

Conowingo Models



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Chris Coarse

*Wood Craftsman Kits For
Your Model Railroad*



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- Background

- Variants

- Assembly

- Paint detail parts
- Prepare the decking
- Body bracing and assembly
- Coupler box assembly
- Cut and install deck boards

Break Time

- Bolster assembly and installation
- Install queen post
- Install brake system
- Truss rod installation
- Install detail parts
- Install trucks and couplers
- Finishing touches
- Weathering

24 Foot Wood Flatcar in HO/HOn3 Build Along Clinic January 27, 2023



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About Me



- Air National Guard C-130H Loadmaster
- Married with two daughters
- Residing in Conowingo, MD – 3 miles from the dam
- Logo is Pentaquod from James Michener's novel "Chesapeake"
- Tyco Silver Streak train set as a kid
- Returned to model railroading in 2012 thanks to Polar Express
- Conowingo Models was started in 2019
- Will eventually model the Rutland Railroad



**RUTLAND
RAILROAD**





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24 Foot Wood Flatcar Build Along Clinic

- Basis for all of our rolling stock product line
- Available for HO and HOn3
- Kit is constantly being refined
- Designed for ease of building
- We had you bring a bunch of tools, but it can be built using only four tools.





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24 foot flatcar **Also in On30**



36 foot flatcar/ logging/ gondola



Bobber boxcar



24 foot boxcar



36 foot boxcar



Caboose #1 **Also in On30**



Caboose #2



Caboose #3



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But wait... There's more!



24 foot wooden tank car



36 foot wooden tank car



Tool car



Depressed center flatcar



Snowplow

Plus many more....!

Including N-scale

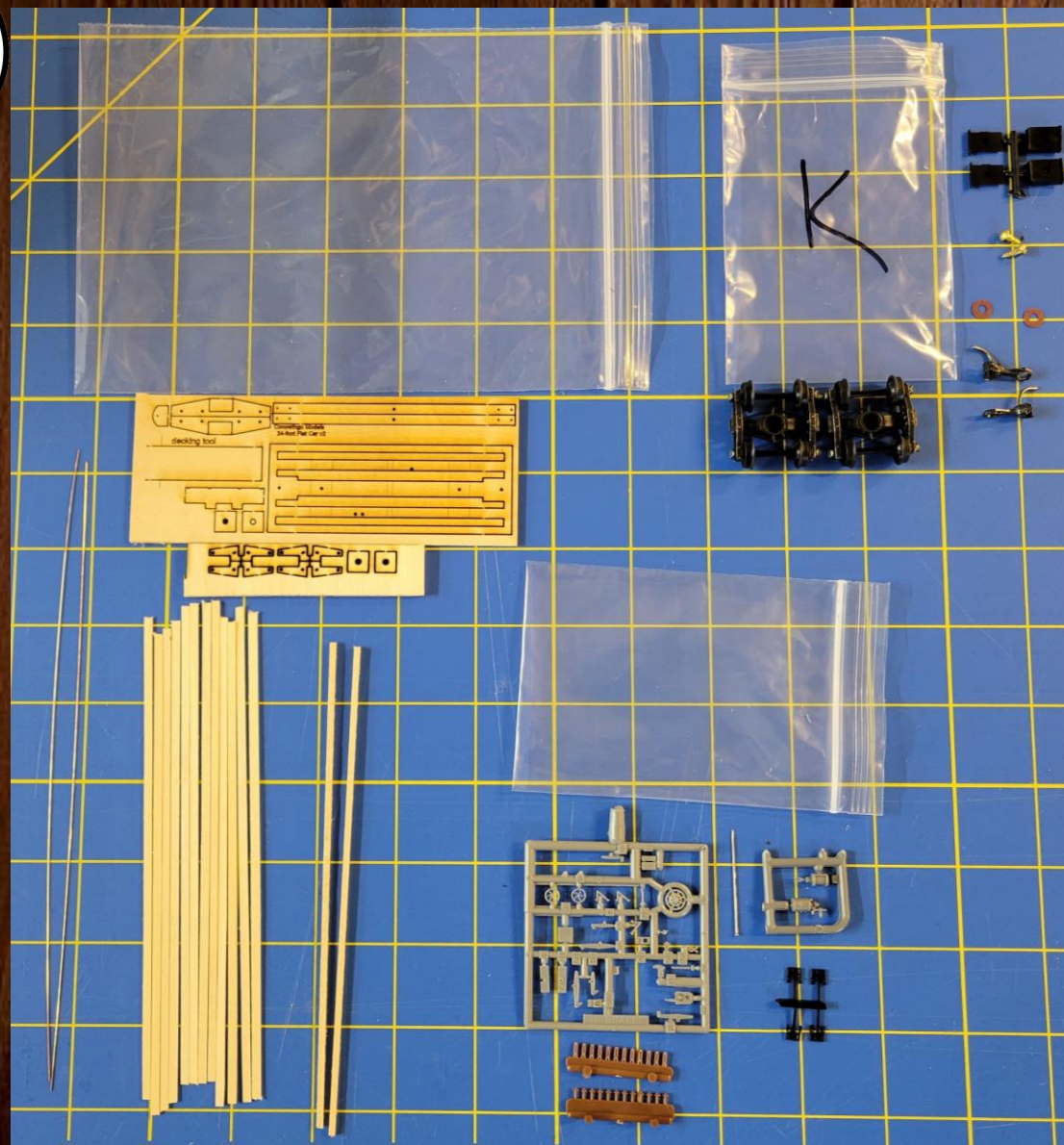


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1/16 Basswood body sheet
1/8 Basswood bolsters

12 – 1/32 x 3/32 stripwood
2 – 1/16 x 1/16 stripwood

Kit Contents



Trucks and Couplers

2 pr- Kadee Coupler Boxes
2 - 2/56 Screws
2 – Fiber Washers
2 – Kadee Trucks
2 – Kadee 148 Couplers

1 set - Tichy K-Brakes
1 set – Tichy turnbuckles
1 set – Tichy NBWs
4 – Tichy Stirrups
1 - Needle

