Building an Interurban car

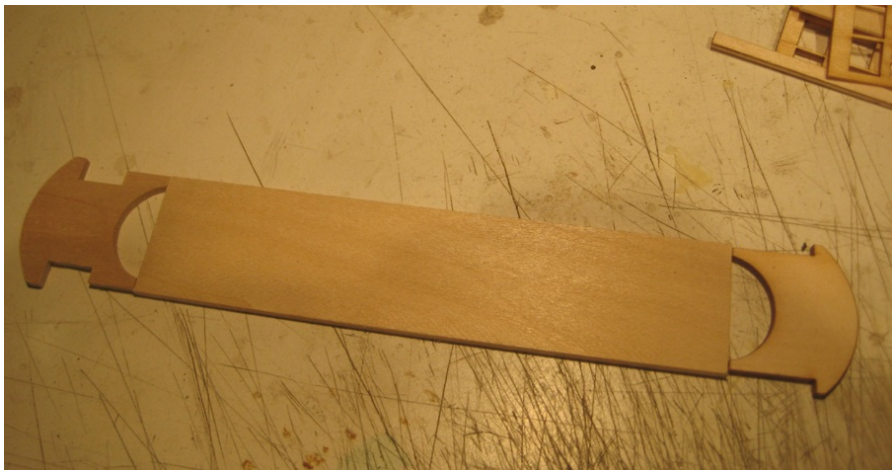
By Bob Parrish

These notes and photos may also be applied to any of Labelle's passenger cars as their construction design is consistent across the product line. These are great kits but take a lot of patience and creativity. The first decision which must be made is how it is to be powered. Labelle offers a drive motor truck called a Bull Ant made by Hollywood Foundry of Australia. North West Short Line makes and under floor drive system called a Stanton Drive and then there are still a few Tenshodo Spuds that turn up occasionally on eBay. An additional option is a drive shaft mechanism to a truck offered by Bowser. As a side note; if the Bowser drive is chosen, replace the Athearn type drive shaft with one from North West Short Line which will allow for better low speed operation and tighter turning radius. I have even had success putting Proto 2000 SD 9 mechanisms directly under the trolley freight motors with only a small amount of modifications. Any of these are workable systems but the decision of powering must be solved early as it affects the layout of the floor.

As these are a powered model, the best assembly system seems to be to construct these models as a shell over the floor. Perhaps an argument could be made for a removable roof but the model is very difficult to construct without the structural stability of the roof.

A comment on choices of glue may be appropriate at this point. The glue of choice at this time by most modelers is yellow woodworking glue. These are available under the trade names of Franklin or Borden; all available at home project stores. When gluing parts there is a tendency to get too much glue loaded up and some presses out at the sides of a part. Try and resist wiping it away immediately; wait about four to five minutes. Yellow glue goes through a doughy stage that makes it very easy to clean up. Take a knife blade or small chisel and cut down and get under the glue and as you wipe along a surface the glue will come up and not wet the wood below it. This is particularly important if you are to be staining the wood for a natural finish.

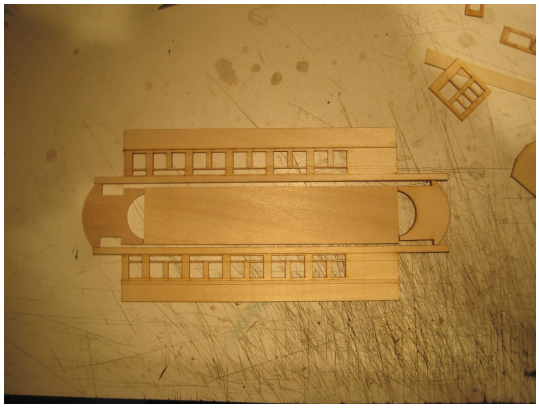
In most cases these instructions will be helpful in assembling the various freight motors offered by Labelle.

