

Perfect Craftsman Car Kits Every Time.

By Bob Parrish

There are a lot of reasons to not attempt a craftsman wood freight car kit. None are inexpensive but yet most manufacturers price them reasonably when considering the detail of the finished model. Often a modeler backs away from a wood kit for lack of self-confidence in a satisfactory completion. Wood kits are actually more forgiving of backing up a step if something is not square or glue seeps out from a joint. Manufacturers will replace a small part damaged during assembly with only a phone call, e-mail and the postage of a packing envelope. Manufacturers want modelers to be happy and proud to have completed one of their kits. Simple, it sells additional kits.

The hints and secrets of assembling a wood kit shown here will be that of a forty foot boxcar as sold by LaBelle Woodworking of Cheyenne Wyoming. The steps are essentially the same for refrigerated models and wood kits of any gauge. Other manufacturer's kits vary only slightly in basic assembly techniques. Modelers tend to fall into a habit of what order they might conduct the various steps toward the completion of a model. I will show things in the order I usually follow and your experience may lead you in a slightly different order but the hints themselves will work every time for a perfect model.

The core wood of a boxcar or refer includes four parts: roof board, floor board and two end blocks. Be sure that the roof and floor board are exactly the same length. Similarly, be sure that the end blocks match exactly in all dimensions. If the core frame of your boxcar is not perfectly square when glued, nothing thereafter will be correct. Manufacturers make parts in groups or "runs" and parts within those runs are exactly alike. It is possible that one or another part may be from a different run and thus slight differences might occur.

Use any one of several types of yellow wood workers glue. They are all good. Put a thin wipe of glue on the top and bottom of an end block and place it on the floor board. Do the same to the second. Be sure to square them up as best as possible. Then place the roof board on the end blocks and tie off with rubber bands. See fig. 1.

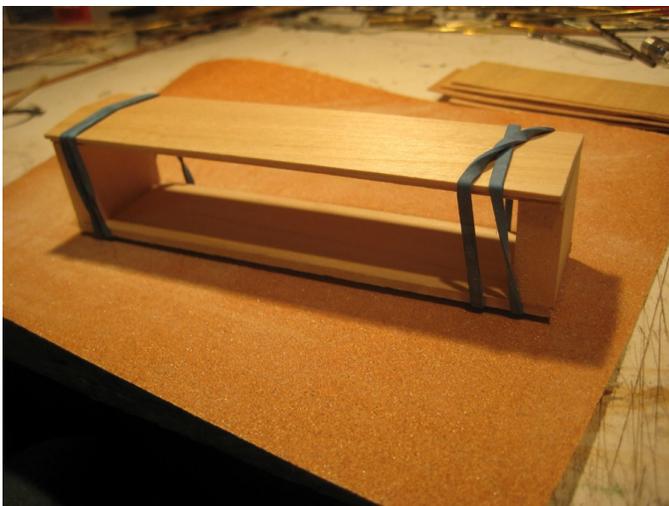


fig. 1

It cannot be stressed enough that the next step is of great importance. This is where the core frame of the car kit is

squared and flattened to accept all of the parts that follow; all the stuff that is visible when finished. Remove the rubber bands and examine the end blocks for location between the roof and floor boards. If the end block sticks out a bit it must be sanded down to match the ends of the roof board. The trick here is to lay a sheet of 150 or 220 grit sand paper on a very flat surface. A Formica type bench top is perfect. Inspect your work after each stroke across the sand paper. See fig 2.

If the block sticks out a bit on a side it must be sanded down to the width of the roof and bottom board. If there no overhang on the roof board simply lay the entire assembly flat on the sand paper and slide it across. Inspect progress after every stroke. Basswood sands easily and quickly. Use the finger nail test to check for perfectly flat joints. If it is really flat, you will not feel a hitch across the joint in either direction. See fig. 3.