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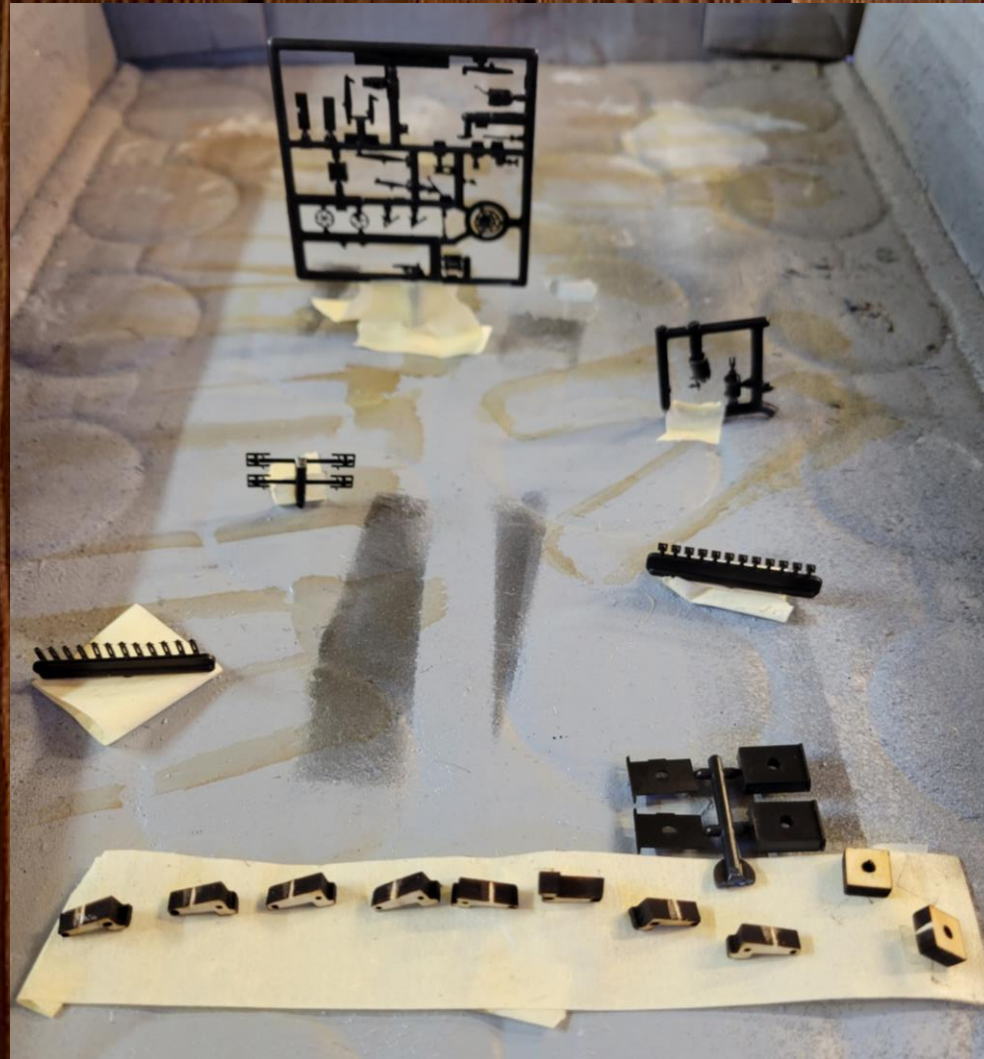


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Paint all items black

- Turnbuckles
- Brake system
- Brake wheel
- NBWs (Nut, Bolt, Washers)
- Coupler boxes
- Bolsters (8 side pieces and four center pieces, 2=1/16, 2=1/8)
- Stirrups

Painting Paint detail parts



DO NOT PAINT

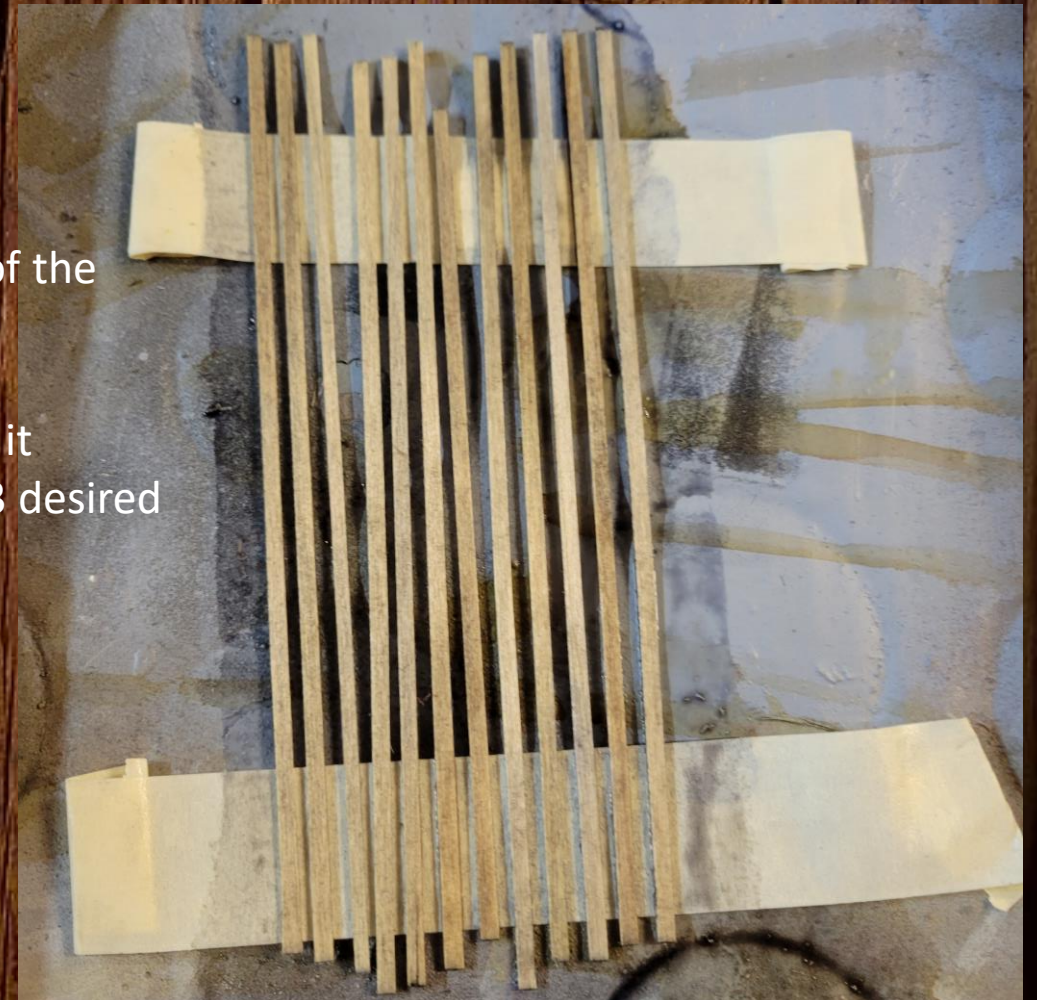
- Needle
- Couplers
- Trucks
- Wire
- Stripwood
- Body



