

The following information and photographs are what I did to build the kit. Your methods and needs may differ from this which is fine. There is no right or wrong way if you are used to scratch building. The idea is to make a final model that fits your railroad.

You can print these instructions by selecting them and copy and past into MS Word or similar program and print from there.

I do recommend having trucks and couplers on hand so they can be used to determine your final dimensions. Most kits include grab & step irons, truss rod wire & turn buckles and other various items for each particular car. You can add additional items as you desire. Most detail parts are available from Grandt Line, Tichy and others.

You can also modify the wood parts to get a shorter or narrower car, or you may want to add a name board or other detail. The point is, make it your own. Now for my tips.

## Passenger Coach/Parlor/Combine Assembly

Make sure you have all the parts shown in the photo. Any missing parts will be sent free of cost. Also, have your trucks and couplers on hand so you can complete your assembly to work with them. Some of your parts and modifications will depend on these and on you making them match the other cars on your railroad.

The primary instructions are for the Coach, with additional information for the Parlor and Combine. All three cars are the same size and use the same assembly methods. You may find better methods and of course are free to use what works for you. Just try not to get ahead of yourself and get blocked into a corner.

### KIT CONTENT PARTS

COACH



PARLOR



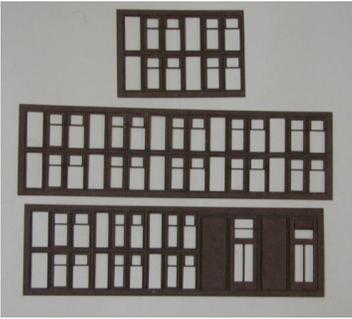
COMBINE



Depending on your assembly preferences, you should consider painting the ends and sides now. Don't forget to paint or stain the inside also. It is also easier to assemble and install the windows and doors now, although some modelers may prefer to do it later.

**NOTE:** After my most recent assemblies, I believe it is preferable to paint or stain the sides, ends and roof, prior to gluing them together. And then add the small detail pieces after the kit is assembled. For me, it was difficult going back and trying to touch up all the grab irons, hinges and stirrups after painting.

The example I show is for the narrower end windows but the method is the same for the side windows. The new windows in the kits are of a lighter colored material and have an adhesive backing. You may want to add a very slight drop of glue after positioning each window part in the opening.



First, paint them while they are still in the carrier sheet. Don't forget to touch up the inside edges. I use a small marker to lightly go around the inside. You can also add glazing to the back of the doors and window sash now. An alternate method is to glue a long piece of clear plastic on the inside of the walls and build the windows inside the openings. This is your choice.

I added thin acetate glazing to the inside of the upper sash first and then cut it from the carrier when dry. I use a very thin line of canopy glue or CA to attach the acetate. I then glued a heavier plastic (cut from food containers) to the back bottom of the inside sash. I made the inside sash glazing slightly larger than the window. This will give something to glue to the inside wall when installing them. (see my photos) Note: The new windows have an adhesive backing so they may be easier to assemble.

However, on my most recent assembly, I believe I have found an easier method for assembling the windows. After attaching the acetate to the back of the upper window sash, I cut it from the sheet. I also cut the inside window sash from the sheet and inserted it into the car side opening, with the side flat on the work table, pushing the sash flush with the interior of the side. I then put a very small bead of glue around the edge of the sash, which will glue the sash into the opening and at the same time allow a small amount of glue to hold the outer sash. Then place the outer sash into the opening and press it down tight onto the inner sash (remember to keep the acetate on the interior). Remove any excess glue that might squeeze out. Next, cut the outer frame from the window sheet and attach that to the outer sash. Now you can add a sheet of acetate on the interior of the side of the car covering the lower sashes.

This method uses the window opening in the car side as an alignment jig while gluing up the windows and works much better than trying to assemble the windows outside of the opening.



Preferred Method below:



Do the same for the doors, except use some scrap from the carrier sheet as the panels on the lower back side of the door.

You can now add the Window Sills to the sides. Cut the sill strips included in the main kit package to approximately a scale 3" [1/16"] longer on each end (plus 1/8" window to window). Apply the square sill to the side, just under the windows using small amounts of glue. After that has set, glue the sub-sill directly under that (see the photo below).



**COMBINE CAR Extra:** The combine kit comes with the side doors still installed in the sides. Carefully cut these out. In the small parts package is 1/16" square pieces to be used for the door frame and sills. Cut the bottom sill and top header to fit in the door opening. Place these in position (don't glue yet), then measure the height and cut the side frame pieces. Now, remove and paint these pieces the color of your trim, except for the bottom sill which should be the color of your flooring. You can now glue the door in place, either closed or open.

The Body assembly is next. Glue the floor to the frame, making sure the step cutouts line up. You should also paint or stain your floor now and paint the underside of the frame (don't paint the frame outside edges). Now apply a small amount of glue to one end of the frame cutout (or the inside bottom of the end panel) and slide the end into the cutout, making sure it is flush with the bottom (underside) of the frame (set the frame on a flat surface and push the end all the way down on both sides). If it isn't flush, it won't align with the sides and the roof won't fit properly. Also, make sure it is square with the floor. If it is not square, the edges won't align with the sides. Now, glue the other end on.

