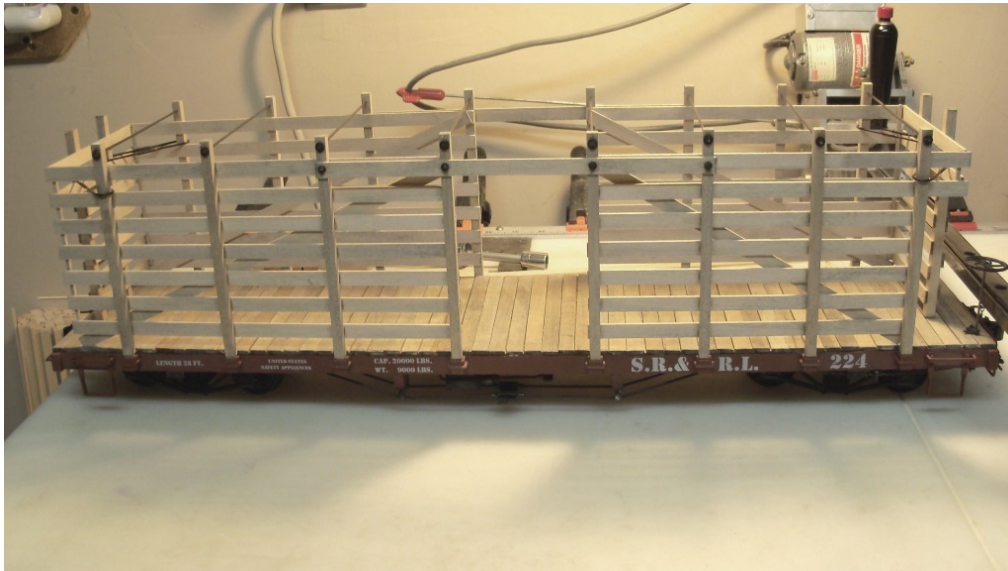


Phil's Narrow Gauge

7/8ths Scale Pulp Wood Rack Sandy River & Rangeley Lakes

Part # PNG-781B



Tools Needed:

Sandpaper
Wood Glue
ACC Glue
#’s 52 and 51 drill bits
Drill press and handheld “Dremel” type drill
Xacto knife
Needle nose pliers
Diagonal (wire cutting) pliers
Various plastic and metal small clamps
12” Ruler
Needle Files
Small Square

Parts List

Wood

W-1	42 ea.	Basswood Strips, 1/16" X 3/8" X 12"
W-2	20 ea.	Basswood Strips, 1/4" X 1/4" X 6"
W-3	1 ea.	Basswood Strip, 1/16" X 1/8" X 12" (not pictured)
W-4	4 ea.	Lasered Poplar boards marked "Spacer" (not pictured)

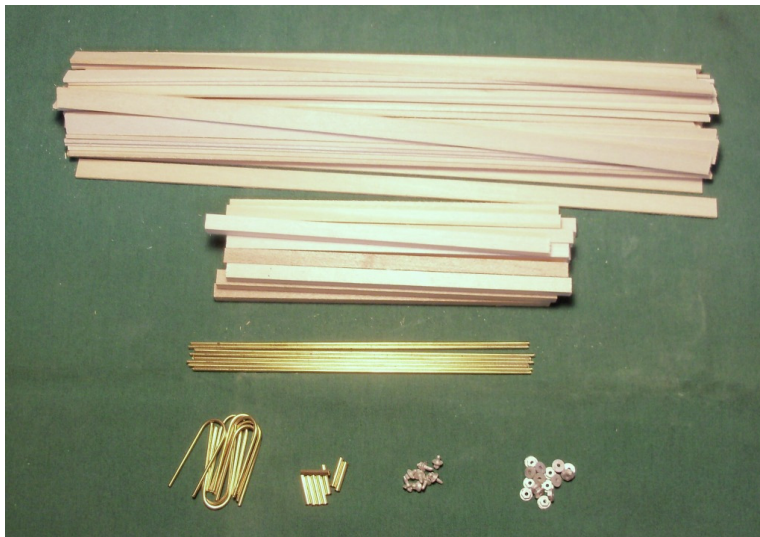
White Metal

WM-1	8 ea.	Small NBW
WM-2	16 ea.	Hollow Nut Washer

Misc. Parts

MP-1	8 ea.	1/16" X 6" Brass Rod
MP-2	8 ea.	1/16" X 3" Horseshoe Shaped Brass Rod
MP-3	8 ea.	1/16" X 1/2" Brass Sleeve

Parts



Step 1.