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- Loop two pieces of tape onto your paint area large enough to hold 9 of the pieces of stripwood
- Add the stripwood to the tape
- Using your hobby knife and/or sanding sponge, scuff the wood to age it
- QUICKLY brush on desired layers of Driftwood and Grey Blue stain. 2-3 desired
- Add weights to keep it from warping

Paint Prep Prepare the decking

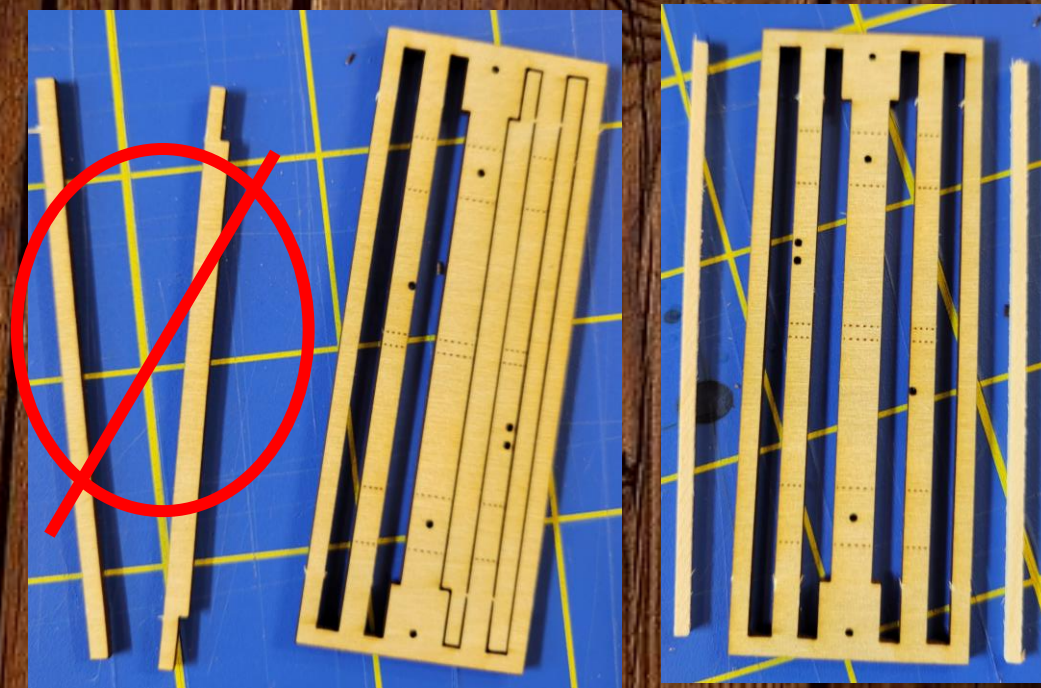




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- Remove the body from the carrier
 - Note there is a side with lines that denote where the bolsters and queen post go. This is the underside
 - Remove the four longitudinal pieces of wood and discard
 - Cut two pieces of 1/16 stripwood to the length of the body
 - Using CA, glue the cut stripwood on top of the sides.
- This forms your bracing .

Assembly Body Bracing and Assembly

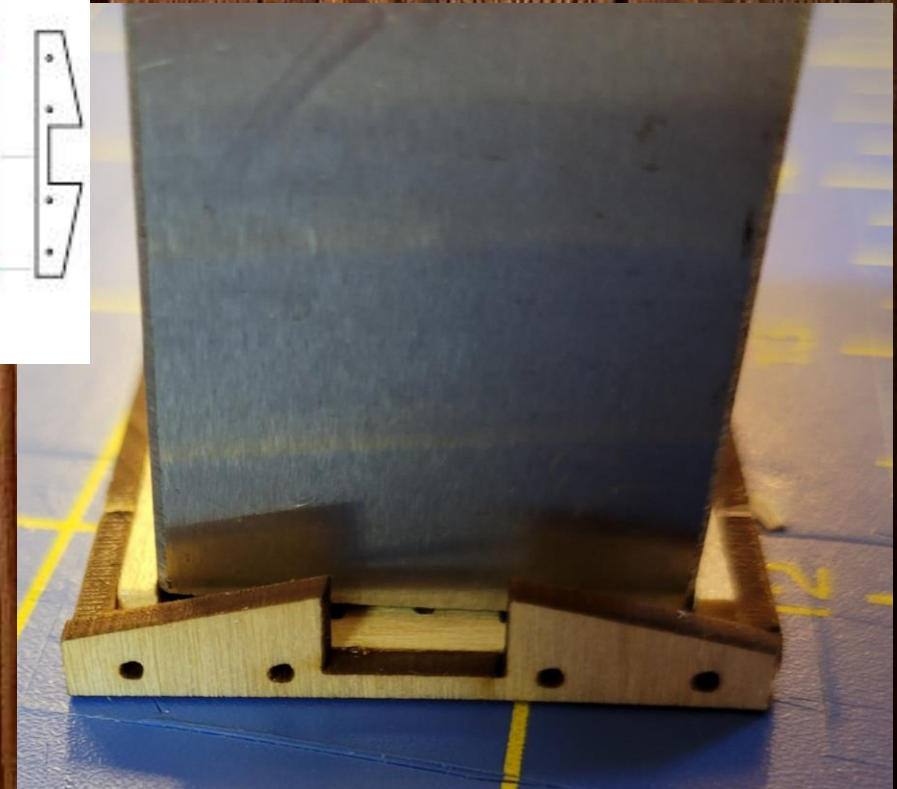
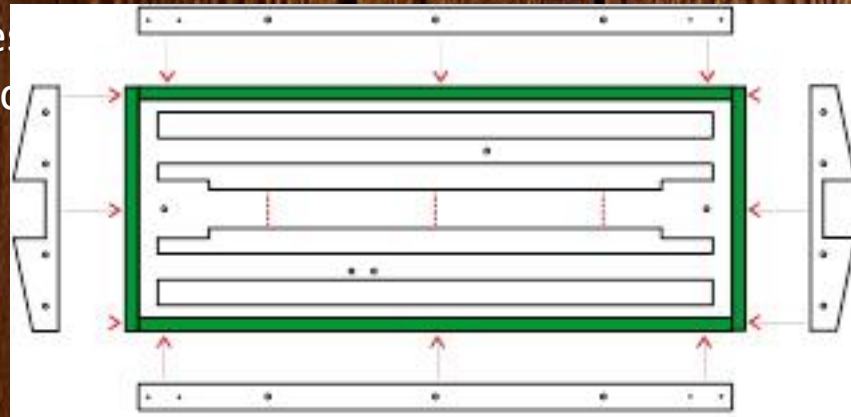