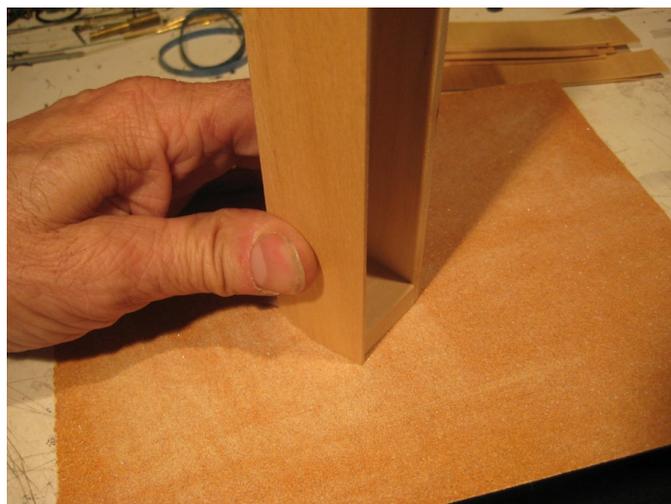


fig. 2



fig.3

If there is a roof overhang on the roof board a slightly different approach must be taken. Place the sand paper exactly at the edge of your work surface. The edge must be perfectly straight and square. Any rounding of the work edge will prevent this from working correctly. Then lay the car assembly on the sand paper with the overhang hooked over the edge of the work surface. This will prevent any material on the overhang from being removed. Do not fold the sandpaper over the edge of the work surface; only flush it up to the edge.

This creates a perfectly straight and flat surface for the side panels when they are applied. See fig.4.

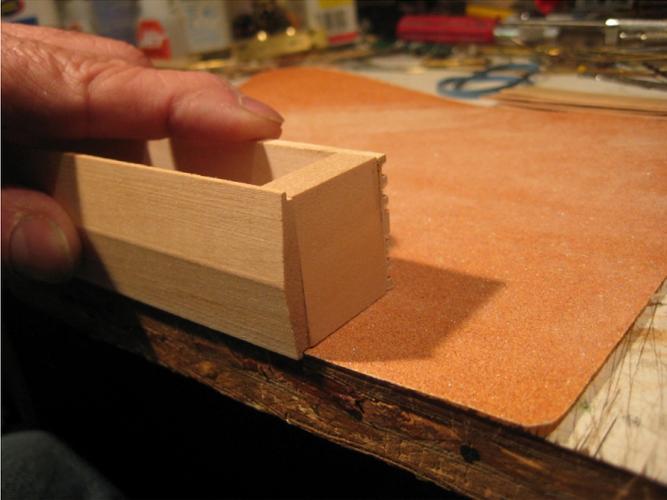


fig.4

The next step is to plot out the under floor part locations: bolsters, needle beams and holes for stringing the truss rods. A small machinist square is important for good work. Mark the centers of each component on the floor board and then bring the mark around on the side of the floor board so it is visible during installation of the various parts. See fig. 5. Mark around the sides again after the side panels have been installed.



fig. 5

Some manufacturers provide wire for truss rods and it can be pushed through holes in the floor and bent over and secured. LaBelle provides fishing mono-filament which tensions easily and always looks straight. Mark up the locations of the truss rod needles on the floor of the car body. This will ensure that the truss rods are perfectly straight to the length of the car. See fig. 6. Drill holes of a suitable diameter for the truss rod wire or string. Thread the line through the various holes and knot one end. Then place the needle beams flat on the floor under the four truss rod strings. See fig. 7. This is only the pre tension part of this. Do not attempt to actually load the strings up on the needles as this puts too much stress on the floor board and puts an arch into it. The strings will not be fully tensioned until the scribed side

panels are glued on to make the floor and roof rigid to each other. Knot off the second end of the string, taking out as much slack as possible but not pulling it very tight. It does not need to be an A string on a violin. Peg it with a toothpick to hold it while making the knot. See fig. 7. Put a dot of super glue on each knot and flow out onto the floor board. See fig. 8.