Gather 16 of the 20 quarter inch square by 6" long stick. Mark one end 3/8" in and on 3 sides. They need a tad of material removed to fit into the stake pockets. If you received a couple pieces that are just under 6", set them aside to use as end post. Those are only 5-1/2" long.



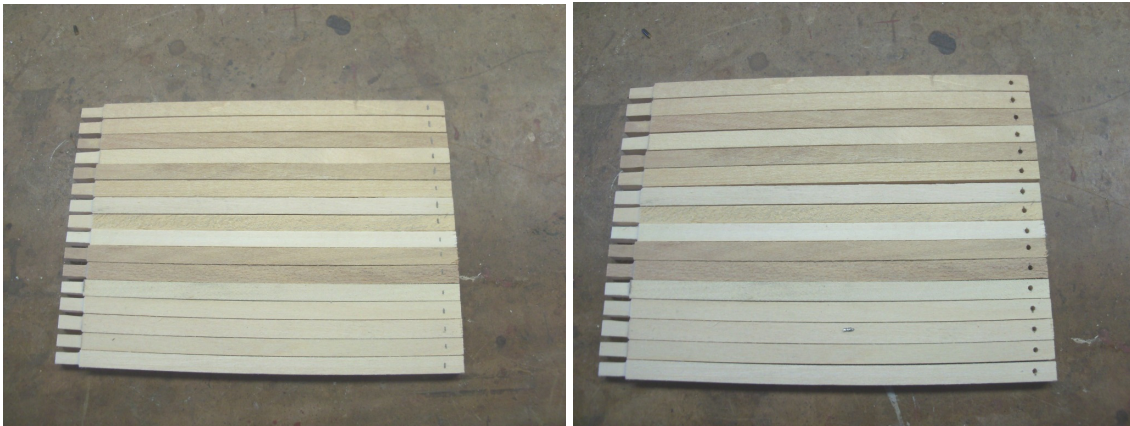
I used a 30" disk / belt sander to remove the material.

Flat, un-sanded side is up. This side faces the side sill of the car.

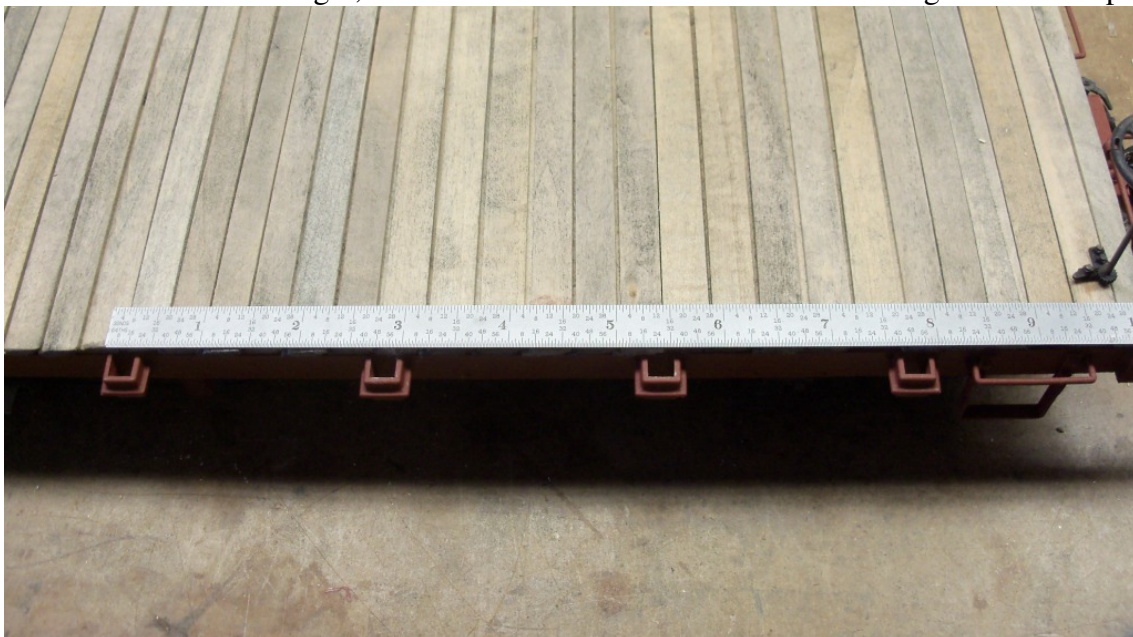


Now mark the other end for the brass rods that will be the cross bracing. With the flat side down, make a mark $\frac{1}{4}$ " from the end as pictured. The flat edge will fit next to the car sill.