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- Using CA, glue the end pieces and sides
- Weigh down car to help sides set vertical

Assembly Body Bracing and Assembly

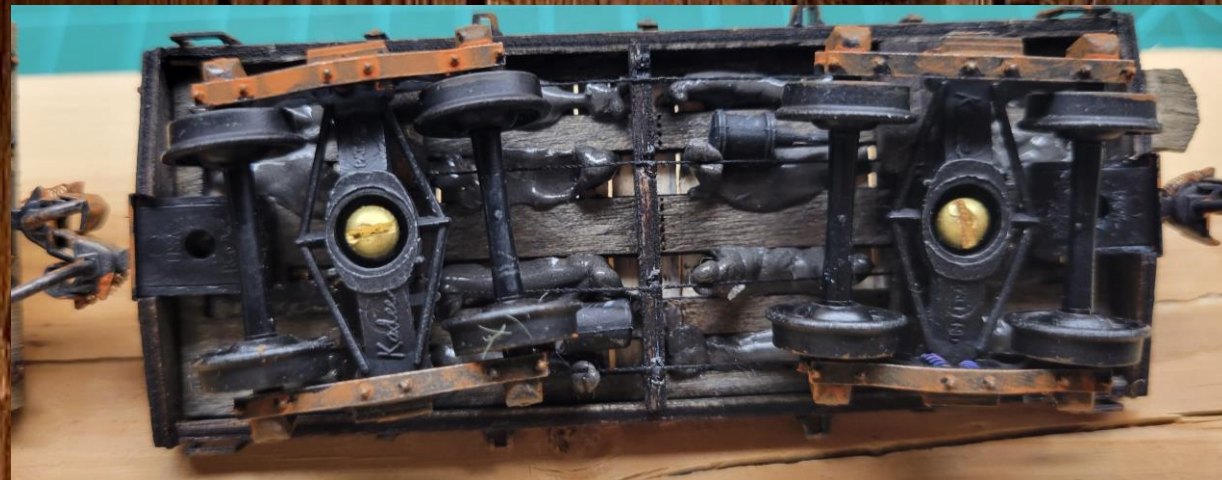


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Weight Planning



- 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.
 - We think the NMRA standard is a bit overkill, but we haven't run these day-to-day and defer to the experts.
- An unweighted example we used weighs .5 ounce with Tichy trucks installed. These will have Kadee trucks installed, which weigh slightly more.
- Failure to add weight will result in a very uncooperative car that doesn't stay on the tracks.
 - Recommend tungsten putty for weights
 - Alternatively, a permanent load can be added
 - Small fishing weights are an idea, but probably not a good one as they can interfere with the freedom of movement of the trucks

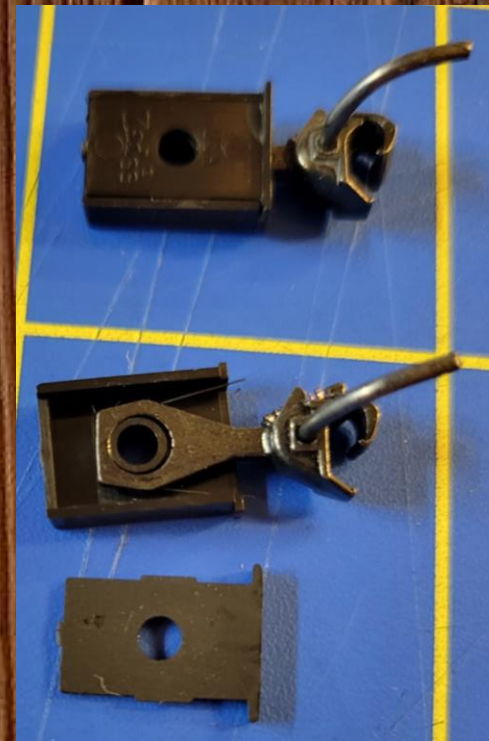




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- Insert the coupler into the box, with the flat side of the box down and the brake hose sticking up
- Snap the lid in place. The lip on the lid faces up