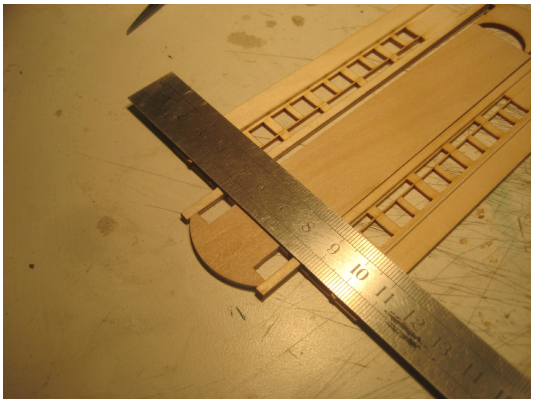


Floor plan for Sacramento Northern combine. Buffalo, Rochester & Lockport coach and Sacramento Northern coach are similar at both ends.

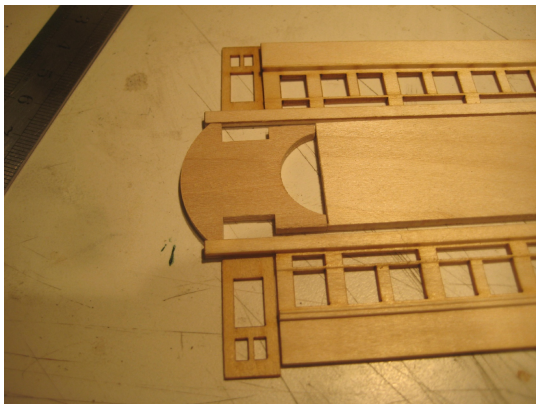
First an identification of all parts in the kit is necessary and then examine the floor layout. Shown above is the inner floor, center, which will be removable and the motorman cab end sills (identified as bumper, part number 11 in the instructions sheets provided) which will become part of the top shell. The kit chosen for this discussion is Labelle's #78, Sacramento Northern combine, but the design features of the Labelle products all share similarities of construction both passenger and freight motor.

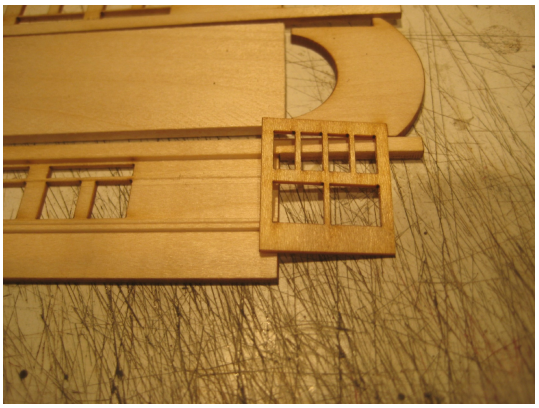
As shown above, the floor assembly has walk through doors at the left end and a freight doors at the right. Necessary decisions on drive mechanism are quickly observed here as to how the shape of the floor insert might be made to accept a mechanism. It is my guess that the curved design of the end sills is left over from the earliest kit designs from the now ancient oval motor Bowser drive trucks with a vertical motor shaft. These motors were very durable but required a lot of tinkering to get the motor shaft aligned and turning freely. These motors still turn up at swap meets and auction sites and are easily converted to DCC.