Now drill the holes using a #51 drill bit



With the brake wheel to the right, measure the distance between the outer 4 right side stake pockets.



On this car the distance is 8". Depending on which end your brake wheel ended up being located, it will be 8" or 9". The stake pockets are not centered on the car sides. If the distance is 8", you will need to cut from the 1/16" by 3/8" by 12" sticks the following lengths:

- 5 ea. 8" long
- 9 ea. 9" long
- 14 ea. 10-1/2" long

If the distance is 9" long, cut from the 1/6" by 3/8" by 12" long pieces the following lengths:

- 5 ea. 9" long
- 9 ea. 10" long
- 14 ea. 9-1/2" long

I mixed up a solution of 70% alcohol and a little India ink to just off color the raw wood so it wouldn't look like new lumber.



Place the 16 stakes into the stake pockets, flat side to the car. Trim if necessary for a loose fit.

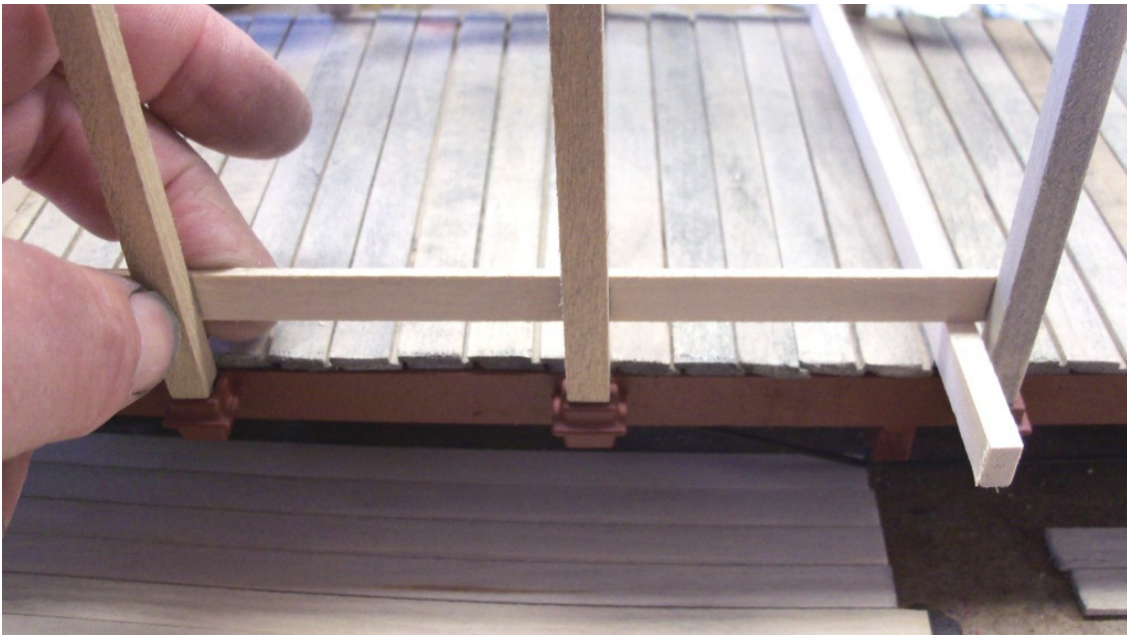


Step 2.

Using a square, 1 piece of wood and 4 clamps, find the perpendicular upright position of a stake and clamp a piece of wood to the top. DO NOT GLUE. Clamp the top of the other 3 stakes the same way. Measure the distance between stakes at the bottom next to the pockets and space the 4 stakes at the top equal to the bottoms and clamp. Again, don't glue. This is only to hold them in place while gluing the side boards.



