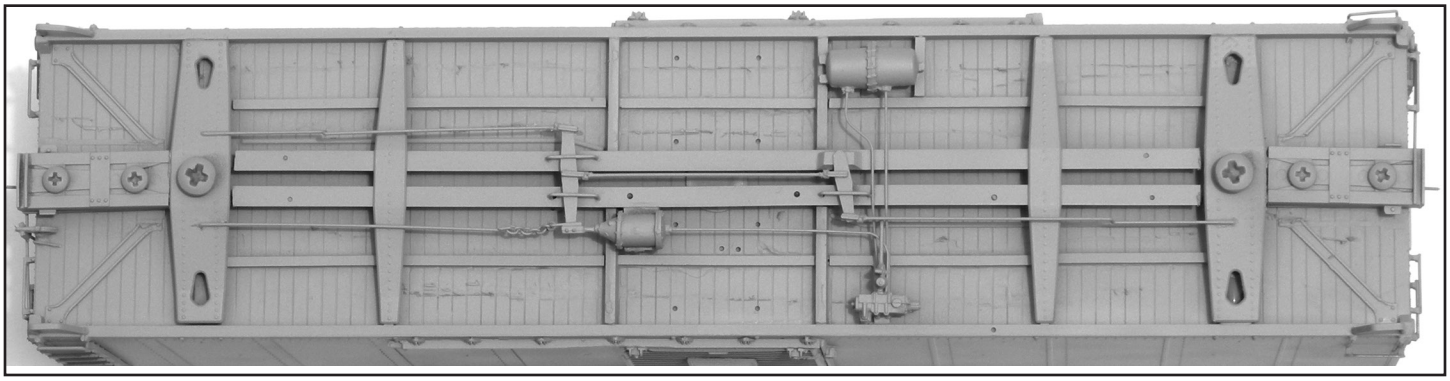
◊ For decaling, our recommended approach is to apply the decals with only water. After sliding them in place (with a dull object) let them dry *thoroughly*. After they have dried, apply decal setting solution by touching the edge of the decal with a brush that has the solution on it and letting capillary action pull the solution under the decal. Again, let the decals dry thoroughly. After they have dried again, using a sharp knife, slit any areas where there are bubbles or silvering. Add setting solution, Keep repeating until all traces of air are gone. Add a flat coat to seal the decals. Weather to your preference, add reweigh and repack stencils, and chalk marks, and your model is ready. Congratulations!