Assembly Coupler Box Assembly



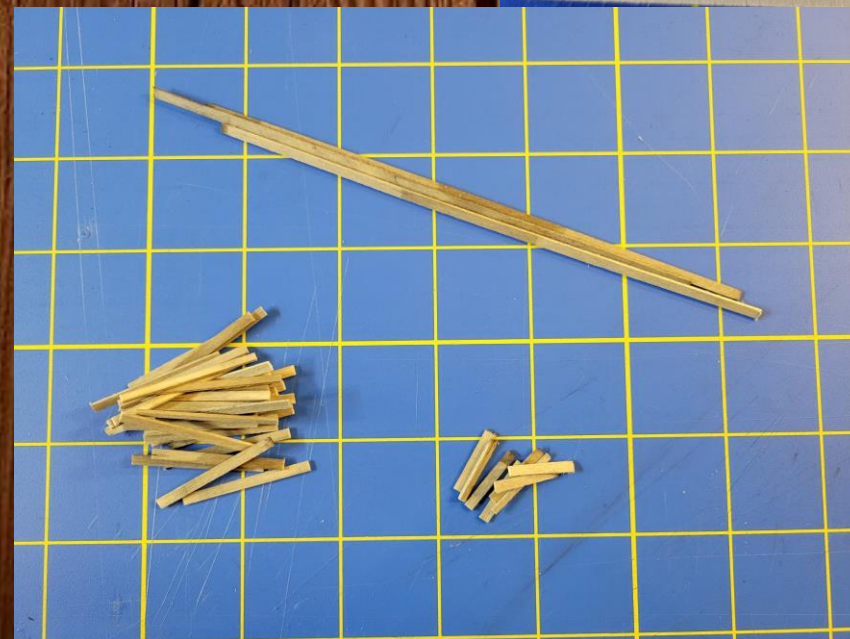
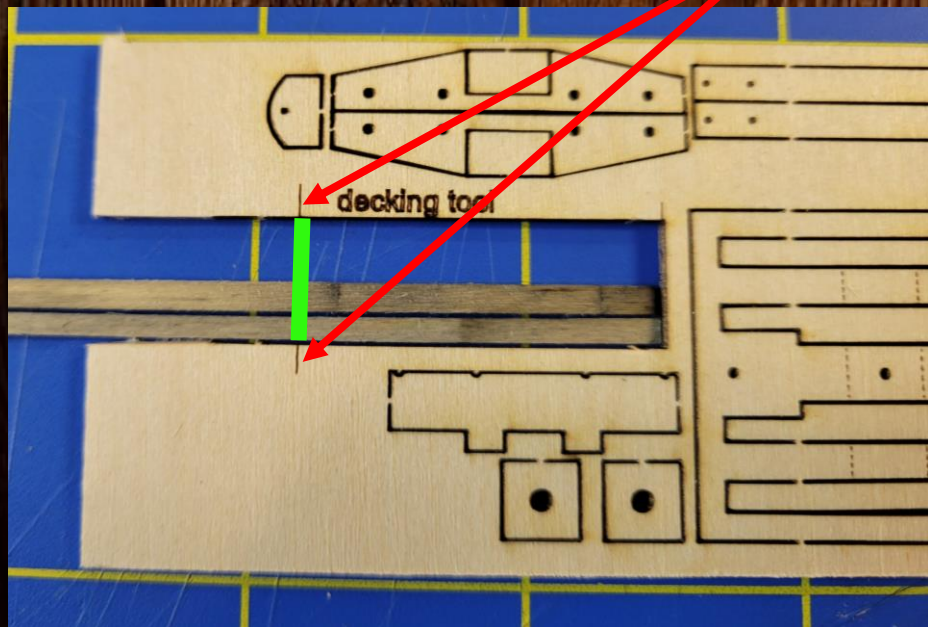
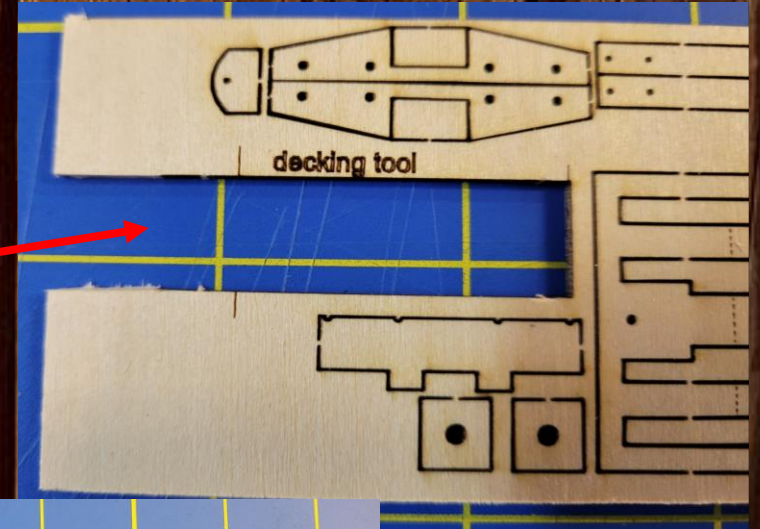
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- Carefully remove the stripwood from the masking tape
- Cut out the excess wood from the decking tool
- Using the provided tool, cut each piece to fit

Assembly Deck board Installation



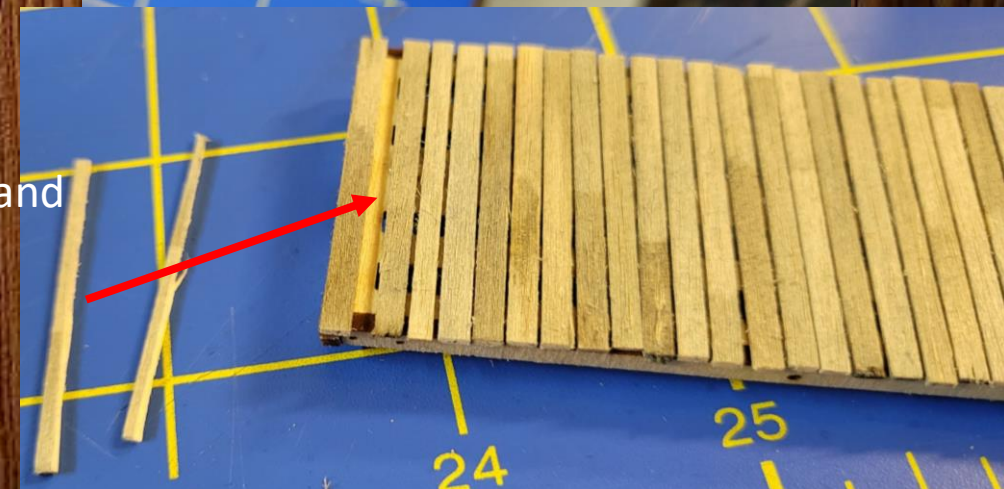
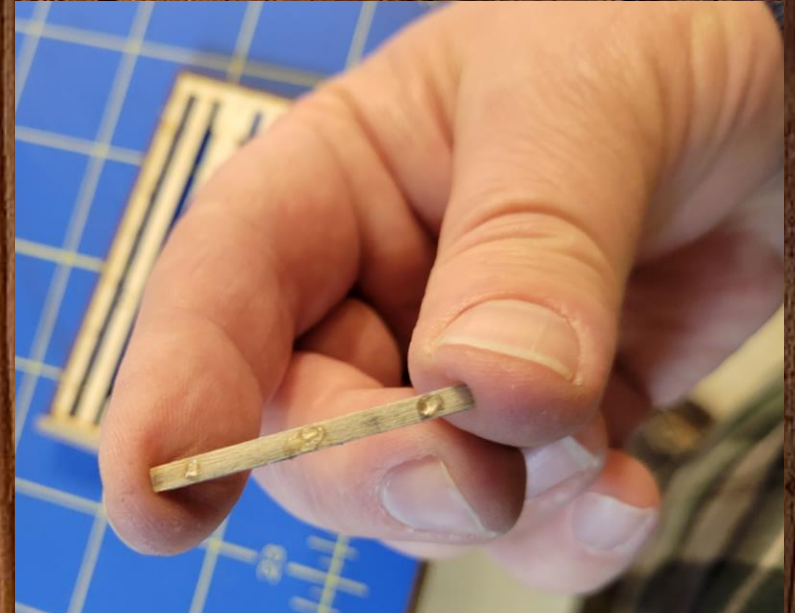