Place 2 of the spacer boards on the deck of the flatcar side to side next to the two outer stakes. If your stake spacing is 8", place the first 8" board on top of the spacers. If 9", then the first 9" board. Mark the board either side of the stake, add glue between the marks and glue and clamp to the stakes.



At anytime you need references, look at the page 1 picture of the completed car or the picture at the end of the instructions. There will be an opening in the rack at both ends of the car on the brake wheel side of the car. This was for the brakeman to move through the car when empty to set brakes. When full of pulp wood, he had to

climb over the load. There are 5 ea. 8" (or 9") boards are on the brake wheel side of the car next to the brake wheel. The 9" (or 10") boards are on the opposite side of the car. As you start, the brake wheel is on the right front with the car on the bench in front of you. The left side boards are all the same length, either 10-1/2" or 9-1/2". Looking at the picture below, you can see the spacers with the first boards on top of them. Glued and clamped to the stakes. The boards at the tops of the stakes are just there to hold the stake straight up at 90 degrees and equally spaced apart and NOT GLUED. This first board is all important so your rack will be straight and square.



Allow to dry 10 to 15 minutes, then remove the clamps from the first board and carefully pull the spacers out and place on top of the first boards. Leave the tops clamped for the first 3 boards.



Now add the second boards on all 4 sides. Then the third boards.



Add the fourth and fifth boards to all 4 sides. Now the change is on the brake wheel side next to the brake wheel. The next 2 boards (boards 6 and 7) are 9" (or 10"), the same length as the opposite side of the car. The left side has all 7 boards on both sides the same length.

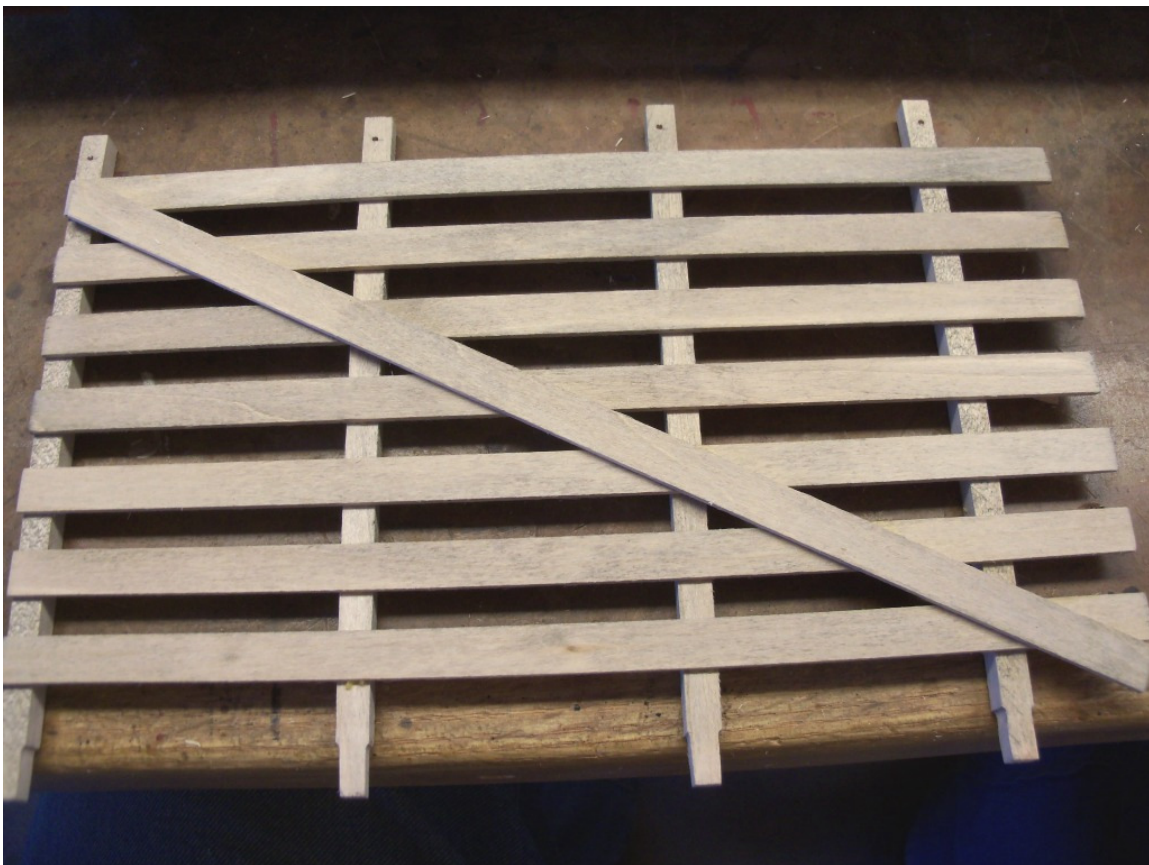


When you have all 7 boards added to all 4 sides, it should look like this. Sorry, this picture cut off the right side.

