Caboose #1

O/On30 Scale

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Thank you for purchasing this kit!

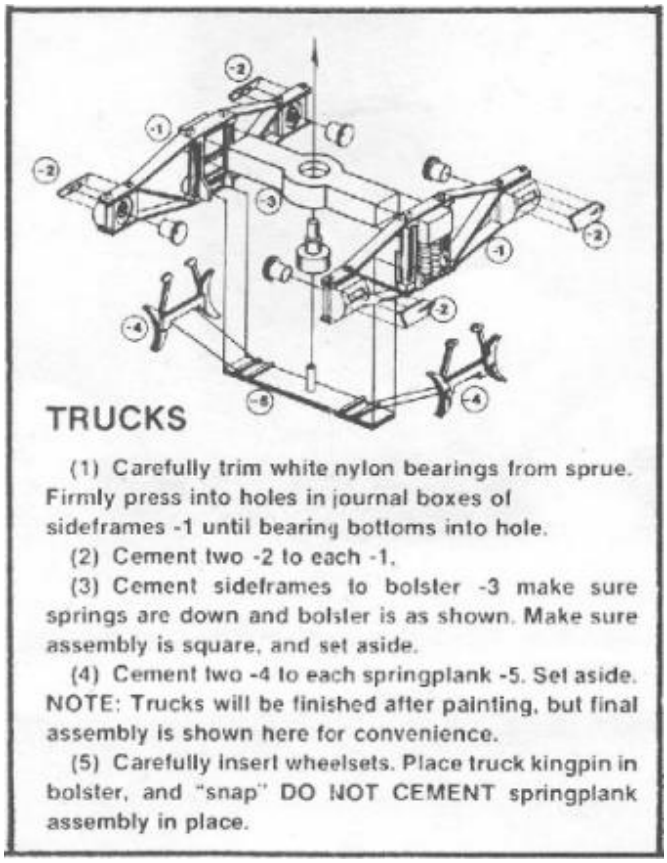
The enclosed flatcar is fictional but based on some real-world information.

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

BUILDING

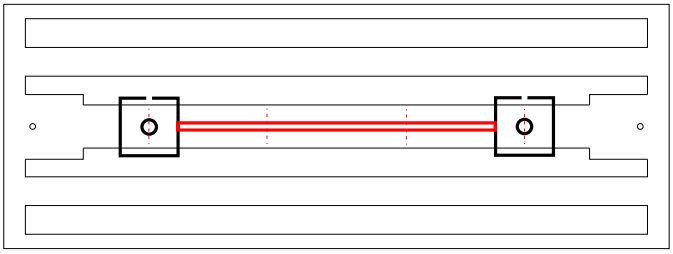
1. Start out by removing the frame from its carrier. Note there is a side with lines that denote where the bolsters and queen posts go. This is the underside. You'll also note where the coupler boxes go. Plan out where you'll want to add weights. The NMRA, in RP-20 (essentially) states that the 24-footer should weigh 10 ounces when. An unweighted example I used weighed less than .5 ounces. If you're not liking the options, We suggest adding a permanent load weight. Failure to add weight will result in a very uncooperative car that doesn't stay on the tracks. We recently found **tungsten putty**. It's available from Amazon, but can probably be found elsewhere. It works well on the rolling stock. Once you've applied the decking, bolsters and queen post(s), fill in the gaps on the main body with tungsten putty.

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.



4. Size, cut and glue down the 1/8 stripwood to the underside of the body. Stripwood shown in red. You will need to use bolster centers to determine length. It should be about 3.7 inches long. (Bolster centers shown exaggerated in black.)

5. We recommend that if you are planning on staining the car, you stain the frame now. Add a lot of weight to flatten it and let it sit for 24 hours before continuing any step that utilizes the frame.

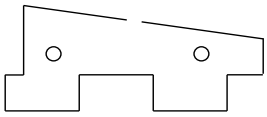
6. Stain the stripwood for the decking and flatten until dry.

7. 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.