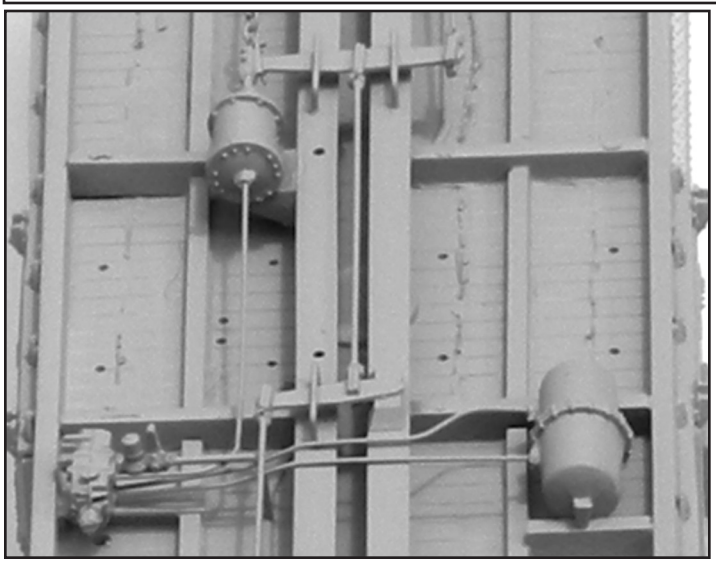
Parts List

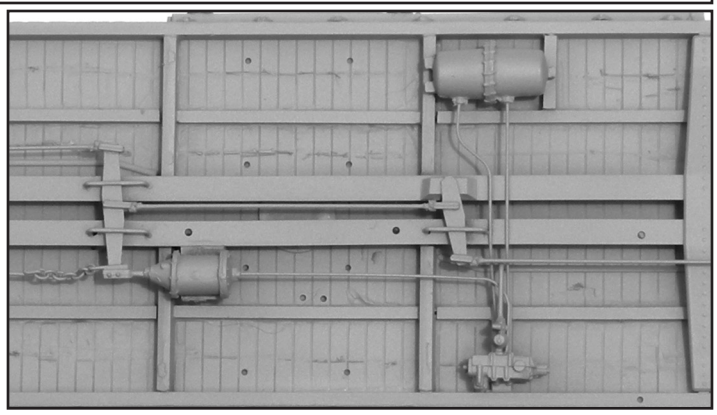
Resin castings (roof, doors, and details) [included]
Decals [included]
Red Caboose 40' ARA Box Car kit
18" straight and drop grab irons
Tichy AB brake sprue
Strip styrene
Apex Tri-Lok running board and brake step
Wire (0.008", 0.010", 0.012". 0.015")

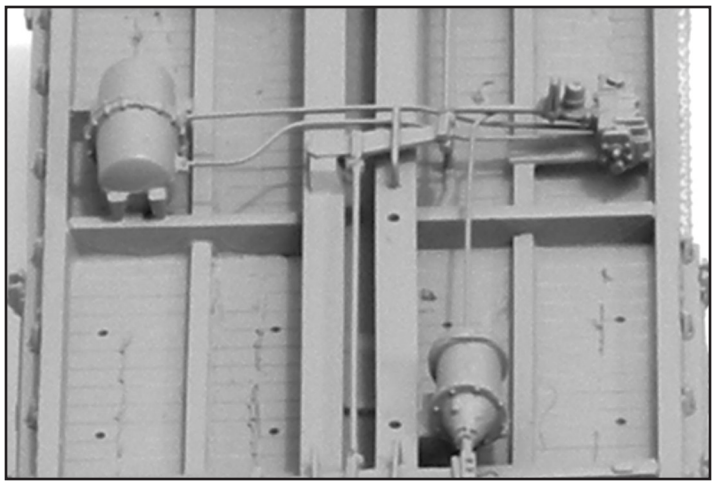
Optional

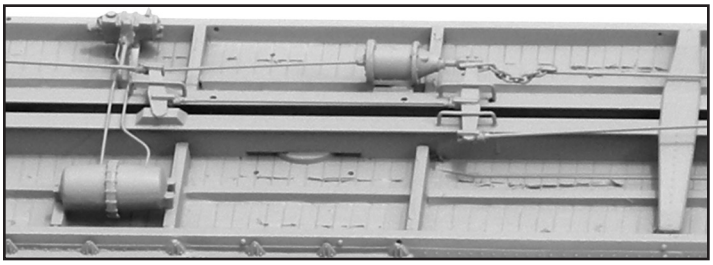
Tahoe Model Works Buckeye trucks
Couplers
Strip styrene - various
Chain