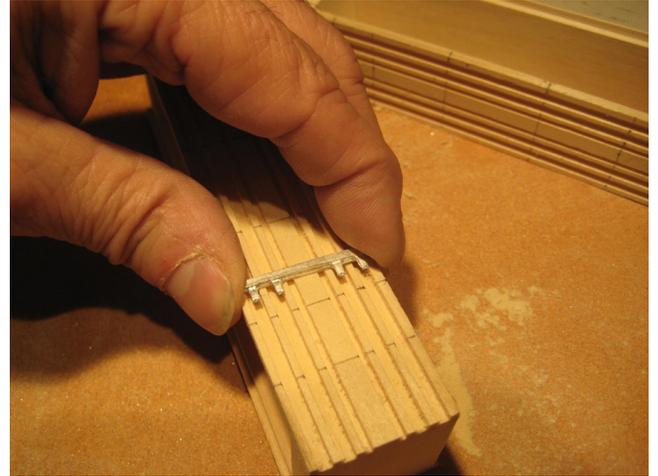


fig. 6

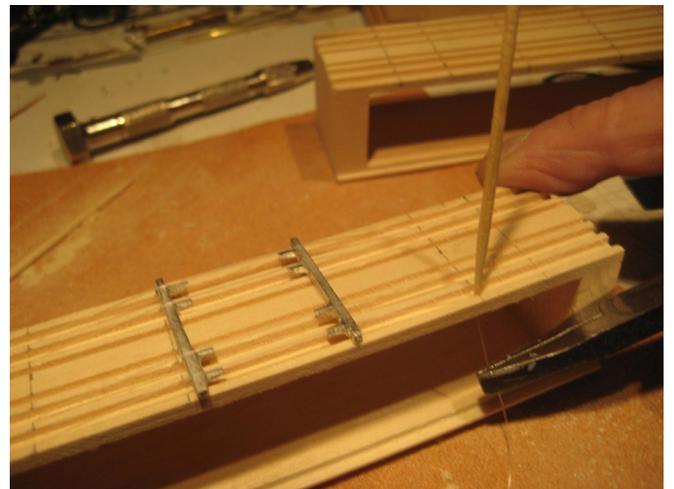


fig. 7

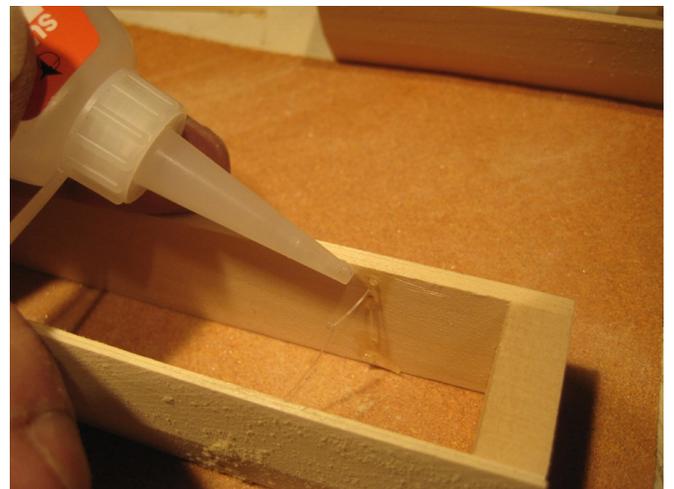


fig. 8

After the knots are set remove the cast or plastic needle beams and set aside. The strings should pull back into

the milled out areas of the floor board by themselves and stay out of the way for the next few steps.

Weighting the car can be done at this point by gluing in the weights of your choice with Walthers Goo or similar adhesive. Use NMRA standards for the length of your model. When scaling up be sure to put the trucks on the scale also.

Next are the scribed end panels. This will be the first part that is actually visible on the finished model. Now things really matter. There are two ways of doing the ends. One has the scribed panel going all the way to the peak of the roof and the other is where the scribed panel stops equal to the location of the side panels. Follow the instructions that accompany your model. See fig. 9. The issue here is that what ever comes to the roof surface, scribed or dimensional wood, must be sanded off flush with the roof board. Use the fingernail test.

Be sure that the scribed lines are exactly vertical on the car. Then press with a small dummy block and clamp. See fig. 10.

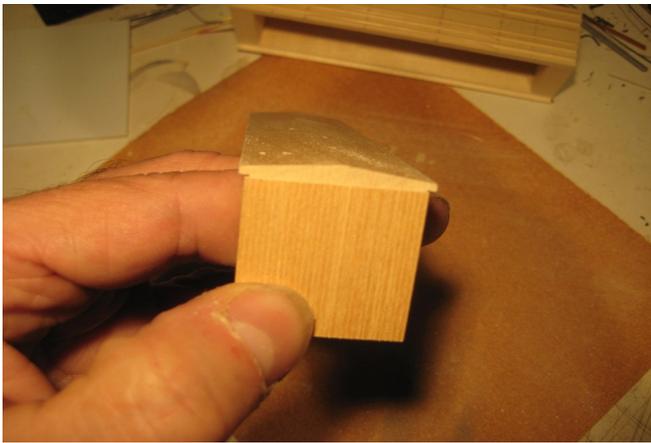


fig. 9



fig. 10

Once out of the clamps, re-sand the sides of the car so that the end panels are perfectly flush to the end blocks. See fig. 4.

