

Conowingo Models



24/36-Foot Wooden Boxcar

HO Scale



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Thank you for purchasing this kit!

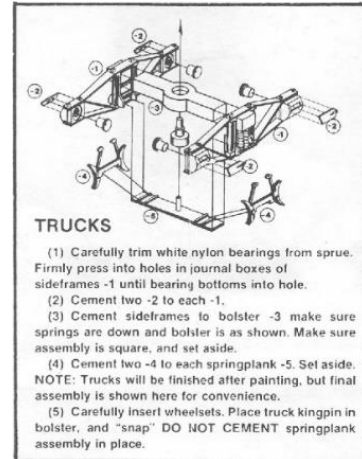
The enclosed flatcar is fictional but based on some real-world information.

Supplied are the basic directions. For more tips and some additional instructions, please see conowingomodels.com

BUILDING

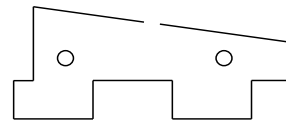
1. Start out by removing the frame from its carrier. Note there is a side with lines that denote where the bolsters and queenposts go. This is the underside. You'll also note where the coupler boxes go. Plan out where you'll want to add weights. The NMRA, in RP-20 (essentially) states that the 24-footer should weigh 2.75 ounces when completed and the 36-footer should weigh 3.875 ounces. An unweighted flat car example I used weighed less than .5 ounces. If you're not liking the options, I'd suggest adding a permanent load weight. Failure to add weight will result in a very uncooperative car that doesn't stay on the tracks.

2. Assemble the trucks and coupler boxes (some kits) as shown below.

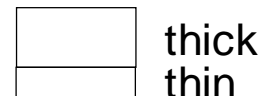


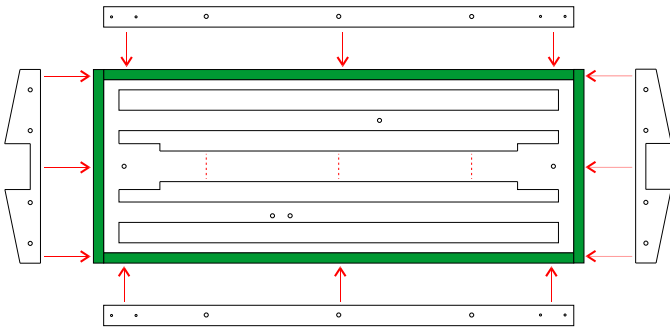
(courtesy Tichy Train Group)

3. Paint the NBWs, stake pockets, ladders, brake parts and trucks as desired. See step 17 for illustration.
4. Take the included needle and run it through the holes in the end and side pieces as well as the truss rod holes to ensure that there is no glue or errant laser residue in them.
5. Cut the stripwood for the decking to 9.5 scale feet wide or 1 5/16 inches. You should compare them to the width of the frame and make them slightly larger. Scrape the pieces with a hobby knife, scuff them with a sanding block, cut the edges off of and add nail holes as you feel appropriate.
6. Carefully cut the angled bolster pieces out and glue them together in pairs. You will end up with four pairs. Run the needle through the holes in the bolsters again to ensure they are properly aligned.



You can glue the smaller square bolster pieces together, using one thick and one thin piece for each. You will end up with two pieces.

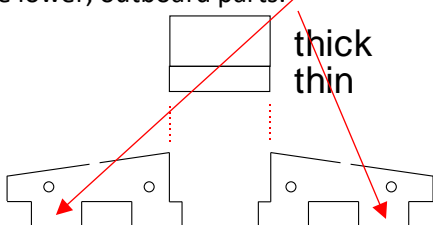




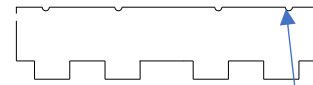
7. Glue the side rails into place before the end pieces. Ensure the side rails either fit snugly against where the decking will go. The end pieces should fit snugly against the side rails and the cut out on each end should match up to allow for the coupler box to fit.



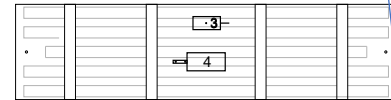
8. With the top side is up, glue down the stripwood as shown. We covered both end pieces and side rails. Ensure you leave a small gap between the pieces to prevent buckling when you paint/stain it. It looks better with spaces as well. A few not-so-perfectly-aligned pieces add life to it.
9. When finished adding the decking, Flip the bottom side up and flatten with a heavy object to prevent warping during the drying process. Be sure not to crush the side or end pieces. You may want to consider clamping the corners to something solid instead.
10. Consider whether or not you want to build the boxcar and then the understructure. If you choose to hold off on the understructure, skip to step 20 and then return to step 11.
11. Glue the bolsters and queen post(s) into place and secure with clamps. The side pieces of the bolsters are notched to fit the under decking of the car. Ensure you use one of each thickness on the bolster center pieces. If there are any alignment issues, cut off the lower, outboard parts.