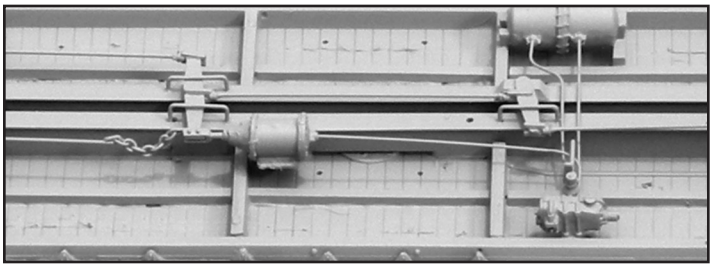


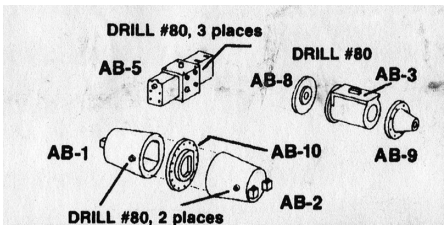


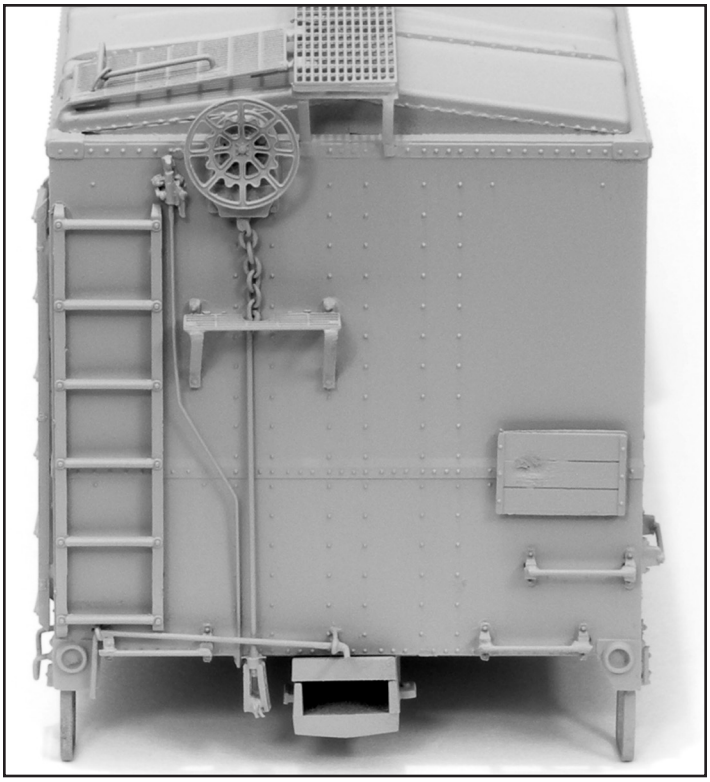


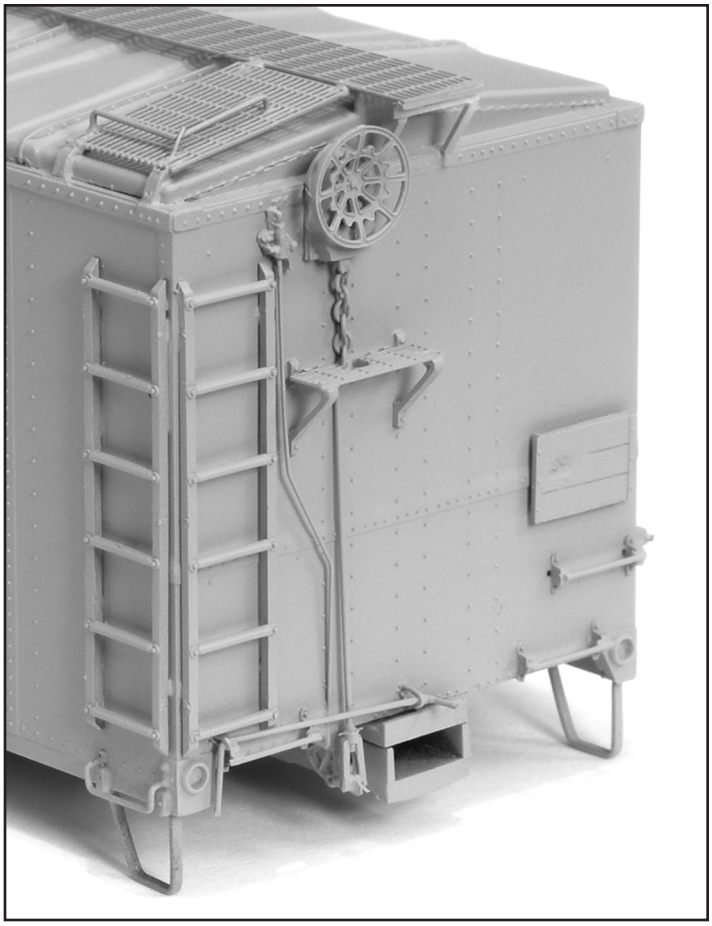


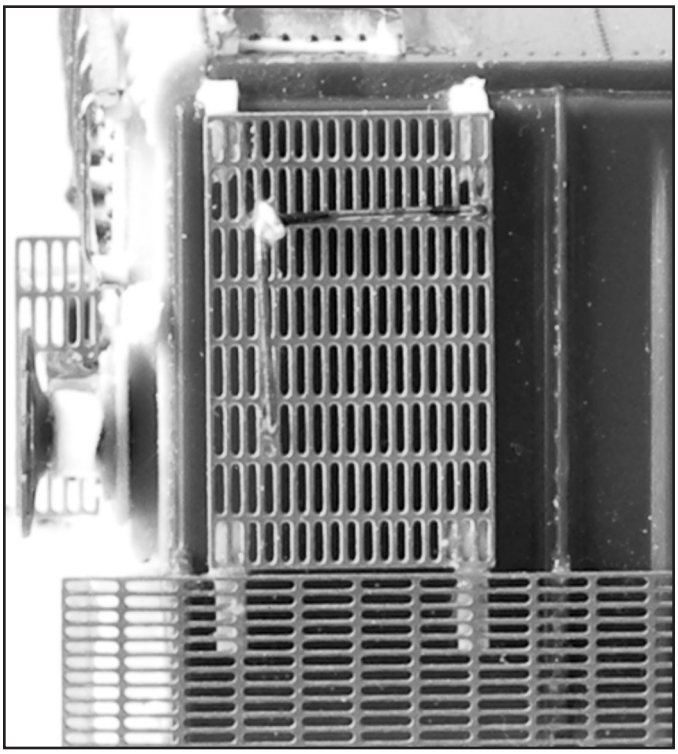





DRILL #80, 3 places
AB-5
DRILL #80
AB-8
AB-3
AB-1
AB-10
AB-9
AB-2
DRILL #80, 2 places







Latitudinal running board supports fabricated from strip styrene (note that this is a different