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- Repeat the following steps one board at a time until you have finished the deck- This is because we didn't have the luxury of preparing the deck and waiting for it to dry. You don't want unpainted wood showing through the boards
 - Apply glue to the underside of the deck board in three spots – the sides and center
 - Going from one end to the other, apply the deck boards side to side, leaving a little bit of room for expansion and contraction. It also ages and weathers the car
 - When you are getting close to finishing, start from the opposite end and work your way inward. You will probably have to cut one board to fit
- Once the deck is covered, flip the body over and add weights

*If you are assembling this at home, we recommend you paint the top of the deck with a solvent-based light grey color (to prevent warping) and glue the deck down.

Assembly Deck Board Installation





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BREAK TIME!!!



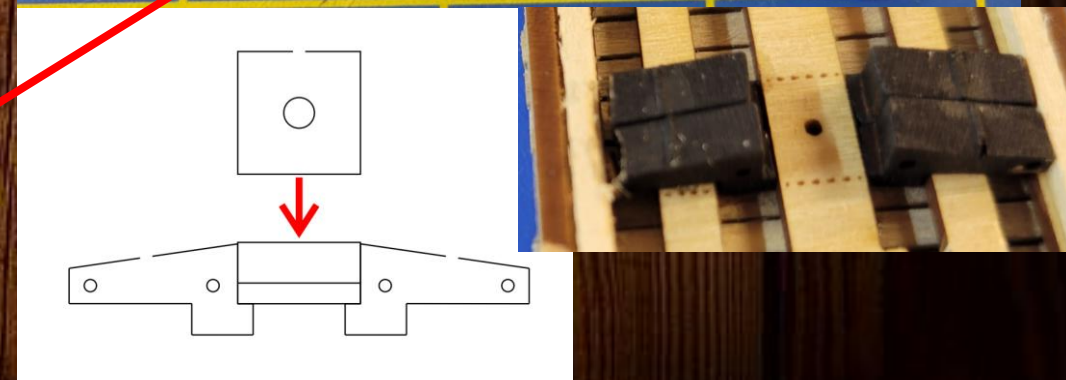
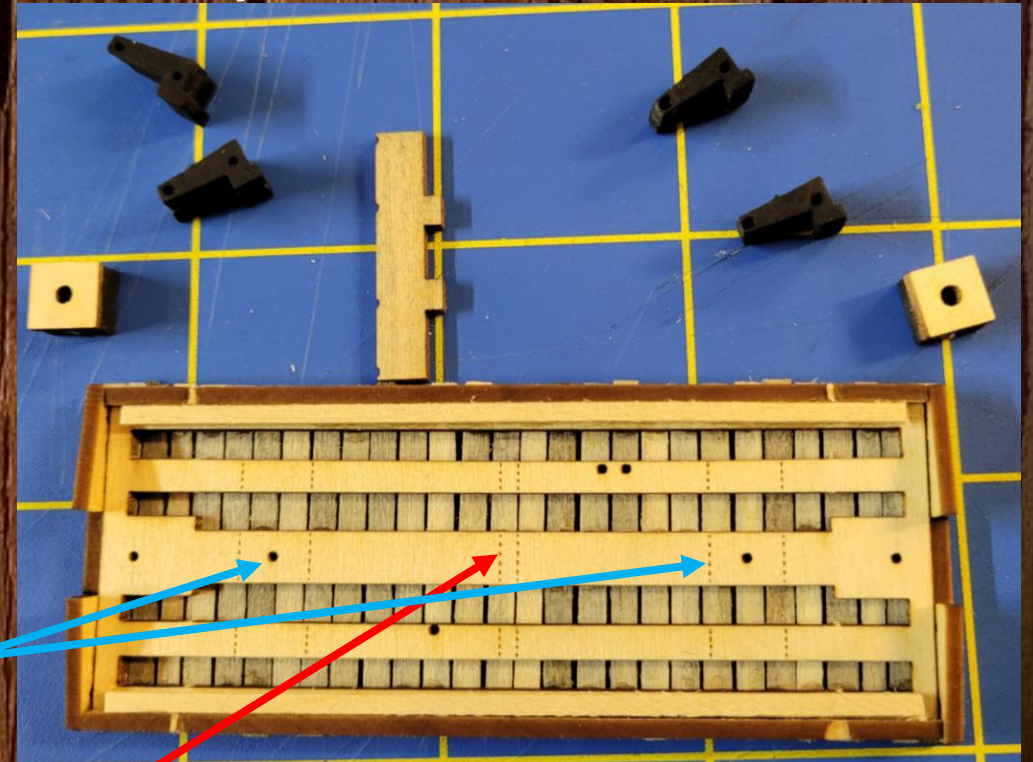


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- Locate the eight bolster half pieces you painted earlier
- Run the needle through each to ensure they are free of debris
- Pair them up and glue together, ensuring they are straight.
- Run the needle through each assembly again, to ensure you didn't block any holes
- Fit and glue the bolster side pieces into place on the body, between the dash marked lines. The notches will sit between the longitudinal decking pieces
- Fit and glue the bolster center pieces into place on the body with the thinner piece on the bottom (closest towards the body)
- ***Install the queen post between the dashed lines in the center. The notches will sit between the longitudinal decking pieces
- *** You may choose to thread the truss rods through the bolsters prior to adding the queen post.