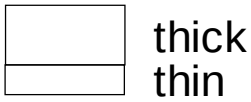
8. Cut the stripwood for the decking. Each piece should be on the high side of 2 inches long. Use Scrape the pieces with a hobby knife, scuff them with a sanding block, cut the edges off of and add nail holes as you feel appropriate.

9. 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.

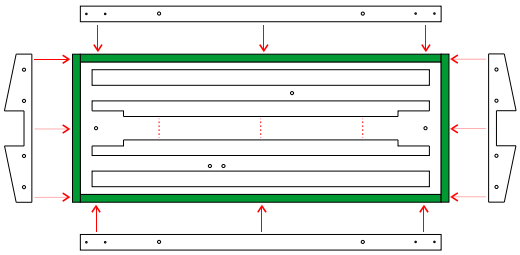
   One interesting technique we tried and it works is to leave the bolsters on the carrier, trimming the carrier as shown below and threading the pieces that way. See step 16 for more info.



10. You can now stack the smaller square bolster center pieces if you are using the metal Kadee or Tichy trucks.
    If you are using other trucks, wheels or are straight O scale, you will need to use the different thickness shims to get the desired height later when the rest of the kit is built.



    Use one thick and one thin piece for each. Obviously, you will end up with two pieces.

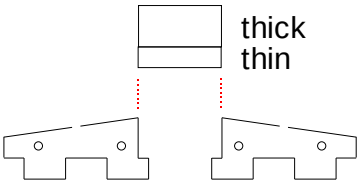


11. Select the end pieces appropriate for your build by looking at the cut outs for the coupler pockets and matching them with the coupler pockets you plan on using. (HO scale diagram shown above)
    Glue the side rails into place before the end pieces. Ensure the side rails either fit snugly against the decking or under it, depending on your decision for overhang or not. 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 pocket to fit.

12. Once dry, with the top side up, glue down the stripwood as shown. Cover both end pieces and side rails. Ensure you leave a small gap between the pieces to prevent buckling when you paint/stain it. A few not-so-perfectly-aligned pieces add life to it.

13. 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.

14. Once dry, glue the bolsters and queen posts into place and secure with clamps. The side pieces of the bolsters are notched to fit the under decking of the car. Reference step 10 regarding the bolster centers.



The 24-footer gets two wooden posts. There is a marked area on the bottom for them.

15. If you have a brake system to install, now is the time to do the installation. We did not include parts for it. If there is enough interest, we could potentially seek out a supplier for them in the future.

16. 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.

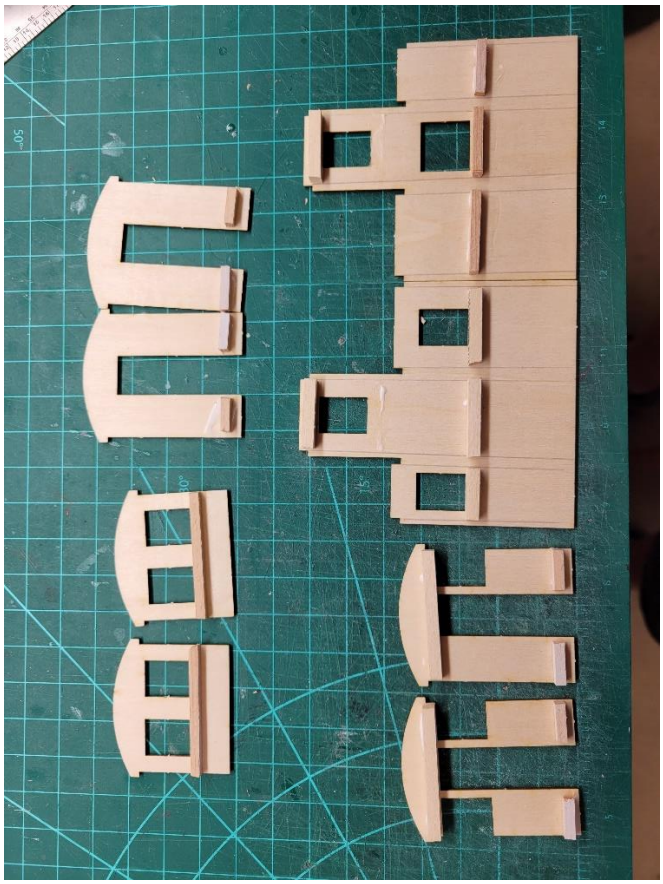
17. Take the length of thread and put an overhand knot in one end (I used three and a dab of CA at the first bolster because the thread is thin) and gently thread it through the bolsters and queen posts as shown below. The wooden queen posts have notches for the truss rods to pass over. Initially, concentrate on just getting it threaded and then tighten it.