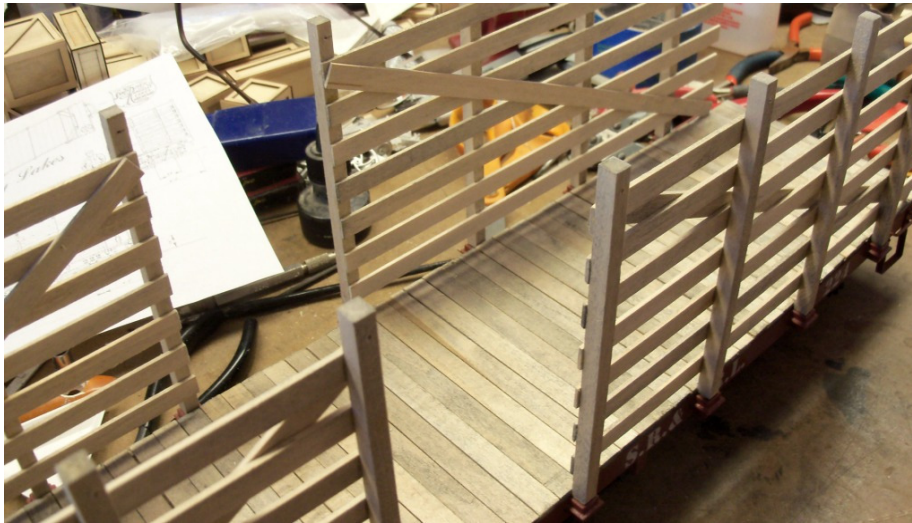


Step 3.

Gather 4 of the 1/16" by 3/8" by 1' boards. Remove the racks one at a time and add the cross brace. The brace is at the top in the middle of the car and the bottom at the ends of the car and on the inside of the rack.



You can angular cut the ends or leave them square. When all 4 racks are complete and back in their pockets, it will look like this.

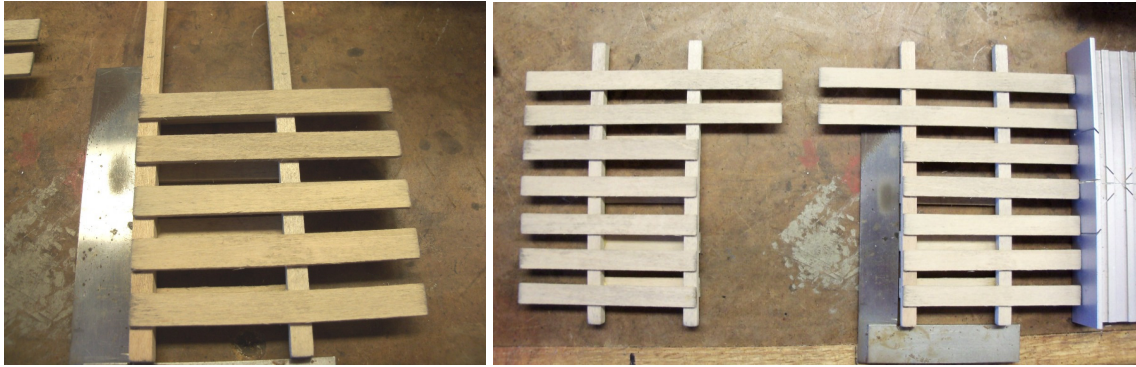


Step 4.