If your model uses a large fascia board above the scribed panel on the end of the car, do not make any attempt to pre-shape the fascia board at this time. Glue the fascia boards to the end of the car. Apply glue to the board and place on wood car frame. Stand the car on end; weight it to allow the

glue to set up. Then do the same glue process on the opposite end.

Shaping the car end fascia then is easy. With a very sharp, new blade, carve down the excess wood to near the roof subsurface. Then put the roof board on the sand paper and bring down the fascia boards to exact level. Use the fingernail test. See fig. 11 and 12. Figure 13 shows a completed end assembly.

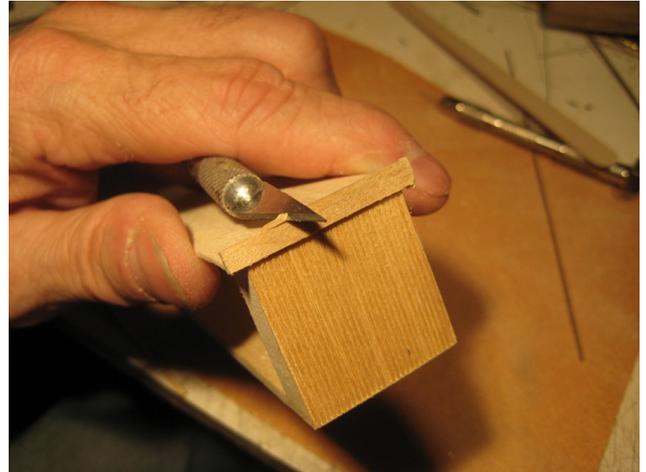


fig. 11

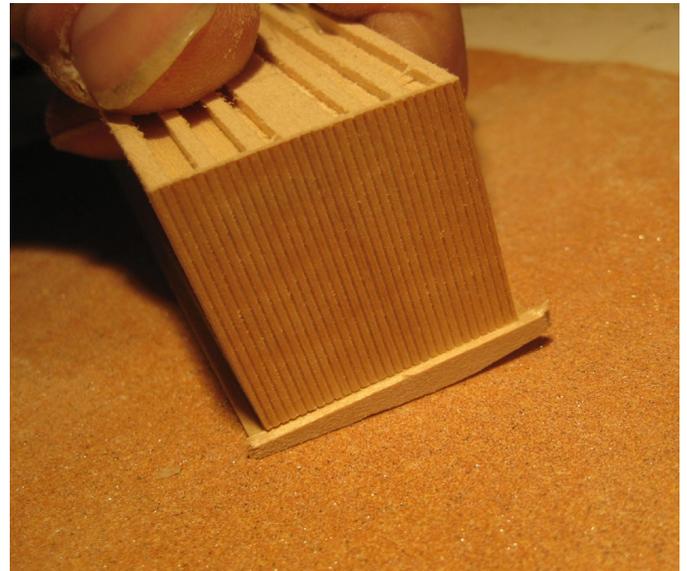


fig. 12

The scribed roof panels are the next pieces to go onto the sub frame. This is a step that may be interchanged and performed after the side panels are in place. I do it first so that the clamps may easily apply pressure to the scribed roofing and there is no risk of crushing the car body and sides due to clamping at the floor board. Plot a pencil line down the center of the roof, the entire length of the car. See fig. 14. This will be your mark for the two halves of sheathing. Bring the line over the ends of the car onto the fascia board. This will become the center mark for applying the roof walk boards. See fig. 18.

Glue up only one side at a time and have the sheathing right on the line you drew. See fig. 15. The second sheath can be applied after the first sets up and if it is not absolutely tight it is all right as the roof walk boards with hide it.