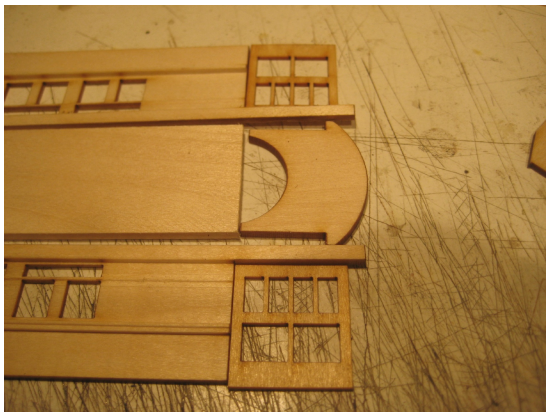


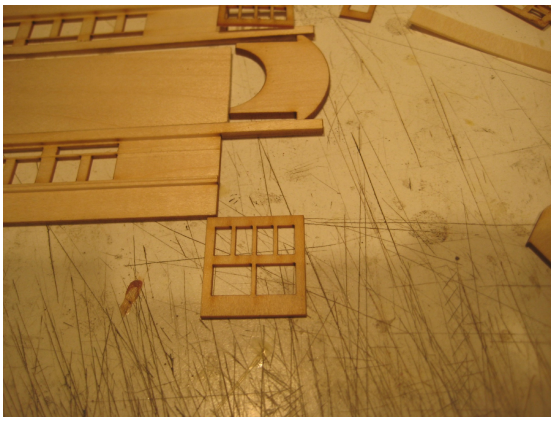


Layout the sides adjacent to the floor assembly to get a feel for how the parts will fit together. With a steel ruler, square up the door openings that will represent the final location of the sides and doors.





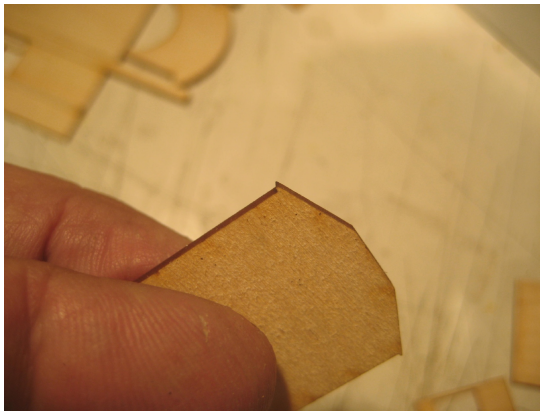




Place the doors into their appropriate location for examination of total length and layout. On this particular model the freight door is about one eighth of an inch wider than the cut out in the side wall. The side wall will need to be trimmed back by this amount so that the full door will be visible. This will be described later.

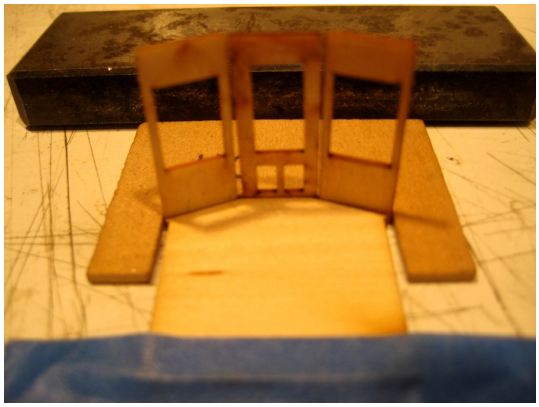
The small wood parts bag provided in the kit gives four interior shaping blocks that are the foundational shape for the three panel facetted car ends. The location of the end doors and windows varies from kit to kit. Some models have center doors and others are offset to one side. Either way the base panels for doors and windows are the same width. The side doors supplied are wider and should be set aside for later instructions. In early Labelle interurban kits a jig was provided for assembling these ends. Currently the manufacturer is contemplating offering this jig again as a special tool that may be ordered separately.

To make one of wood or brass, the opening is the width of the floor panel and a small indentation in the center for the center panel whether a door or window. The layout is shown below in both a flat position and then in a ready for glue location. When standing with the panels glued to the base block, put a small dab of super glue at the tops of the panels to keep their shape while the yellow glue is setting up.



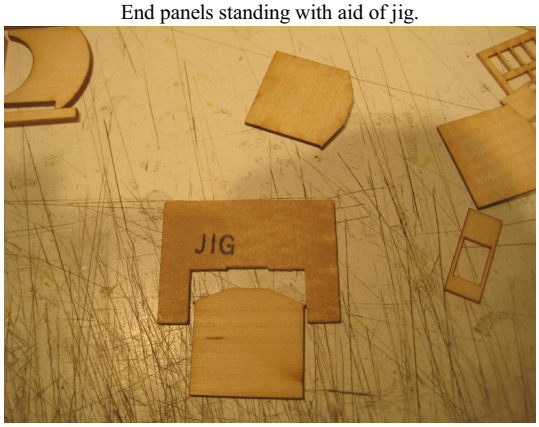
Interior shaping block. Four are provided. Please note door locating spur that will be described later.

