

Phil's Narrow Gauge

Short Passenger Car Combine Kit

Part # PNG-013



Tools Needed:

Sand paper
Wood Glue
ACC Glue
#'s 66, 62, 55, 54, 52, 49, 48, 46 & 31 drill bits
Drill press and handheld "Dremel" type drill
Xacto knife
Needle nose pliers
Diagonal (wire cutting) pliers
Various plastic and metal small clamps
18" or 24" Ruler
Needle Files

Parts List

Wood

<u>Item</u>	<u>Qty</u>	<u>Description</u>
W-1	1 ea.	Frame, basswood, pre-assembled
W-2	1 ea.	Floor, poplar plywood, scribed both sides.
W-3	2 ea.	Outside car ends. Laser cut poplar plywood.
W-4	2 ea.	Inside car ends. Laser cut poplar plywood.
W-5	1 ea.	Inside bathroom wall. Laser cut poplar plywood.
W-6	1 ea.	Backside bathroom wall. Laser cut poplar plywood.
W-7	1 ea.	Inside bathroom side. Laser cut poplar plywood.
W-8	1 ea.	Outside bathroom side. Laser cut poplar plywood.
W-9	1 ea.	Inside stove side. Laser cut poplar plywood.
W-10	1 ea.	Outside stove side. Laser cut poplar plywood.
W-11	2 ea.	Bathroom walls. Laser cut poplar plywood.
W-12	1 ea.	Outside window rail. 1/8" X 1/16" X 18" basswood.
W-13	3 ea.	Outside window rail. 3/16" X 1/16" X 18" basswood.
W-14	2 ea.	Inside chair rail. 1/8" X 1/16" X 18" basswood.
W-15	8 ea.	Window panels, 1 upper, 1 lower, laser cut 1/32" birch plywood.
W-16	4 ea.	End doors trim. Laser cut poplar plywood.
W-17	2 ea.	Outside end doors. 1/16" laser cut birch plywood.
W-18	2 ea.	Inside end doors. 1/32" laser cut birch plywood.
W-19	2 ea.	Bathroom door trim. 1/16" laser cut birch plywood.
W-20	2 ea.	Bathroom doors. 1/32" laser cut birch plywood.
W-21	2 ea.	Baggage door core. 1/16" laser cut birch plywood.
W-22	2 ea.	Baggage door inner. 1/32" laser cut birch plywood.
W-23	3 ea.	Baggage door outer. 1/32" laser cut birch plywood.
W-24	2 ea.	1/4" X 1/4" X 4-1/2" basswood car width spacers.
W-25	2 ea.	1/4" X 3/8" X 18" clamping boards.
W-26	2 ea.	1/4" X 1/4" X 9" clamping boards.
W-27	4 ea.	1/8" Quarter Round X 3-3/4".
W-28	1 ea.	1/16" X 1/4" x 10" basswood stick for bathroom wall trim.
W-29	2 ea.	Upper baggage door glide. Laser cut poplar plywood.
W-30	2 ea.	Upper baggage door glide. Laser cut 1/16" birch plywood

Window Bag

WB-1	8 ea.	White metal side windows.
WB-2	1 ea.	White metal oval bathroom window.
WB-3	8 ea.	Lexon lower window glass.
WB-4	8 ea.	Lexon upper window glass.
WB-5	1 ea.	Lexon oval bathroom window glass.
WB-6	2 ea.	Lexon end door window glass
WB-7	6 ea.	Lexon baggage door window glass.

Chair Bag

C-1	8 ea.	White metal chair ends.
C-2	16 ea.	White metal chair rocker arms.
C-3	8 ea.	1/8" laser cut chair seats.
C-4	8 ea.	Chair back, back, 1/64" laser cut birch.
C-5	8 ea.	Chair back, middle, 1/64" laser cut birch.
C-6	8 ea.	Chair back, front, 1/16" laser cut basswood.
C-7	32 ea.	#20 brads

Bathroom Bag

B-1	1 ea.	White metal sink.
B-2	1 ea.	White metal toilet.
B-3	1 ea.	White metal tank.
B-4	1 ea.	White metal tank to toilet pipe.
B-5	1 ea.	1/16" laser cut basswood toilet seat.