model, but the latitudinal supports can be created in the same fashion.)

Thank you to Bill McClung of Red Caboose and Don Tichy of Tichy Train Group. Special thanks to Bill Welch for inspiration and roof patterns.


LNE
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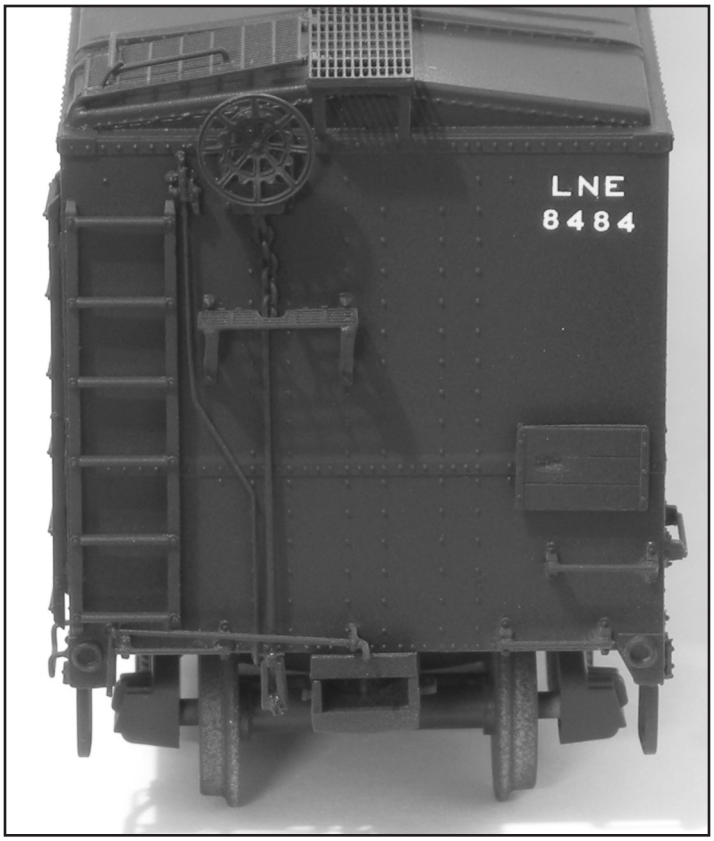
CAPY 100000
LDLMT 121900
LEHIGH
NEW ENGLAND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