18. Once taut, apply a drop of CA to the thread at the end of the threading to hold it in place. We hung the whole assembly from the 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.

19. Trim the deck boards as desired. Keep in mind that the caboose will require a tight trim where it contacts the deck. The under sides, side rails and end pieces can be further painted/stained at this point, or you can choose to do so later if you so choose.

    If the screws don't hold, add a drop or two of CA into the holes and try again.

20. Using a pencil, make guides that match the photo below. The goal is to deconflict bracing where the walls contact each other.
    Glue bracing into place as shown below. Use the 1/8 stripwood for all, except for the two pieces on the upper right and lower left. (The design of the lower left pieces was changed.) Use 1/16 stripwood for those.

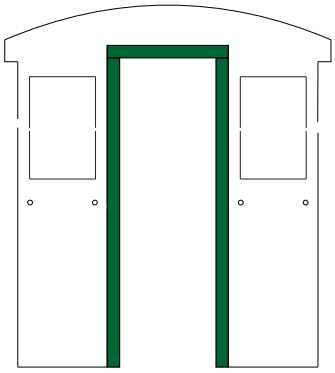


21. If you are using the supplied tarpaper roof, prepare the construction paper. If you are unfamiliar with how to do this, go to Jason Jensen Trains on Youtube and look for episode 010.

22. One product we highly recommend Adlake Marker Lights by Tomar Industries. If you have a set, now is the time to figure out how you will install them. The same goes for any internal lighting. A nano warm white LED (not included) would look great in the cupola area. You can purchase a caboose lighting kit from us that has the required parts.

23. Assemble the doors and windows.
To assemble the doors, glue the detailed piece of laserboard on top of the larger piece of laserboard so that the bottoms match up and the window opening is even on both sides.
Once painted, glued and dry, glue the acetate window into place behind the opening.

24. Use some 1/16 stripwood to form the door frame around the door openings on the external walls as shown below. Do this for both doors.

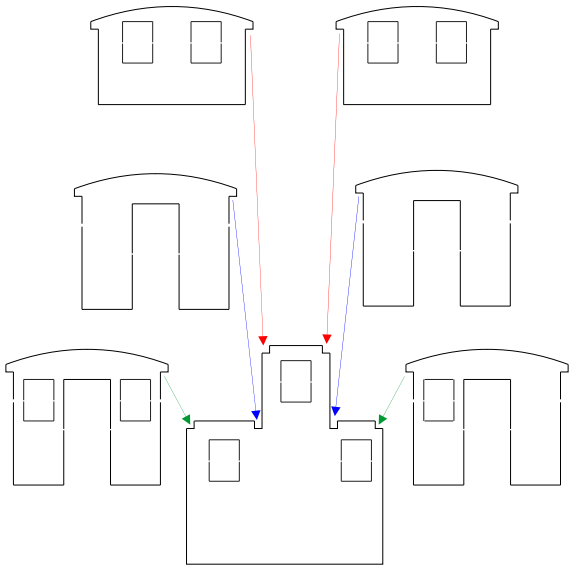


25. Glue the grabirons into place on the end walls. We recommend using a scrap piece of 1/8 stripwood to hold the grabirons at a realistic distance.

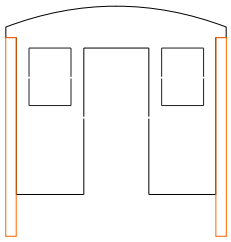
26. Glue the doors into place. They may require trimming to fit, depending on the spacing of your bracing.