Stove Bag

S-1	1 ea.	White metal stove base
S-2	1 ea.	White metal stove ash drawer (middle section)
S-3	1 ea.	White metal stove body
S-4	1 ea.	Laser cut poplar plywood stove platform
S-5	9 ea.	3/8" X 3/8" X 1/8" fire brick
S-6	1 ea.	1/4" diameter X 1-1/8" long stove pipe with 1/16" brass support.

Roof Bag

R-1	2 ea.	Cast resin roof ends with birch and poplar plywood carlins attached.
R-2	4 ea.	Laser cut poplar plywood carlin spacers marker C-2.
R-3	2 ea.	Laser cut poplar plywood inner end wall carlin marked C-3.
R-4	9 ea.	Laser cut poplar plywood main carlins.
R-5	1 ea.	Balsa wood center roof. 2.9" X 17.5" X 1/8".
R-6	2 ea.	Balsa wood side roof. 1.4" X 17.5" X 1/8".
R-7	2 ea.	Side roof trim. Laser cut 1/16" basswood.
R-8	2 ea.	End roof trim. Laser cut 1/16" basswood.
R-9	2 ea.	1/8" X 1/4" X 17.5" basswood roof edge.
R-10	4 ea.	1/8" laser cut basswood cast roof end trim.
R-11	4 ea.	1/16" laser cut birch plywood cast roof end trim.
R-12	2 ea.	1/16" X 3/8" X 17.5" laser cut clerestory panel
R-13	20 ea.	1/16" laser cut birch plywood window trim.
R-14	20 ea.	1/16" laser cut Lexon windows
R-15	1 ea.	Pattern Ease for papering the roof.
R-16	4 ea.	White metal roof vents
R-17	1 ea.	White metal bathroom vent
R-18	1 ea.	Stove vent

End Platform Bag

EP-1	4 ea.	White metal end rails, 2 left, 2 right.
EP-2	4 ea.	White metal hand rails, 2 left, 2 right.
EP-3	2 ea.	White metal lock pawl.
EP-4	2 ea.	.051" X 2" music wire brake staff.
EP-5	2 ea.	White metal horizontal brake wheels.
EP-6	2 ea.	White metal vertical brake wheels.
EP-7	2 ea.	1/32" X 6" brass retainer airline.
EP-8	2 ea.	White metal retainers.
EP-9	8 ea.	White metal truss rod NBW.

Platform Steps Bag

PS-1	8 ea.	1/16" laser cut inner step sides, 4 with NBW holes, 4 without.
PS-2	8 ea.	1/32" laser cut outer step sides, 4 with NBW holes, 4 without.
PS-3	4 ea.	1/16" laser cut upper step.
PS-6	4 ea.	1/16" laser cut kick plate.
PS-7	4 ea.	1/16" laser cut bottom step.