Assembly Bolster Assembly and Installation

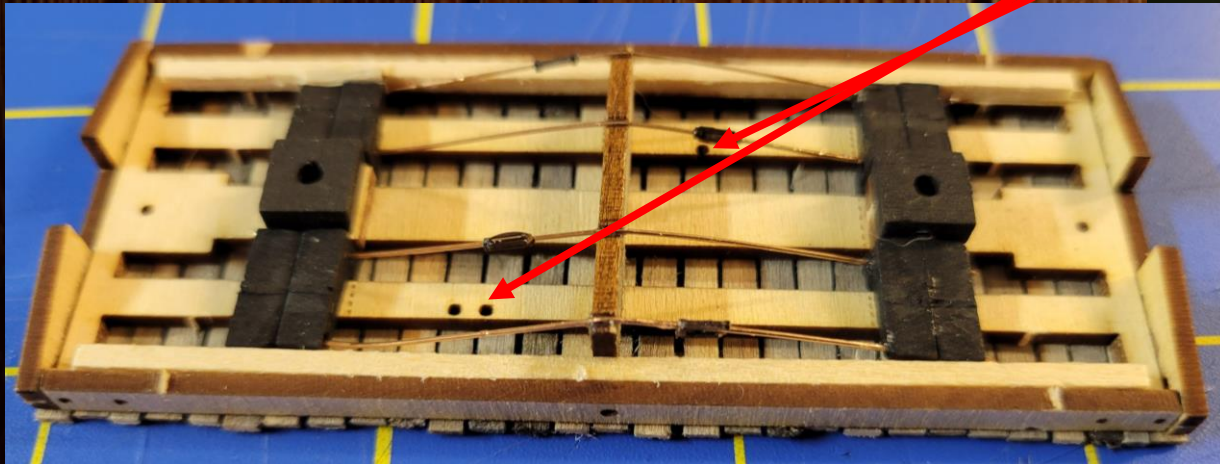
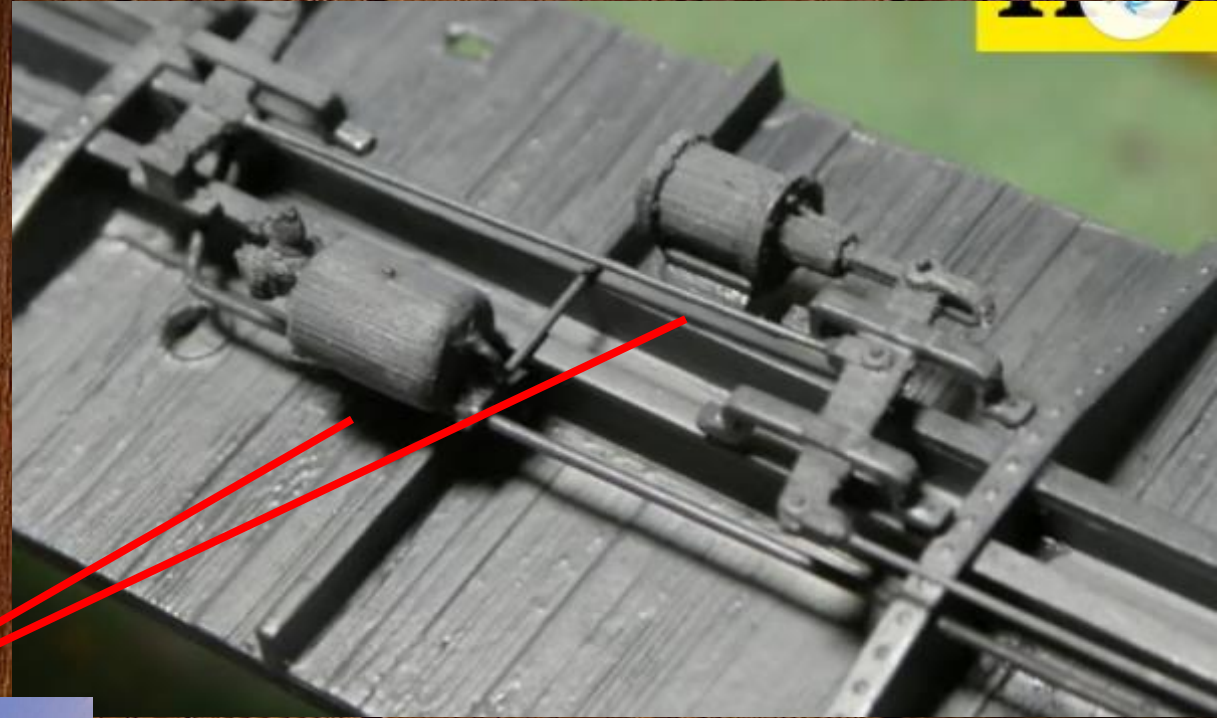




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- The Tichy brake system that is supplied is the Westinghouse Split-K brake style
- Install the brake cylinder and reservoir as desired. There are precut holes for them to be installed. Be careful as this can interfere with the operation of the trucks. They can be cut down to fit.
- Spoiler Alert ** Part of your homework will be to finish plumbing the brake system as desired

Assembly Brake System Installation





Assembly Truss Rod Installation



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- Mark the middle of each piece of wire with a Sharpie. Adding a turnbuckle to the cut end won't work due to tight tolerances.
- Cut both pieces of wire in half using a pair of wire cutters
- The following steps you will repeat 3 times (for a total of 4 times)
 - Bend the end of the wire with the Sharpie mark as close as you can to the end using pliers or a similar tool. The bend should be 90°. This is to add a stopper to the end
 - Route the end through an unoccupied bolster, moving from the outside inward
 - Add a turnbuckle to the wire, but have it between the wired bolster and the queen post
 - Route the wire over the top of the queen post, being mindful of where you want your turnbuckle. (It's up to you)
 - Gently, fish it through the corresponding hole on the opposite bolster **USING ONLY FINGER PRESSURE from this point forward**
 - You will need to pull the wire back in order to get it into the opposite hole. You want it to pass through as flat as possible to prevent it from damaging the opposite bolster hole. The outermost bolster holes damage easily.
 - Once through, bend some of the curve out, so it looks more angular WITHOUT adding a bend to the wire
 - Gently, remove the slack
 - Fine tune the wire as you see fit
 - Bend the wire as you did on the first step
- Add glue to where the wire enters the bolster
- Once the glue is dry, cut the wire as close as you can to the bolster
- If a bolster is damaged, position the wire the way you want it and glue into position.
Cut some scrap 1/32 x 3/32 to fit and glue it into place as well.