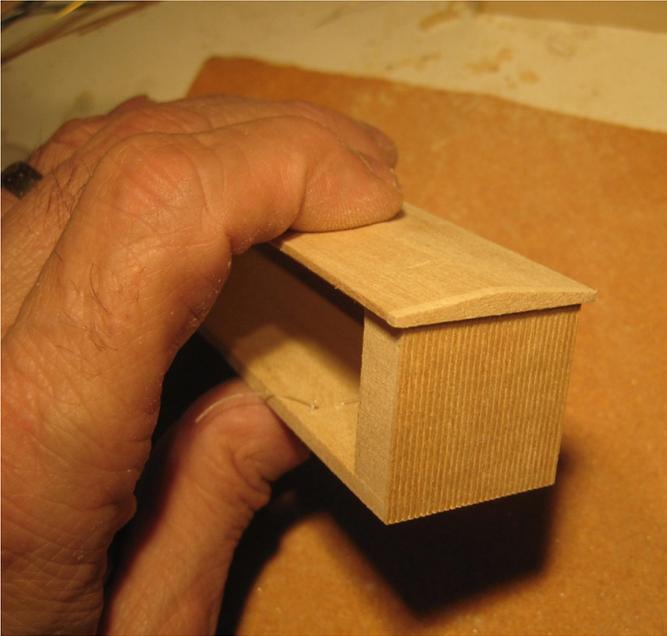


fig. 13

Always leave a small bit of the panel being glued down visible at the edge of the dummy block. Often the scribed panels will “float” on the glue and move from their intended location. This little line of exposed wood allows you to inspect the panel location while tightening the clamps. See fig. 16.

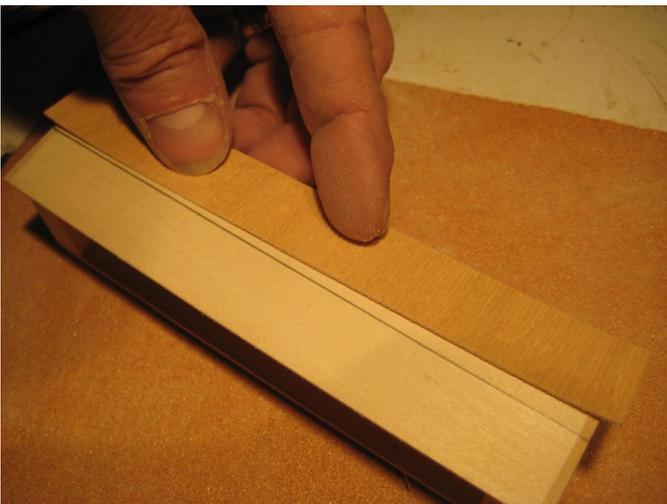


fig. 14

Applying the car sides is the next step. Glue up only one side at a time. You will need dummy blocks to spread out the weight and they must be at least as large as the entire side of the car. Do not attempt to use multiple clamping blocks. You will also need a second dummy block on the opposite side of the car for a place for the clamp to get into. Be sure to leave a viewing edge visible under the fascia, to ensure a close fit.

After the first side is out of the clamps, inspect very carefully as once the second side is on there is no going back inside the car. Do you have enough weight and did you glue off the truss rod strings?



fig. 15

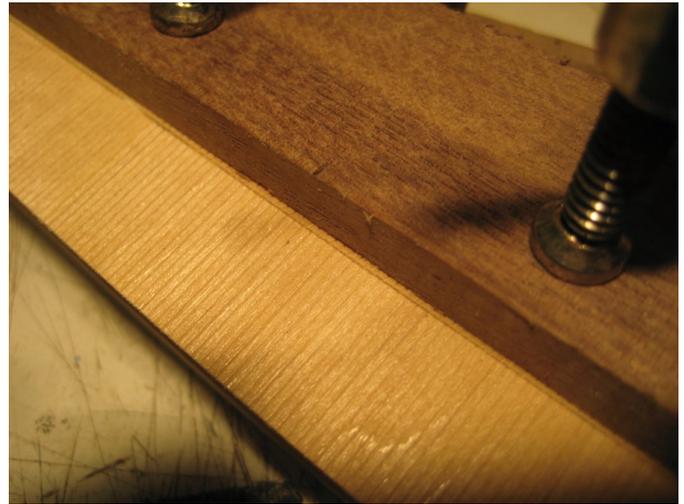


fig. 16

After several hours in the clamps with the first side, repeat the clamping process for the second side using a dummy block on both sides of the car. This also prevents any clamp marks from showing up in the scribed wood.

Once out of the clamps, block down the entire car body. That is, clean up the side panels that extend beyond the end of the car. And clean up the bottom aprons of the car sides and ends. You may choose to have the siding extend a bit down from the floor board.

The sanding off of the roof edges is next. There should be a small overhang of the scribed panel beyond that of the roof board. How much is something of choice but it should cover the door roller track or the cover board for the roller track, depending on the model. Refer models with flush doors may be less. This step is made possible by placing a dummy sheet over the sand paper and then running down only the scribed roof panels. The distance the roofing sticks out beyond the sub roof is a function of how thick of a dummy sheet you may use. The dummy sheet may be a steel ruler or a

sheet of styrene. Just pick the thickness you want based on the photos or drawings provided by the manufacturer. See fig. 17.