Layout of end panels on shaping block.



Jig as supplied in early kits

End panels standing with aid of jig.



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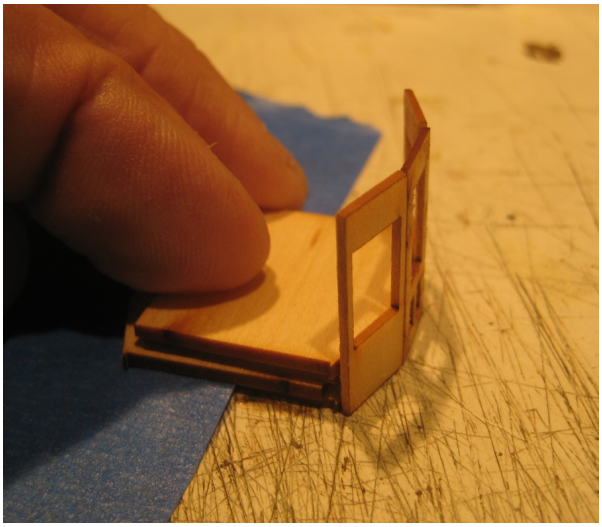
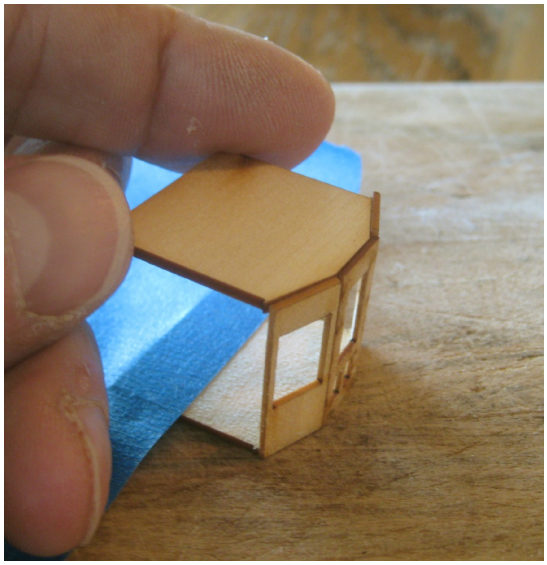
In setting this up without a jig a small stack of the additional, yet unused shaping blocks may be stacked to aid in getting the end panels absolutely vertical. Place a small line of glue along the bottom edge of door and window panels and apply to the lower shaping block. Some coaxing will be necessary to get them to stand and give equal spacing between the panels. Two of these assemblies will be made. Do not attempt to put the center panels in the lower part of the door first as it will get in the way of the shaping block; these will be placed later.

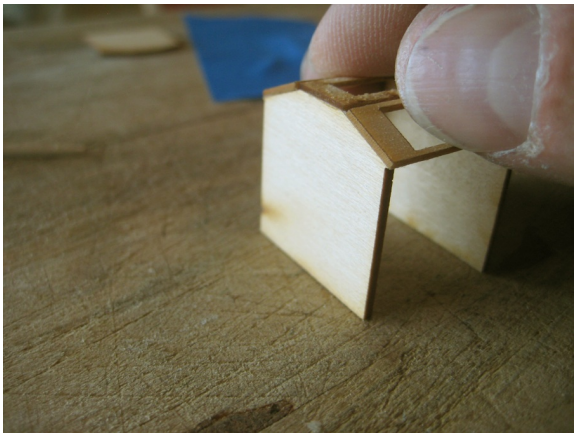


Stacking the shape blocks to square the end panels vertically if no jig is available.