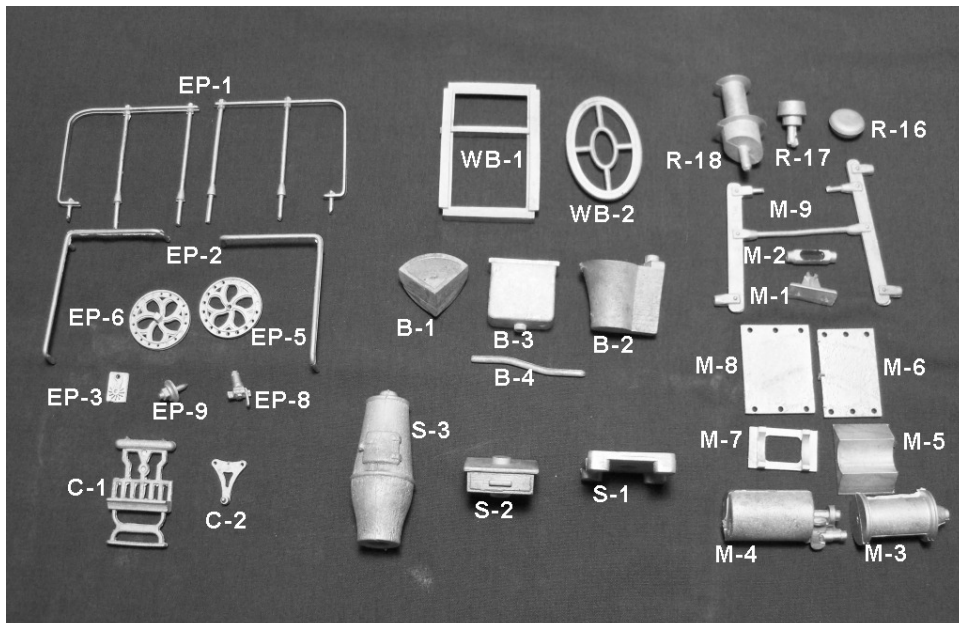
Under Car Bag

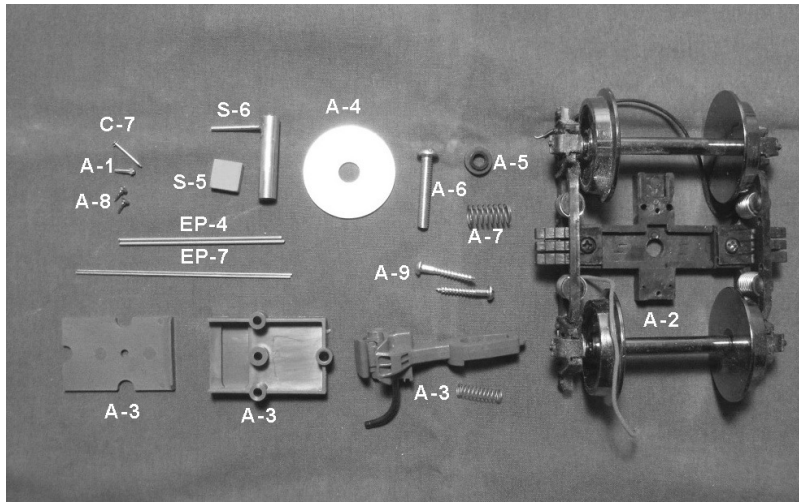
M-1	8 ea.	Queen post.
M-2	4 ea.	Turnbuckles.
M-3	1 ea.	Brake cylinder.
M-4	1 ea.	Air tank.
M-5	1 ea.	Brake cylinder saddle.
M-6	1 ea.	Brake cylinder mounting plate.
M-7	1 ea.	Air tank saddle.
M-8	1 ea.	Air tank mounting plate.
M-9	1 ea.	Brake lever assembly.
M-10	4 ea.	16-gauge aluminum, 15" truss rods.
M-11	2 ea.	16-gauge aluminum, 15" (brake pipes & rigging).
M-12	2 ea.	Turnbuckle boards, 1/32" basswood.

Misc. Parts

<u>Item</u>	<u>Qty</u>	<u>Description</u>
A-1	20 ea.	Brass Nut/Bolt
A-2	2 ea.	Aristocraft Short Passenger Trucks
A-3	2 ea.	Kadee 906R Couplers
A-4	2 ea.	Fender washers, truck spacers
A-5	2 ea.	Black plastic truck mounting screw centering washer
A-6	2 ea.	8/32 truck mounting blots
A-7	2 ea.	Truck mounting springs
A-8	5 ea.	Dollhouse doorknobs.
A-9	2 ea.	#4 Wood Screw (attach Kadee coupler)
A-10	2 ea.	Dollhouse door handles for baggage doors (not pictured)
A-11	2 ea.	1/8" X 5-1/2" brass channel.

White Metal Parts



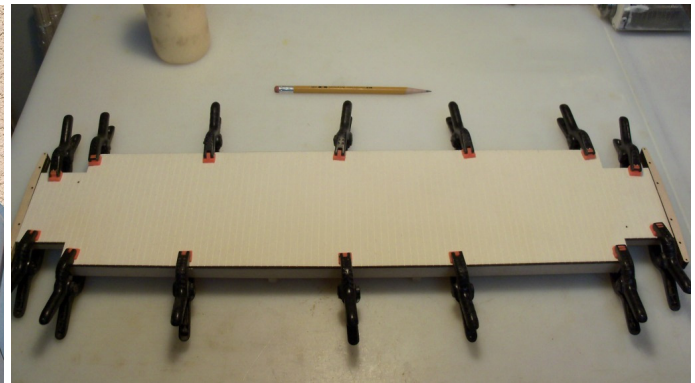


Step 1.