Trim down the roof sheathing on the ends of the car in the same way. Figure 18 shows a completed roof overhang on both the ends and side of the car.

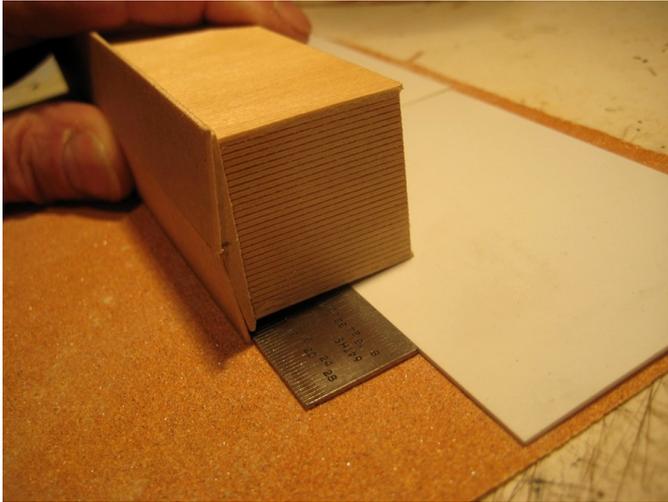


fig. 17

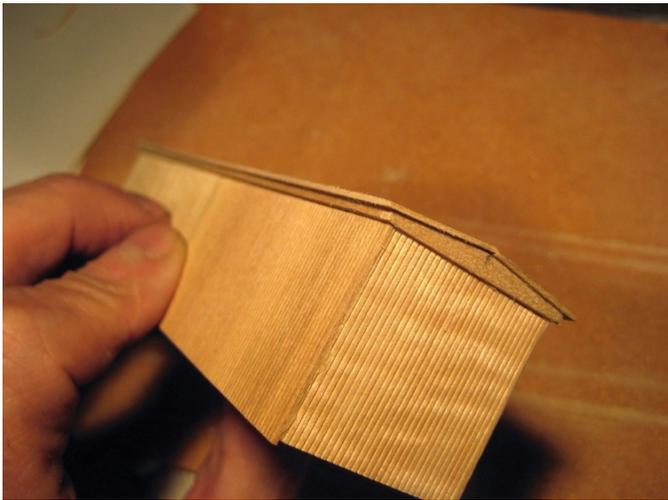


fig. 18

The last step that bears consideration is the roof walk. All manufacturers provide small dimensional wood for the risers that the roof walk is fastened down to. This allows the walk to sit up off of the roof sheathing and is important for a good quality model. To be able to see light through that little space under the walk is the mark of a well-finished craftsman model.

This is where most people back away from the project. The instructions show a pattern for cutting the angles into this scale two by two so as to allow the risers to sit down on the sheathing and offer a flat surface for the walk boards. This is a tedious process that seldom produces matching parts, as there will need to be about twenty of these microscopic parts. This is the only place in the construction where cheating is acceptable. Place the now closed in car body up side down on the sand paper. Hold the car body so the peak of the roof is the only part of the sheathing touching the sand paper. Try and hold the car body square to the decking surface. See figure 19 for finished appearance. This will leave about a flat surface about one-quarter inch wide. If the sanded

area goes to wide suddenly, not to worry. After the walk is completed the sheathing can be re-scribed with a sharp blade point.



fig. 19

Take a single pass over the sand paper and examine the area that wood has been removed. Repeat the sanding process until a flat path is worn into the roof peak. The object here is to flatten out the peak of the roof to exactly the width of the roof walk. The scribed lines will still appear up to that point. The fact that the actual peak line is now missing will not be seen once the walk boards are cemented down. It is about being able to see light under the walk boards. See fig. 24 for finished appearance.

Mark out the board spacing with a pencil. Usually a riser spacing on the roof sheathing of four to five boards works well. If the lines do not count out evenly mark back the correct spacing from each end and lose or gain the one odd board somewhere just out of center. It will go completely unseen when the model is completed.