Once both of the end segments are glued, the upper shaping block will be installed. This is done by turning the shaping block on end and pulling the three panel ends into the block. As yellow glue sets up rather quickly, this step should be held by hand for a few minutes to allow for glue set. This also forces the upper and lower shape blocks to be aligned to each other. If one or another shaping block turns out to be something other than square to the front panels it can be easily altered. These blocks are supplied with the grain of the wood across the car so it only needs to be wetted, (or licked a few times) to soften the wood and allow it to be easily bent to the correct angle. Simply hold it a few minutes in the correct location and allow to dry a bit.



Position of the shape block.



Holding the shape block and panels while glue sets up.

Car sides:

See article elsewhere on this web site for details of "car side assembly".

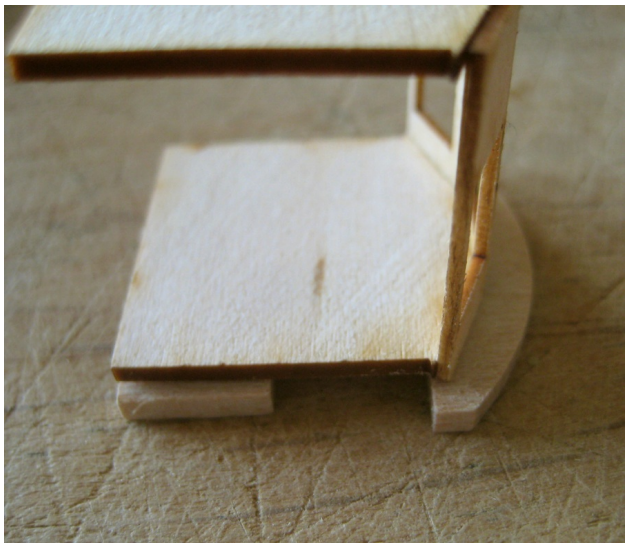
Calculating side length:

Not all car sides need any adjustment. The manufacturer tries very hard to get these right but a calculation is necessary none the less. Consult the instruction sheet provided with your kit to determine the roof overhang at each end of the car. This varies from car to car. Place a square on the instruction that follows the floor line and on the leading edge of the roof. Any floor sill showing is the amount that needs to protrude beyond the roof.

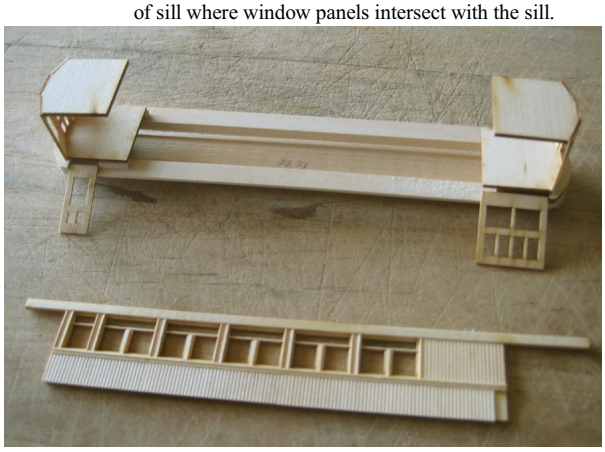
This may end up looking a bit odd but it does work. Place the roof assembly top down in your bench and begin stacking parts on top of it. Blue tape it down if necessary to prevent rocking.

Place the floor sill pieces on each end of the roof and then position the end assemblies over the sills. The floor sills should protrude beyond the roof at the center line by the amount calculated on the instruction sheet a moment ago. The instructions are a bit fuzzy about the true floor length as the end elevation shows the anti-climber casting applied and the side elevations do not. To locate the end assemblies on the sills, look for a small tab (spur) that protrudes from the backing block. That is the edge of the door opening. Position the end assembly so as to allow for a verticle piece of strip wood to be added later that will create the door opening. What must be allowed for here is the quarter round moldings around all the side doors, both walk through and freight. The molding provided is three scale inches in width, just less than a sixteenth of an inch. These moldings will take up more space than