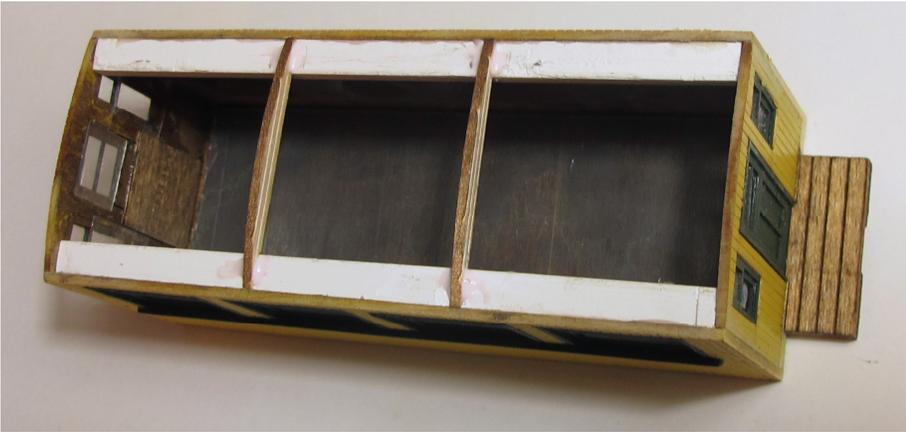
Now apply a light amount of glue to the frame edge and the end edges on one side of the car. Carefully attach one side, making sure it is flush with the frame bottom and that each end is flush. If the side is slightly long, the ends can be trimmed after the glue dries. As you proceed with each step, allow sufficient time for the glue to dry.



Next is to add the roof trusses to the underside of the roof. Mark a line on the inside of the roof on each end, the correct distance to locate the inside of the end wall (leave a little space so the truss doesn't hit the end). Then mark the center and mark lines half way between the center and ends. Also mark a line along both sides to indicate the inside of each side panel. You don't want the trusses to interfere with the sides when putting the roof on.

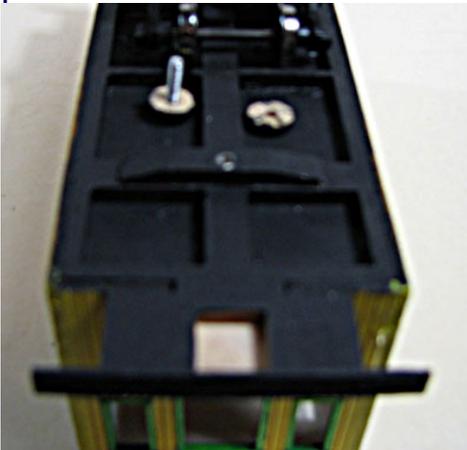
Now, to get the slight curve in the roof, put a couple of small rubber bands around the roof and cause it to flex to the approximate curve. Apply a light coat of glue to one truss and place it at the half way line (remember to keep it inside the edges). With the truss in place and inside both the edge lines of the roof, use small clip clamps to hold each end until dry. Do the same on the other midway and the middle truss. You may end up with a warp in the roof, but this will straighten out when you glue it to the car. Do not glue the roof on yet!

**Alternate Method:** On the Parlor Car, the side had a curve in it so I added a piece of stripwood (from my scrap box) along the top edge of each side (yours don't need to be that heavy). I then glued the ends of the trusses to these "beams". You may find this method to be easier except it takes a little fussy work to get the roof glued on square to the car this way. I only used 2 trusses here but you should use the 3 that are included in the kit.



Now, to the underside of the car. You need to add a bolster/spacer to keep the truck wheels from hitting the frame and allowing it to swivel. This is where having your trucks on hand will help you decide on how to proceed. On the coach, I used the Bachmann On30 "low frame" arch bar trucks which have 21½" wheels (#29904). Included in the kit are ⅛" thick full width bolsters. With your razor knife, add a taper to the ends of each bolster. Glue these to the frame at each bolster location, remembering to keep these centered on the frame. I then had to add the round spacer between the truck and bolster for my wheels to swivel. A thicker bolster or smaller wheels would alleviate this. However, on my latest build of the Parlor Car I used San Juan trucks with 19½" wheels and the height was fine. Using the Boulder Valley T-2 trucks would also give the same height and no filler block was needed.

Drill a #60 hole in the center of each bolster for #2-56 truck screws. I used another of the round wood spacers in the center of the truck frame as washers to keep the screw centered and eliminate wobble. If you use the BVM or SJ trucks, you won't have this problem.