Gather the last 4 ea. $\frac{1}{4}$ " square sticks. Measure the height of the other 16 stakes above the deck. Should be 5- $\frac{1}{2}$ " or real close. Cut the length of the last 4 stake post to that length. These are the 4 end stake post. So that the rack can be removed from your flatcar, we won't be gluing them to the deck. Cut 8 pieces of the $\frac{1}{16}$ " by $\frac{3}{8}$ " stock to 2- $\frac{1}{8}$ " long. Glue 4 to the end post with $\frac{1}{2}$ " spacing. These are the steps used to climb atop the wood load. Make 2 of these. Use your square to keep the post square to each other. When dry, measure to the end of a rack for rack board placement.



Cut 10 pieces of the 1/16" by 3/8" stock to 3-1/2" length. These are the first 5 rack boards on the inside of the rack. Turn the end post over with ladder rungs face down and glue 5 of the boards to each end post. One end will have the boards extending to the left, the other to the right. Cut 4 boards to 5-1/8" length. These are the top boards. One edge equal to the edges of the 5 lower boards and the other edge extending out. Again, these are built as mirror images of each other as pictured below. As you're measuring and gluing, double check that the placement matches the placements of the side racks so when finished, end boards and side boards match.



Now cut the 1/16" by 1/8" by 12" stick as follows;

2 ea. 4-1/2" long

2 ea. 1" long

Glue these to the insides of the side racks as pictured. The 1" pieces go on the brake wheel side of the car on the top two boards. The 4-1/2" pieces on the opposite side. Clamp until dry.

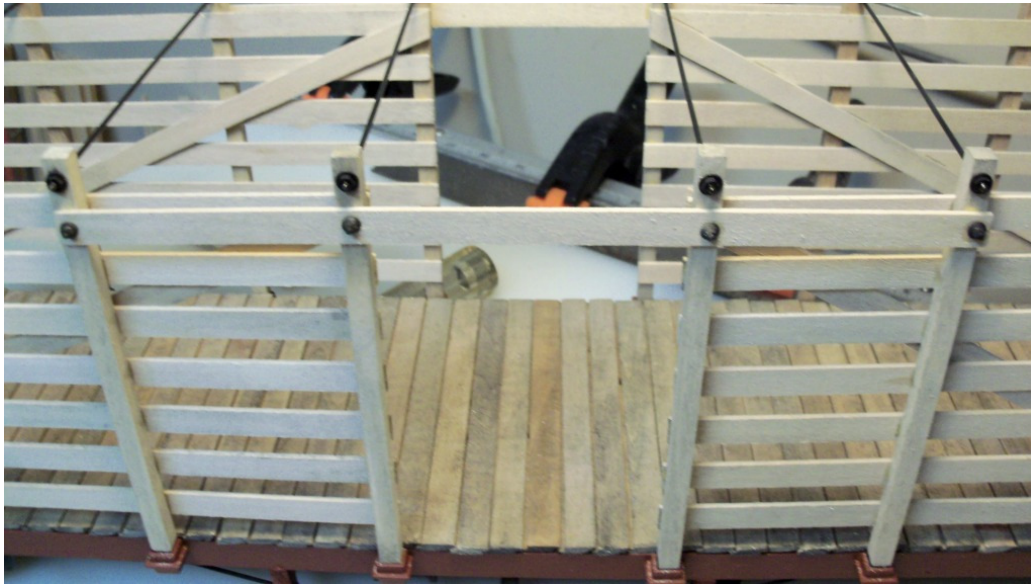


Now glue and clamp the ends into position. Be sure to put the correct end at the correct end so the pass through is on the brake wheel side of the car and the ladder steps are facing out.



Step 5.

Cut 2 pieces of the 1/16" by 3/8" stock to 9-1/4". These are the outer braces from the left half to the right half of the racks. Glue them to the outer side of the center 4 stakes as pictures. Then drill 4 #52 holes and insert 4 small NBW's. I blackened mine first.



Step 6.

Gather the 8 brass rods 6" long. File or sand the cut edges of the ends. You don't need to bring them to a pencil point, just remove any burrs from when I cut them. Now insert them through the holes in the tops on the 16 stakes. When inserted, there should be roughly 3/16" sticking out each side.



Gather the 16 hollow nut washer castings. Drill the centers with a #52 bit. This just ensures the hole is 1/16" diameter and clear of any flash from casting. Blacken all.



Add a drop of ACC and press onto the brass rods.