The 24-footer gets the single, wooden queenpost while the 36-footer has the option of two wooden posts or two flat basswood pieces with plastic posts.

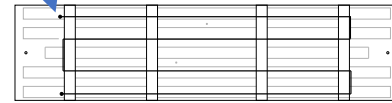


12. Included is the standard Westinghouse K-brake system. I'm not that familiar with the system. If you are, please enlighten us on the Facebook page. Glue the brake reservoir (4), brake cylinder (3) and any other desired details into place on the underside. There are notches where they need to go.



(36-foot car shown)

13. Run the included needle through the holes in the bolsters to ensure a clear pathway. The laser and glue can clog those when you least want it to.
14. Take the length of thread and put an overhand knot in one end (I used three and a dab of CA at the first bolster because the thread is thin) and gently thread it through the bolsters and queenposts as shown below. The wooden queensposts have notches for the truss rods to pass over. Initially, concentrate on just getting it threaded and then tighten it.



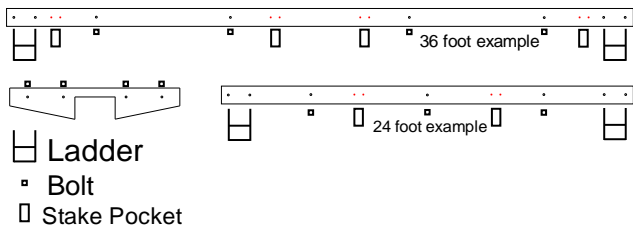
(36-foot car shown)

15. Once taut, apply a drop of CA to the thread at the end of the threading to hold it in place. I hung the whole assembly from my workbench with a small clamp while it dries to keep tension on it. When it's dry, add the final knot (or several) as close to the bolster as you can get it and cut the excess. A drop of glue on each rod can be used to simulate turnbuckles. Tichytraingroup.com also produces turnbuckles as part number 8021.
16. Trim the deck boards as desired. The under sides, side rails and end pieces can be painted/stained and lettered at this point, or you can choose to do so later if you so choose. I did most of step 16 at this point.
17. Install the coupler boxes. I recommend applying some CA to the frame where the coupler boxes will

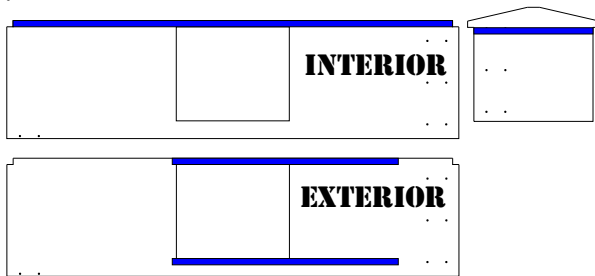
go, followed by appropriate screws (unfortunately, the screws included with some kits are for the trucks and are too long for this application).

18. Install the trucks at this time using the screws and insulating fiber washers (some kits). For those unfamiliar, the washers go between the truck and bolster to smoothen truck movement. Tichy Arch Bar trucks (some kits) can now have the spring planks installed. Despite the instructions, I've found that a dab of CA helps keep the spring planks in place.

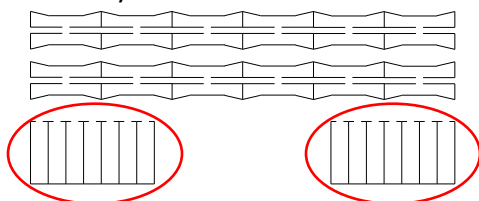
19. Glue the bolts into place. Either CA or white/wood glue seems to work equally well. The bolts have cut holes where their respective parts fit. Diagram below shows stake pockets and stirrups, which do not go on the boxcar.



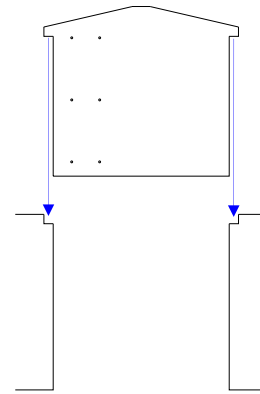
20. Brace the walls as shown below. (X2) I recommend fitting the doors snugly for proper alignment. Use the 1/16 x 1/16 pieces for the exterior and 1/8 x 1/8 pieces for the interior.



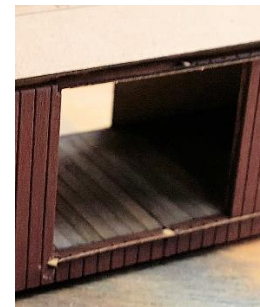
21. Remove the roof supports (circled below) from their carrier and paint them. (Most likely brown) They are a group of small rectangles. Do the same for the walkway.