Before the next step, touch up any paint on the corners as it will be difficult later on. The grab irons are next. If necessary, use a #74 drill and ream out each hole in the sides and end. Take the .015 brass wire included in the kit and cut/bend it to the correct lengths to fit into the holes. (From the 3" wire, cut ¾" for the 4 short ones and from the 3 ¾" wire cut to 15/16" for the 4 long ones; the Combine has an additional 1 7/8" wire to cut 15/16" for beside the baggage doors.)

I made a jig to bend these. In a piece of thin basswood, I drilled a #74 hole the correct distance from the edge for each length grab iron. I then inserted one end of the wire into the hole and bent it 90°. I took it out and made it a true angle with a pair of pliers. When bending, make sure the short end is long enough to protrude on the inside of the wall and have enough length to be spaced off the outside of the wall by about .060 (1/16") (I use a thin piece of scrap as a spacer to slide under the grab iron when gluing). Put the bent portion back into the hole and bend the other end over the edge. Remove it and assure the bend is good (use pliers) then place the grab iron into the holes so it protrudes on the inside of the wall. You can also use a chemical blackener for the irons now to avoid having to paint them later on.

Apply a small dab of CA (super glue) to the wire ends on the inside then gently pry the grab iron on the outside and slip the .060 spacer under it until the glue dries. Use care here as it is difficult to correct the super glue if the grab isn't spaced properly.

There are two extra pieces of wire in the Combine Kit for use next to the side baggage door. Install these the same way. There are also two stirrup steps in the parts package for the Combine Kit. Install these under the side baggage door at the side closest to the grab rail.



You will now add the end beams to the frame. Keep the "extra" hole in the beam, towards your left when looking at the end of the frame. This is for the brake wheel shaft.

You should also be able to determine your coupler height at this time and make the end beam accordingly. I make my cars so the height works with the standard Bachmann cars. This meant I needed to add a fill block to the coupler pockets in the frame and the couplers (Kadee #5's) added to that. If you use the BVM trucks with 19½" wheels (36" HO) your car height may be fine. In this case you may need to notch out the end beam for the coupler box. Do what fits your railroad.

The next step is to install the end railings. The end beams are now pre-drilled for the railings but may require a slight reaming out of the holes. Try one of the railings first to see how they fit in the holes. Remember, that the brake wheel shaft goes towards the left side as you're looking at the end of the car. Use a #69 drill in the pin vise if needed. I then used cyanoacrylate glue (super glue) to glue the railing into the holes. I put each

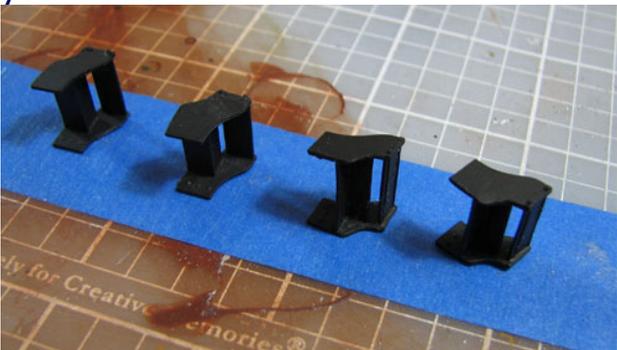
rail in place and after assuring that it fit, I backed the rail post partly out of the holes, one at a time, and applied the glue with a toothpick.



You can then add the brake wheel to the top of the single post. Place the wheel onto the pin shown and apply a small dab of CA. You may have to ream the hole in the wheel slightly (very carefully) to get it to fit over the post.

You can now assemble and install the couplers on the underside of the frame. You should also put the four step assemblies together now (parts included in kit). A tip I used was to place the ends on a piece of tape (sticky side up) and with the sides now firmly held, I could place the upper step (the 90° angled one) in the correct notch and then apply a small drop of styrene weld (MEK or similar) at the joint. Pay attention to the proper assembly orientation, look at the notches in the sides, and the positioning of the steps. Once the four are dry, place the opposite sides on the tape to hold them and turning the just finished ones over, hold them in place and apply weld at the joint. Make sure your sides and steps are reasonably square.

Now, after they are dry you can slip the bottom flat step into the correct groove and apply weld to both ends. Slight tweaking can be made to get the steps squared up. After dry, paint the steps, then glue them in place between the ends and end beams. Keep them at the proper height so a step at the top is the same height as the step in the assembly you made.



We're almost done. If you're going to add an interior, seats and LP's, now is the time. You may also want to add weight to the car. This can be done by adding sheets of lead into the frame cutouts or strips along the floor, under the seats. Sheet lead is available at all lumber yards (used for roof flashing). Now apply a light bead of glue around the

top edges of the ends and sides and place the roof in position. It may help to use rubber bands around the assembly until the glue dries. The only thing to do now is finish off the roof. You may have already painted it or maybe you want to simulate a canvas type covering. There are many methods for doing canvas, such as tea bags, or tissue paper, etc. glued to the roof and then painted. Tar paper IS NOT appropriate for an in-service car.

Add some weathering to your car and put it on your railroad. You are now ready to carry some of the LP's to their destination.