Follow Step 1 in the coach instructions to clean up fuzz and excess glue from the frame and drill holes for the truss rods and brake levers.

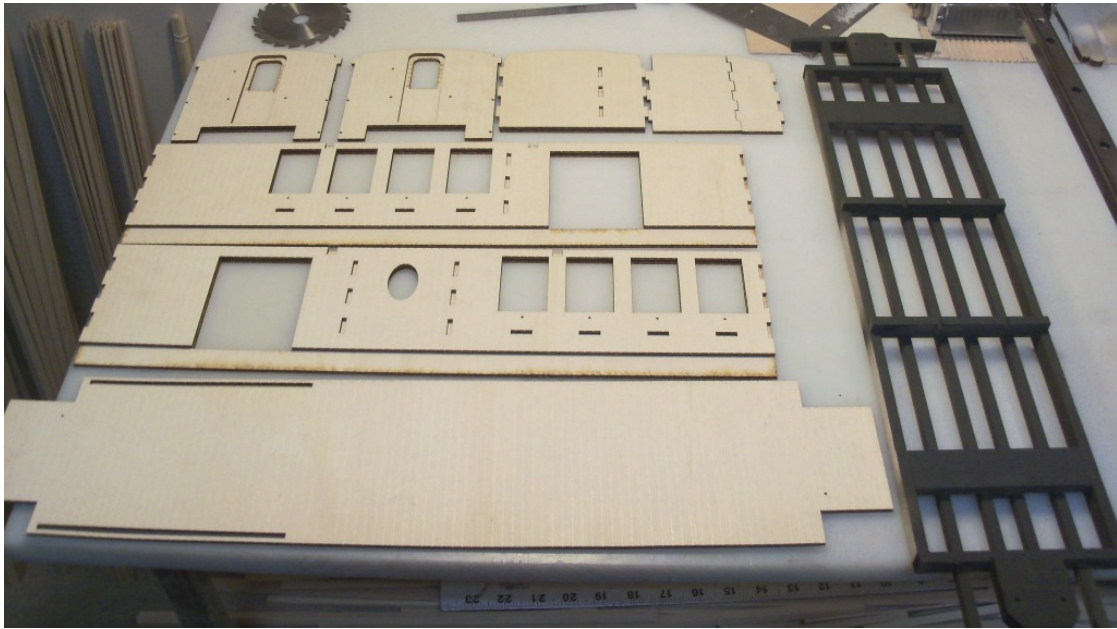
Step 2.

Glue the floor to the frame being careful not to allow any glue into the cutouts for the brass channel which the doors will slide in. I painted my frame before gluing the floor down and then painted the bottom side of the floor afterwards. Floor pictured is from the coach. The combine floor has 2 slots for the brass channel.



Step 3.

Glue the 4 sides pieces together as done with the coach as well as the 4 inner and outer ends. Plus, the dividing bathroom wall to the back-side bathroom wall.

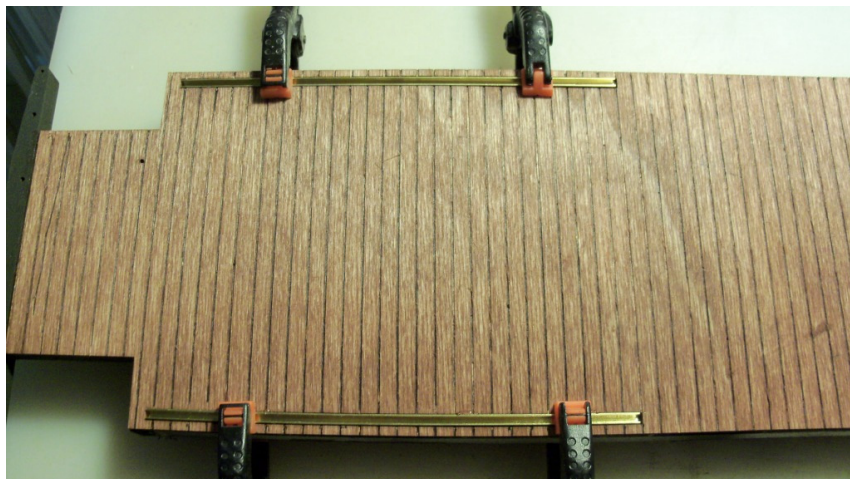


As emphasized in the coach instructions, all these walls need to be glued together flat, aligned and snugly together. Use plenty of weight to squeeze the walls together. Here I'm using old spin casting molds.