22. Match (but do not glue yet) the end walls to the side walls. (Side walls shown sideways for clarity). The side wall tabs will fit in the notches. Use a rubber band to hold the four walls together.



23. Place the walls over the flat car so that the sides hang over. Match up the top of the door slides with the floor of the flat car as shown below. (prototype photo)



24. Once in place, then glue along the inside corners only. This ensures a proper fit on the corners. You may also choose to glue the side walls to the floor. I used a quick-drying CA, but that isn't necessary. You might also add some bracing in the inside corners if you have some extra.

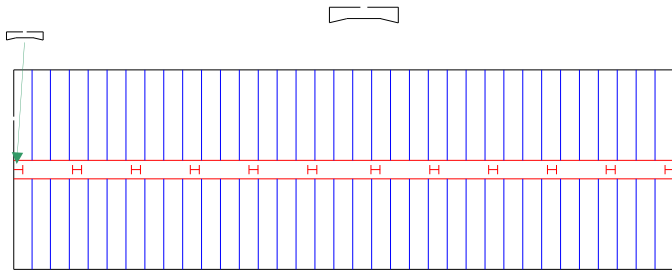
25. You should install any weights (not included) at this time. Reference step 1 for proper weights.

26. While you're waiting for the car to dry, turn your attention to the roof. Bend along the two scribed lines that parallel the walkway. This will add rigidity while you're painting the roof.

27. Paint the roof either a metal color or you could use construction paper (not included) to add a tarpaper roof.

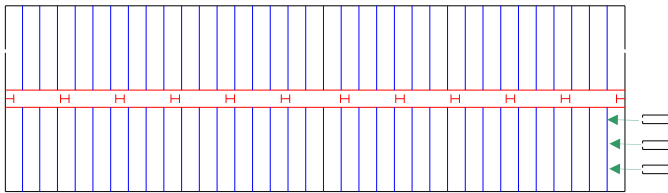
28. Once dry, install the roof. Ensure all sides are glued down.

29. Glue the roof supports onto the Hs as shown below. The "rounded" side should straddle the center. (Only one shown for clarity.)

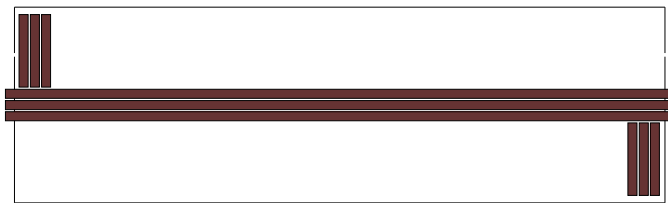


30. Size and glue down the stripwood on the roof supports, allowing them to slightly overlap the ends of the boxcar. Don't apply stripwood to the ladder accesses just yet. See step 12 for an example.

31. Glue down the roof supports for the ladder accesses on the right forward and left aft sides of the roof. (Only left aft shown)



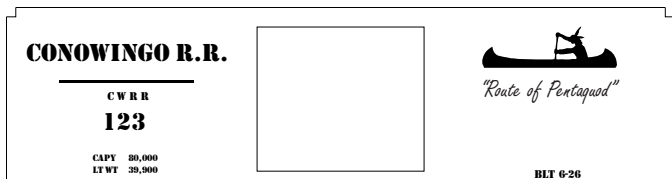
32. Size and glue down the stripwood on the ladder accesses



33. Paint/stain the boxcar as desired. I used Apple Barrel Chocolate Bar Brown.

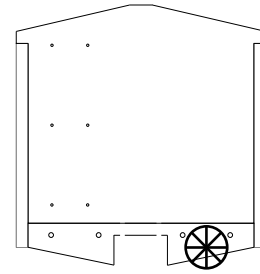
34. Cut and install the ladder pieces as required. The holes should match up with the ladders. The short ladders on the left outside have an engraved top hole to serve as a mark for where to cut the top of the ladder.

35. Apply decals as below if you choose to do so.



36. Install the doors, NBWs, brake wheel, trucks and couplers. On the prototype, I installed the brake

wheel as shown below. Feel free to place it elsewhere, such as on top of the boxcar ends.



37. Cut and glue the narrow stripwood to the doors. I went with one piece across the middle, but you may want to make a "Z" or something else. Apply the hinges to the top and door latch about mid-way on the left side. There are several latches and hinges to choose from.

38. Once dry, install and paint as you desire.

39. Apply any finishing touches and enjoy!

See Conowingomodels.com for more unique model railroad products.

Like the design? Want to see this car developed into other things? Please drop me an e-mail and/ or visit the Facebook page to see the latest development with it.

If there are any parts missing, please e-mail me conowingomodels@yahoo.com and I'll get those parts headed your way. I strive for a perfect kit, but mistakes do happen. I apologize if this happens.

Many thanks to Steve Milley, Jeff Grove and Mark Schreier for their help! Additional thanks to Don Tichy for all the parts and diagrams!