27. Once everything is dry, assemble the walls as follows;

    a. Place the outer walls parallel to each other. I've found that holding them in your hand can be cumbersome, but seems to work the best. The diagram below shows which pieces go where in relation to the left side wall notches. The four inside walls can be interchanged for variation. The photo at the bottom shows how they should look upside down with the roof installed.(not yet)



    b. Using a fast-drying adhesive, glue the inner walls and cupola pieces into place. Cupola not shown for clarity. Ensure the walls fit together tightly. Use the flat car for additional support and to ensure the pieces fit properly.



28. Once dry, paint/stain the caboose walls as desired. Ensure you finish the ends of the outer walls as they will be exposed.

29. Paint/stain the undersides (scribe side) of the roofing, ensuring you get the edges as well.

30. Install the doors and windows.

31. Test fit the roofing pieces. The scribe side goes down. The largest piece goes on the front. The medium piece goes in the rear and the smallest piece goes over the cupola.

32. Decide where you want the smoke jack and drill the hole accordingly. Make any adjustments you desire to the roof.

33. Glue down the roofing pieces. You may need rubber bands to secure the roof to the walls while the glue dries

34. Once the roofing is dry, you can apply the tarpaper roof using a glue of your choice. It may make sense to thin down some of the width so the pieces look uniform. Whether or not to wrap the edges is completely up to you.

a. For the forward and aft-most pieces, start at the outside and work your way towards the cupola.
b. For the cupola itself, add a strip on the front and back, then overlap the two with a center piece.
c. For the smoke jack, cut out a rounded piece with a hole in the middle for the smoke jack. You'll probably want to elongate the hole so the jack fits through if you're installing it on an angle. If you want supports on your smoke jack, use the leftover string from the truss rods.
d. Install the smoke jack and tarpaper piece.
e. You may want to install patches on the roof to add character.

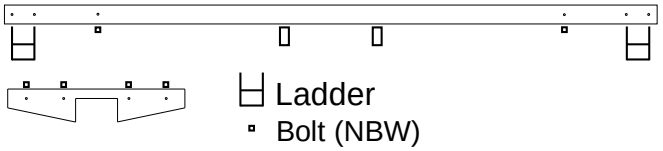
35. Figure out where you are going to install the caboose portion on the flat car and glue the weights (not included) into place.

36. Glue the caboose in place on the flat car.

37. Install the coupler boxes. We 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).

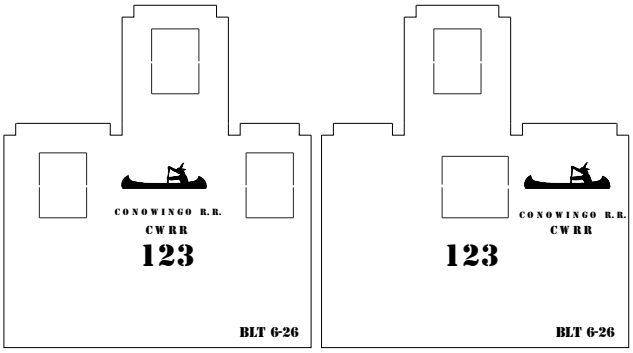
38. Install the trucks at this time using the screws and insulating fiber washers (some kits). For those unfamiliar, the washers go between the truck and bolster to smoothen truck movement. Tichy Arch Bar trucks (some kits) can now have the spring planks installed. Despite the instructions, I've found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

39. Install the bolts and ladders using glue. Either CA or white/wood glue seems to work equally well. The bolts have holes cut for them. There are also holes cut to serve as guides for the ladders.



40. For the brake wheel run the pin through the brake wheel. Glue the wheel and rod to the wood piece, sharpened end down and in the notch. We glued ours to the end of the car. Different variations are highly encouraged!

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



42. Apply any finishing touches and enjoy!

Many thanks to my family, Mark Schreier, Jeff Grove, Steve Milley and Greg Cassidy for their help with this endeavor.

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for more exciting, funky buildings and rolling stock for your model railroad!