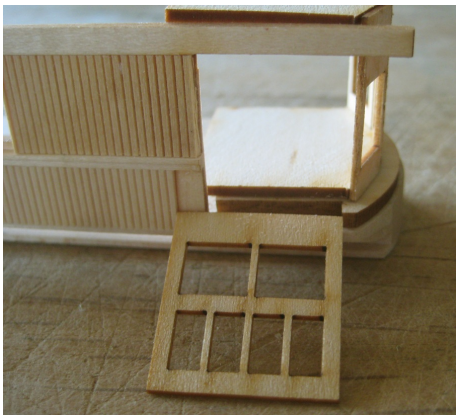
allowed for in the drawings. All of this is to allow for full visiblility of the doors. Although the manufacturer does a very good job of providing parts ready to assemble, make this calculation for yourself and determine how much of the side might need to be trimmed back.



Locating the end assembly on the sill block. Note the small spur just behind the window panel. This is the location for the overall door opening. Mark with a pencil around the front of sill where window panels intersect with the sill.



Inverted stacks with door panels located to indicate space to be allowed.



Showing the placement of the freight door and scribed siding removed to indicate amount to be trimmed from side panel all the way to the letter board and tail.

Showing the placement of the walk through door. Note the location of the sill and round of the roof assembly. Side panel is located from this end and all trimming of the side should be done at the freight door end. A similar layout should be done with the Sacramento Northern coach and other passenger applications to establish the location of the sills in relation to the roof

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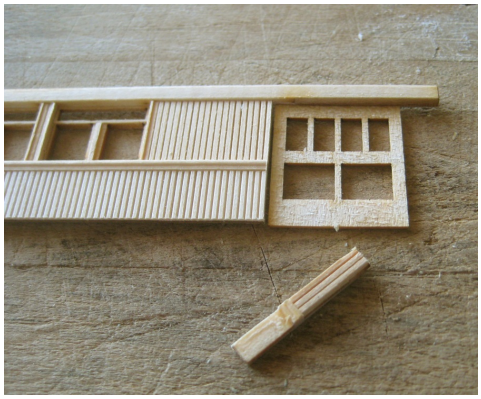
Showing the trimming of the side panel with a machinst's square.



Showing the freight door fitted to the opening with removed scrap below. Also note that the scribed panel lines are trued to each other above and below the window sill.

Roof assembly:

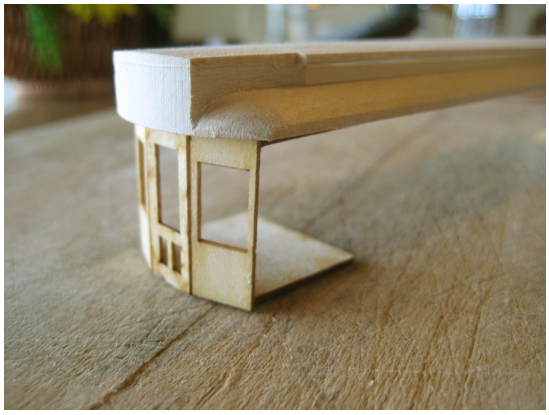
Once the roof length is established and shortened only if necessary, proceed to the "Roof Contour" article elsewhere on this web site. With the completion of the roof assmbly the basic structures of the model are complete and ready to be glued together.

Assembly:

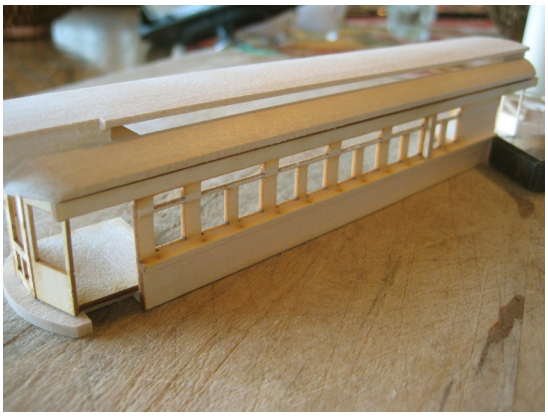
One last mock set up should be performed and the under side of the roof should be marked with a pencil both at the center door or window panel on the ends and also inside at the inboard edges of the shaping block.