Step 4.

Darken the scribe lines in the floor and stain. Also glue in the 2 brass channels and clamp till dry.

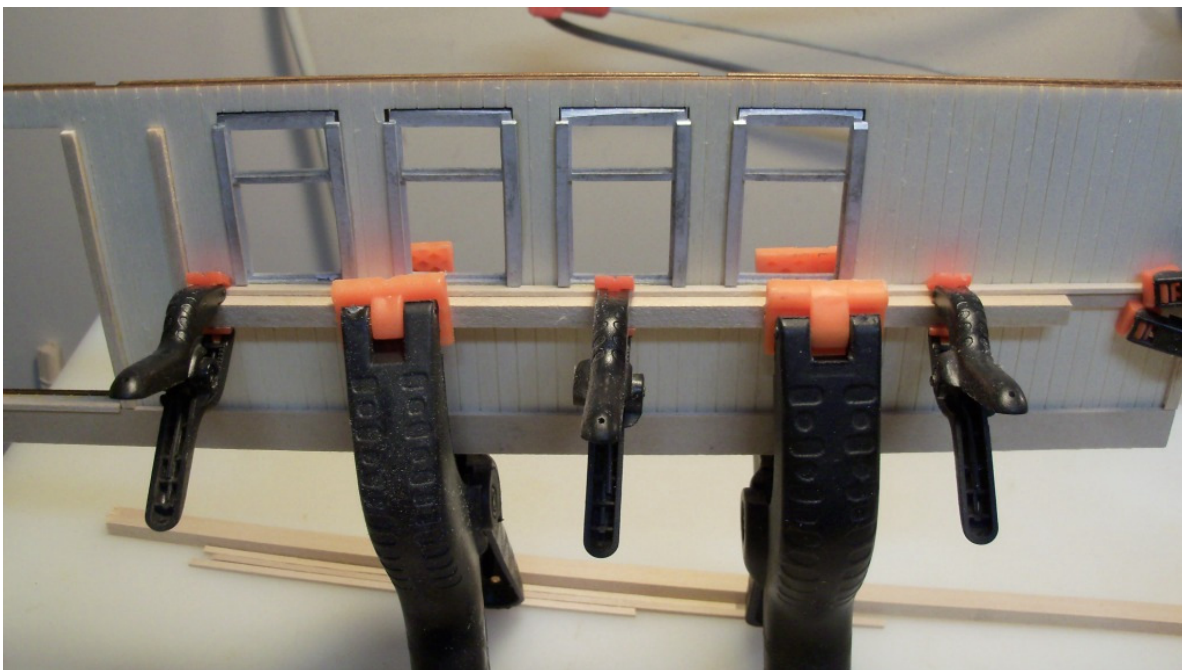
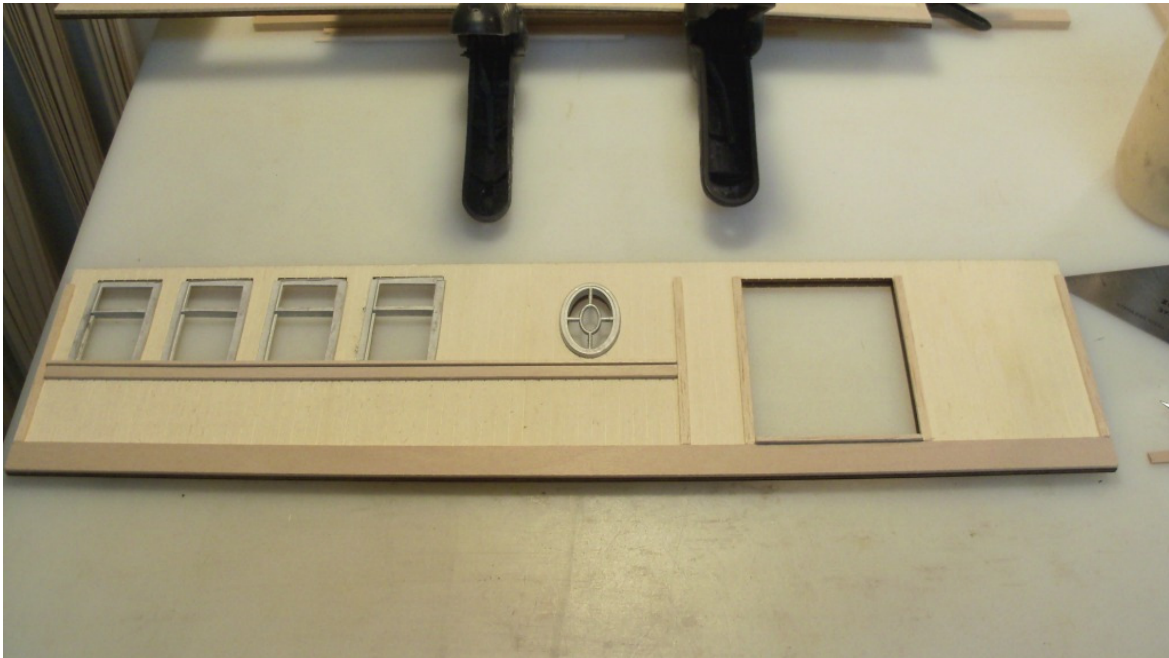