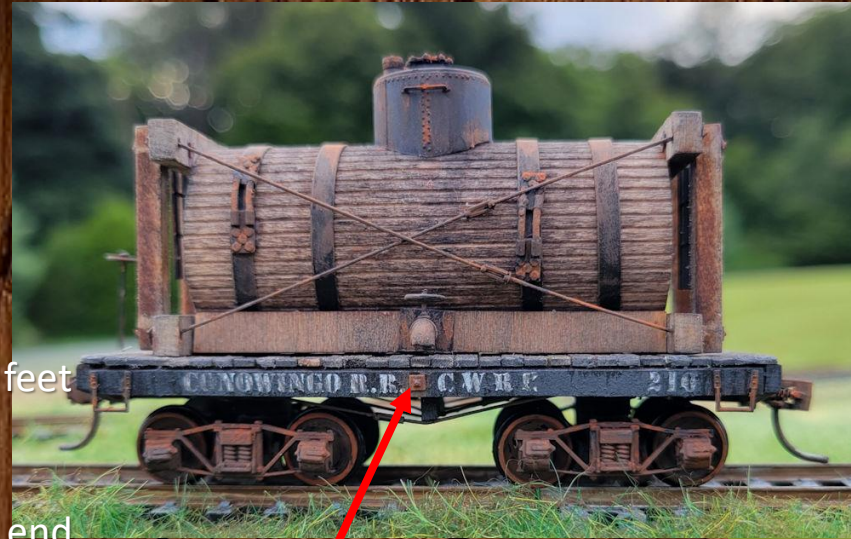
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- Carefully cut out a brake wheel
- Cut the head off the needle with wire cutters to a height of 4 scale feet (35/64 inch) or as desired.
- Glue the needle into the wood brake wheel support with the sharp end in the hole.
- Glue the wheel on top of the needle. Don't install it just yet
- If you're planning on painting the sides of the car as shown here, paint it now.
- Cut out the NBWs. Use sprue cutters if you have them so you won't damage the square washers
- Glue the NBWs into place. Four go on each end and one goes on each side next to the queen post

Assembly NBW Installation

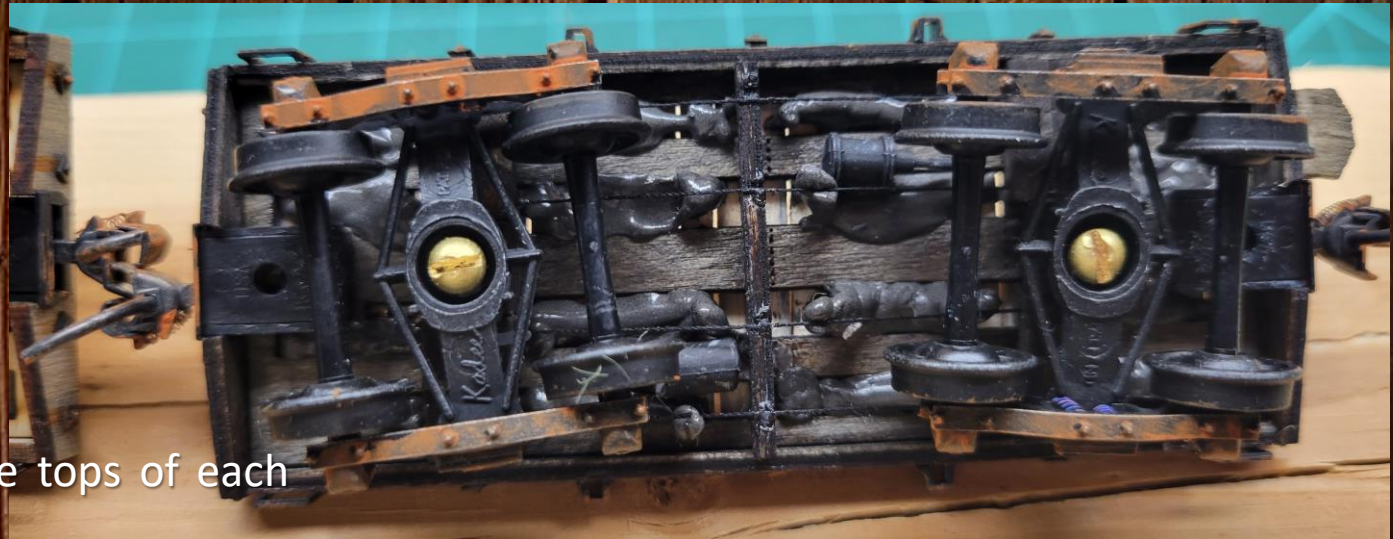


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Assembly Trucks and Couplers Installation



- Flip the car over and apply the fiber washers to the tops of each bolster center
- Put a truck over each bolster center (upside down, of course)
- Run a screw through each truck and into the hole in the bolster center. **DO NOT OVER TIGHTEN.** This will cause the truck to not move.
- We haven't used these screws before. If they do not tighten, remove the truck and washer, insert a drop of glue, wait a minute and restart at the second step.

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- Glue the brake wheel into position at either side of either end
- Glue the stirrups on each corner. There are holes notched out for them.
- Touch up any unpainted areas with flat black paint such as-
 - Truss rods
 - Brake wheel

Assembly Final Additions/ Touch Ups



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Weathering



- You may choose to smoothen out the sides of the decking using a sanding sponge. Be careful as this can cause decking to separate from the car.
- You may also choose to roughen up the wood further with the sanding sponge or hobby knife. Ponce wheels can be used to add nail holes
- Using a large brush, apply a weathering stain, such as driftwood, as desired
- Mix a small batch of orange paint with a little bit of black paint and water. This is for rust
- Apply the rust to brake wheel, NBWs, couplers, truss rods, wheels and trucks using a small brush
- Any excess can be either wiped off or diluted with either a wash of water or weathering solution

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- This car is really light. It will need weights. We recommend adding tungsten putty to the underframe
- Install load to add weight as desired
- Complete brake installation as desired
- Add decals or markings as desired

Assembly Homework



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