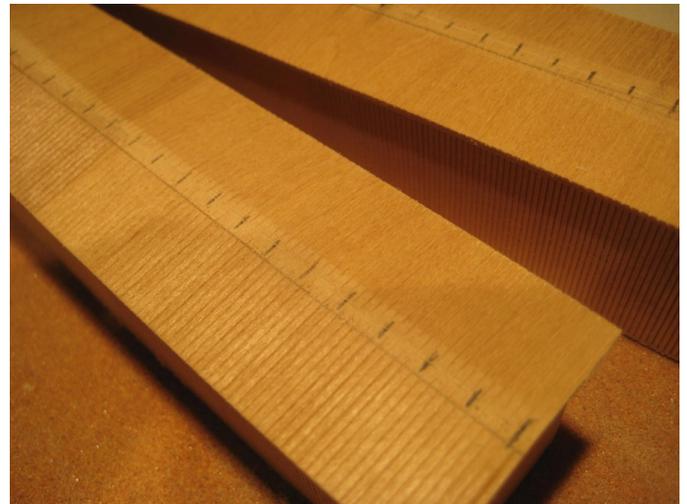


fig.20

Cut the riser boards longer than necessary for ease in handling and handle them from the point of a model knife. This allows for easy swiping through a small puddle of glue and then placement on the roof. When all are down turn the car body over and press firmly on a flat surface to make them

as close to equal in height and angle as possible. Resist wiping off glue bumps immediately. The yellow wood workers glues go through a dough like stage that makes it very easy to clean up after five to ten minutes. Do not allow to fully dry. Pick away the bumps with the point of a model knife. See fig. 21.

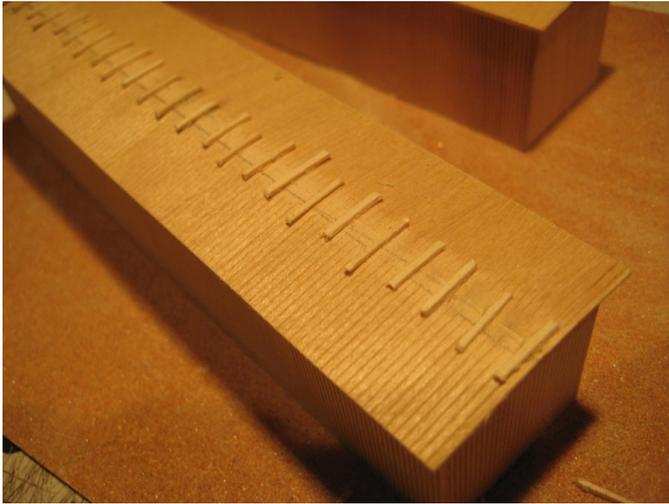


fig. 21

Figure 22 shows how much of the risers may be seen after applying the walk boards. The most recent LaBelle kits have a laser cut trio board that is bound at the ends and will be trimmed off once the glue is set up. Earlier LaBelle kits and other manufacturers use individual boards. Apply the center board first and then place the remaining, one on each side. The pencil line on the end fascia will help you with centering the boards. Cement the walk boards down now. Weight the walk boards down and allow setting up.

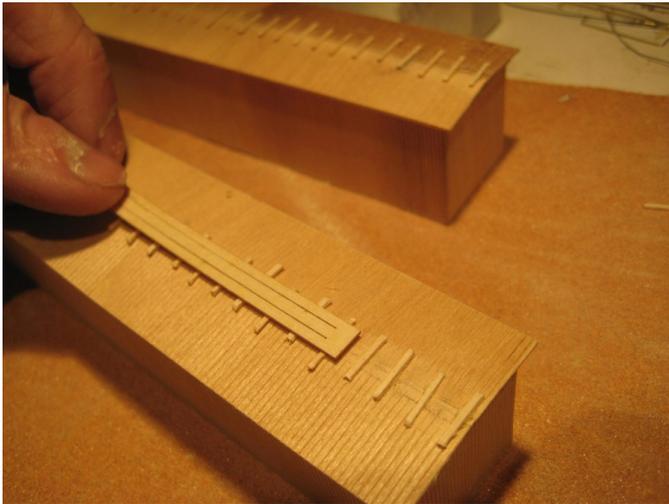


fig. 22

Trim off the riser boards that extend beyond the walk boards with a very sharp blade. The end result will be just as the plan shows the walk. Take a small scrap of sand paper or a finger nail sanding board and smooth the sides of the roof walks and risers.