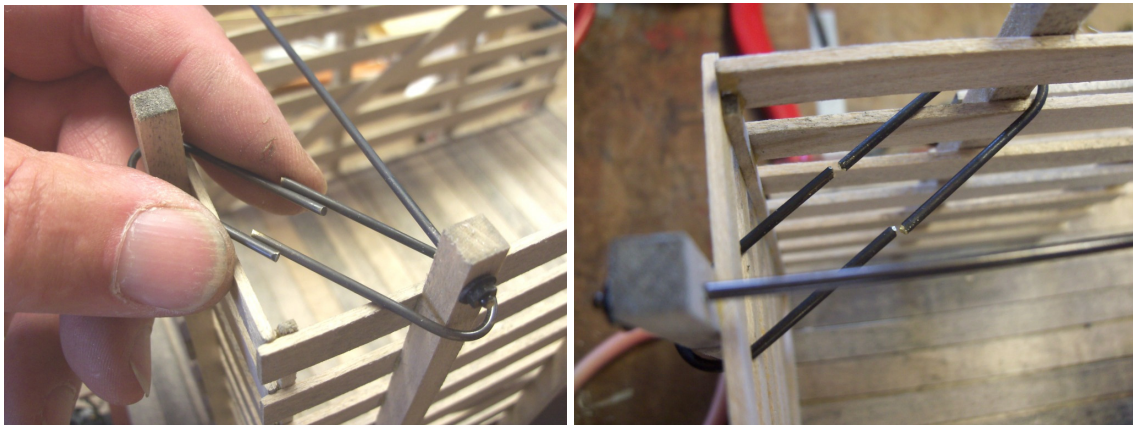


Step 7.

Now gather the 8 horseshoe shaped brass rods and 8 sleeves and blacken them.

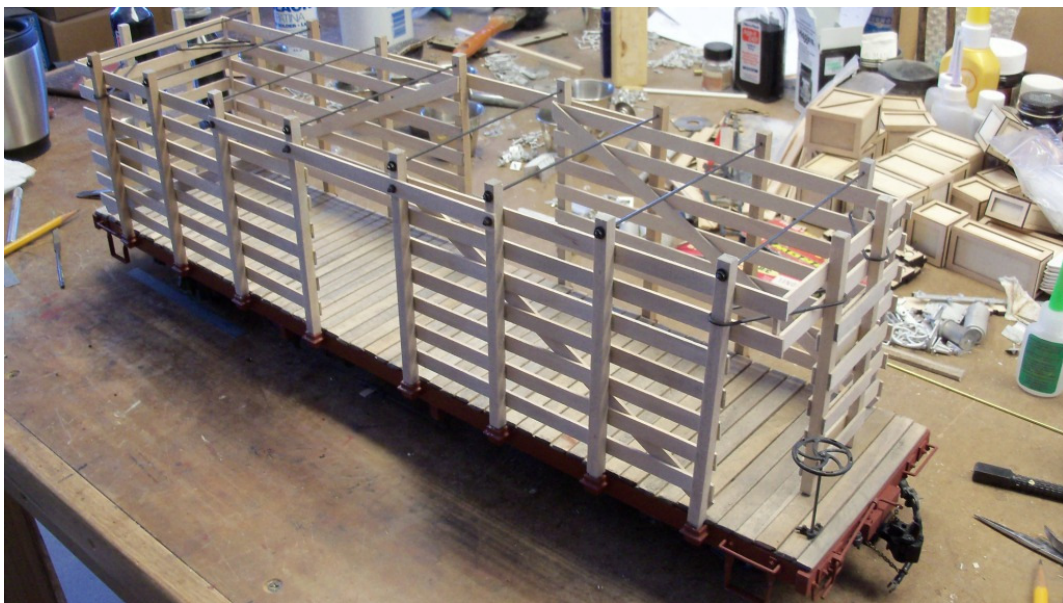


Hold 2 around the corner post of one corner. Cut excess so the two pieces have a slight gap between.



Glue 2 sleeves on one piece. Then a drop of ACC on the tips of the second piece and push together.





FINISHED !!

Comments are always welcome. Positive or negative. Please contact me for any issues with the construction. My email is phil@philsnarrowgauge.com. Email is the best way to reach me as I check it several times a day. I'm not always near a telephone.

Please send photos of your completed model. I always enjoy seeing my customers work.

Thank you for the purchase and I hope the build was as fun for you as the design was for me.

Phil Dippel
Phil's Narrow Gauge