Step 5.

Glue the outer door trim and doors to the outer car ends following the coach instructions. Glue only the inner door trim to the insides. The insides need to be stained and the windows glued in before the inner door is glued in.

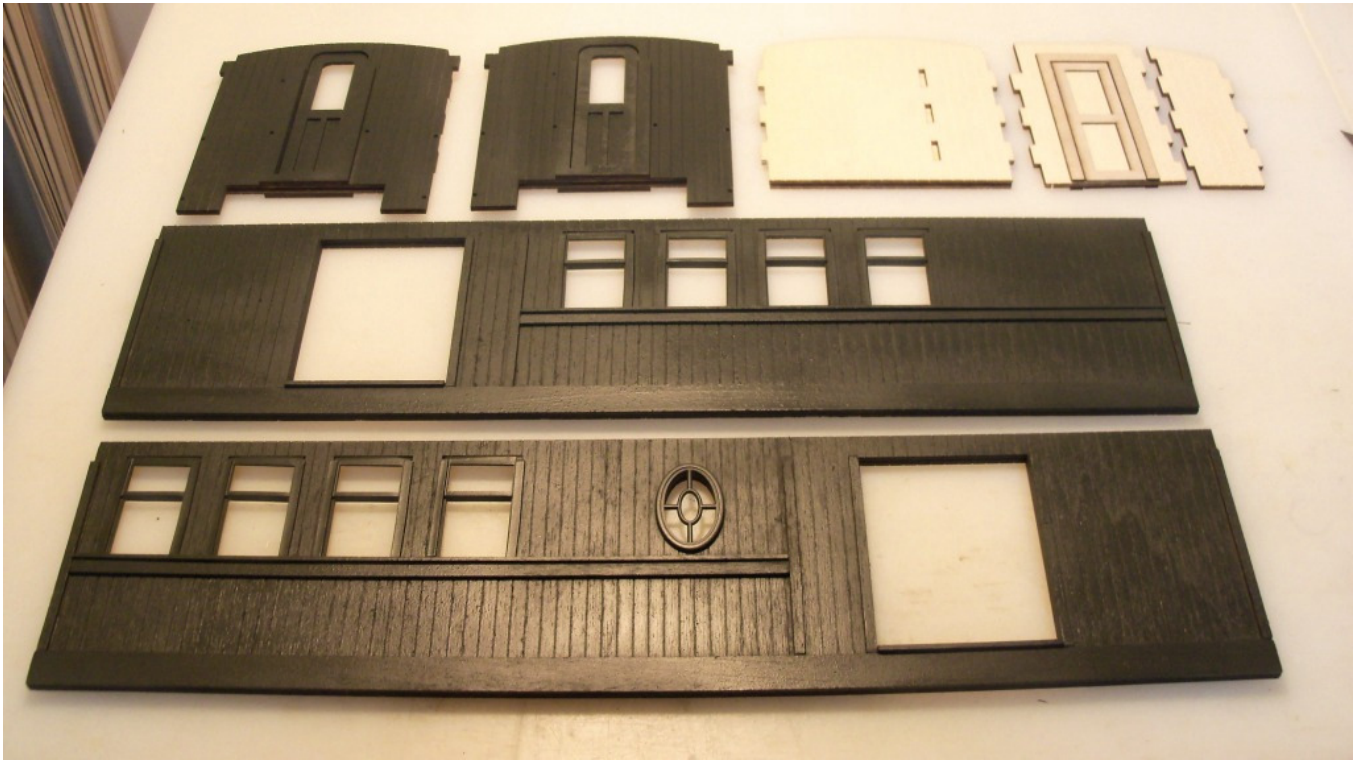
Step 6.