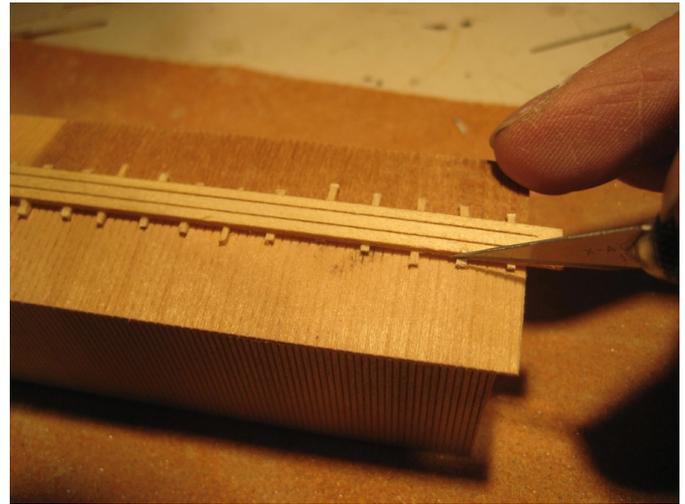


fig.23

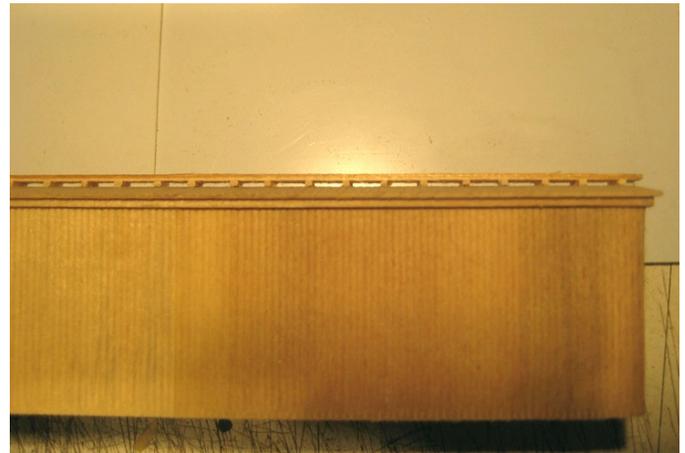


fig. 24

You may choose to stiffen the roof boards that extend beyond the end fascia board. This can be done with thin grade super glue. Pull a small line of glue across the under side of the scribed wood and allow it to soak in. Do not accelerate the super glue with a kicker. This will go unseen after the model is painted and weathered. See fig. 25.



fig. 25

The remaining detail parts: doors, under-car equipment, grab irons, trucks and couplers can be assembled

as the plans for your kit suggest. The gluing of the needle beams can be completed now. Lift up the truss rod strings and slide the needle beams under the string. Stand up and glue the beams to the floor. The strings may now be pulled up onto the needles. The tension will be pretty great for a time but the monofilament will yield back some of that tension. They will however, always be tight.

The important part here is that you now have a perfect base for all of that detail. And you will have a great model every time. See fig. 26 for completed car body ready for detail, final sanding, painting, lettering and completion.

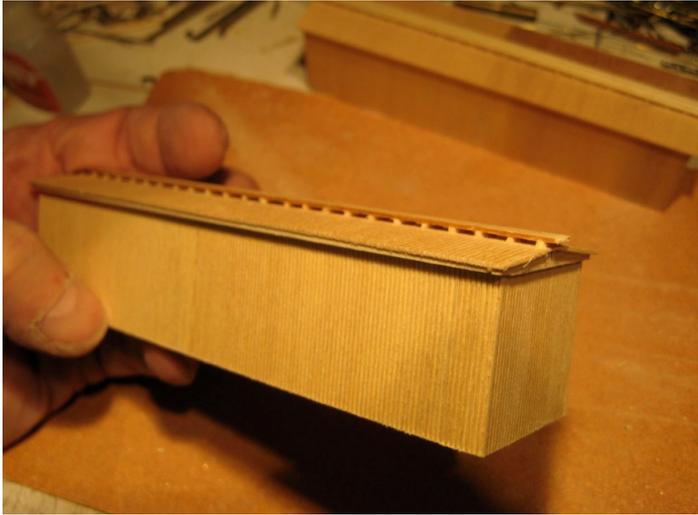


fig. 26

Once the ends are at the correct length put a very thin line of thin super glue on the under side of the scribed roof ends. These are very fragile as they are sticking out and the grain of the wood is rather weak. This will be invisible once the car is painted. It will allow good durable service if your cars if used in switching operations.



Paint and letter your model using the methods and colors of your choice. Weather it if you choose.