The completed roof may be glued to the two end shape blocks. Photos below show how parts order to each other. Do not attempt to shorten the “tails” on the upper edge of the side panels at this time. Postion the roof on the two ends with floor sills and put the side up to the asembly. Align the walk through and freight doors to the floor sills for one last look at overall fit and confirming of your pencil marks. Turn the roof back upside down and glue end assemblies in place on under side of roof. Confirm pencil marks and assure that the shape blocks are centered on the roof and square to the sides.

When end assemblies have set up, turn model right side up, align end sills to pencil marks previously drawn and glue the end sill floors to the lower shape blocks. Be sure that these too are square to the center line of the model.



Roof sitting on end assembly.



Side panel placed against ends and roof and aligned to door openings. Check for correct roof over hang and front floor sill.

Proceed to gluing the side panels onto the roof and end assemblies. At the freight door end there will not be much glue surface at the floor sill and the side panel. This will be strengthened later. Check that side panels are perfectly straight along the roof. If not, care will need to be taken to hold or block the inner side location while gluing. A stiffening strip will be added below the windows at a later time. Glue the most warped side panel first as the first applied has the most working space from the opposite side. A small strip of wood can be clamped to the underside of the roof to hold the side in proper location. Pull a line of glue along the top edge of the side panel and place on underside of roof. Place a dot of glue where the tails intersect the window panels on the end assemblies and also a dot of glue on the floor sill blocks. Locate side panel with door openings of the sill blocks. Everything should come together at this point and above instructions should now make sense. Be sure that the doors and windows on the end assemblies are perfectly vertical, that is square up from your work surface. Check repeatedly while glue is setting for the wall to remain straight and parallel to the roof edge overhang. Glue only one side to the car assembly at a time.

At this point the floor board has not been secured to the structure. This is the time where the powering of the unit begins. Hopefully you have in hand the drive mechanism of your choice. Plot where you want the king pins of the trucks to be located thus establishing wheels base. There will be a sharing of the opening for what ever drive you have chosen. Some of the clearance is evident from the curved opening in the end sill and the rest will need to be opened in the floor board. As each drive mechanism is different, it is not possible to show all possibilities here. A consideration also must be made for the height of the bolster that will locate the model above the drive truck. This may be done with wood or a sheet brass structure of your choice. Some mechanisms come with “wings” that are

intended to be the bolster and only need to be located vertically for both appearance and operational capability. The best practice however is to secure the mechanism to the floor board. This will allow easy removal of the superstructure for service. Later a strip or wood will be glued to the inner sides of the model that will receive the wood screws that secure the floor to the model.

Once the mechanism is accounted for, the upper shell and door and other parts can resume. When assembling in the doors, both walk through and freight, they will not be terribly secure but as the quarter round moldings are added strength will be gained. Secure the doors by gluing at the top and bottom. The sides of the doors are not important at this time. Once the doors have time to dry, begin making up the quarter round door moldings. When gluing these in, apply glue to all surfaces that will contact the door and the body shell that will house the door opening. If your miters are not perfect at the top, no worry, Squadron Putty to the rescue. This is a lacquer base product that comes in a tube, available at most hobby outlets and works very much like automotive bondo.

The header boards can now be fitted on each end of the model over the windows , below the roof. These come in the kit and are pre-rounded and shaped for this purpose. They will however be a bit long as you have left the tails extend beyond the ends of the model. Reduce the length equally on each side of the curved header until a tight fit is achieved between the tails. When the glue has set up round off the tails to conform with the curvature of the roof line. This places the seam on the front and rear of the superstructure and less noticeable on the sides. It also offers more structural strength to the entire model. The header is clearly shown below in the completed model of a freight motor.

Labelle electric box motor with a Proto 2000 power mechanism.