Glue the 8 white metal windows and the oval bathroom windows to the car sides. Add the window trim as you did on the coach. This is how I placed my trim around the windows and baggage door.



Step 7.

Paint all the outside walls. I've found several light coats is better than one heavy coat.



When dry, add all the window panels and chair rail to the inside of the walls. Also add the bathroom door as you did with the coach bath walls. Chair rail will only be applied to the coach end of the car. When dry, stain all the inner walls.



Step 8.

Gather up the cast roof ends, spacers marked C-2 and C-3. Please find the extra spacer cut in 1/32" birch verses the 1/8" poplar plywood. When I put both the combine and RPO together I had a heck of a time fitting these roof ends over the car ends. The space was too narrow to fit over the end walls. Whether the wood was from a different batch or ??? I had to do a lot of sanding of the end walls and the roof ends.



I've added a third spacer in the 1/32" plywood to help widen the space over the wall ends. So, on the coach, you glued 2, C-2 spacers and then the C-3. On both the combine and RPO, you have 2, 1/8" and 1, 1/32" C-2 spacers. Otherwise, follow step 8 in the coach instructions.

Step 9.

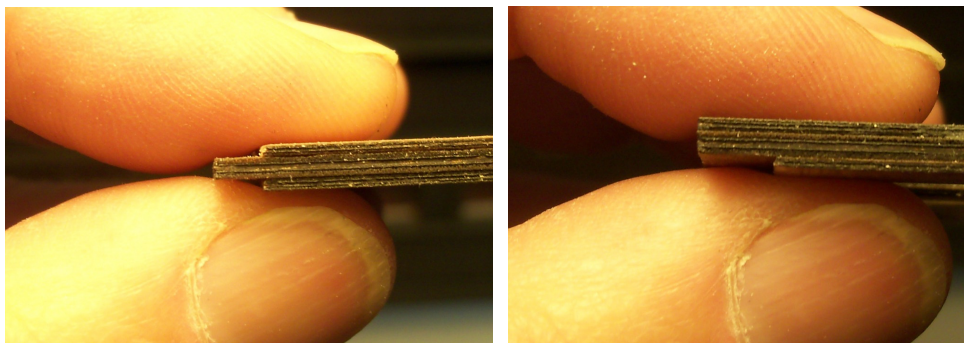
Buildup the 4 steps following the step 9 in the coach instructions.

Step 10.

Glue all the windows in following step 13 in the coach instructions. Remember to leave an upper window glass out on the windows closest to the ends for clamping the car sides and ends when gluing the them together.

Step 11.

Gather the baggage doors and baggage windows. The door has 3 section. An inner core cut in 1/16" birch plywood and the inner and outer skin cut in 1/32" birch plywood. The inner is shorter than the outer. The slot in the brass channel is approx. .075" to .080". The 1/16" core is approx. .065" or more. When gluing the skins to the core, you need to leave 1/8" form the bottom of the core as pictured.



First glue the outer skin to the core. It will be flush to the sides and top of the core. Then paint the outsides and let dry. Then stain the insides and inner skin. Place the windows in the openings. You don't need to glue them in as they'll be securely locked in. Then glue the inner skin to the core. You'll have a 1/8" gap at the bottom and a .200" gap at the top. The upper glide opening is only .110" and the core and outer skin make up something over .100". The picture on the right on the previous page shows a side view of the top of the door. You can see this .200" gap next to my thumb.



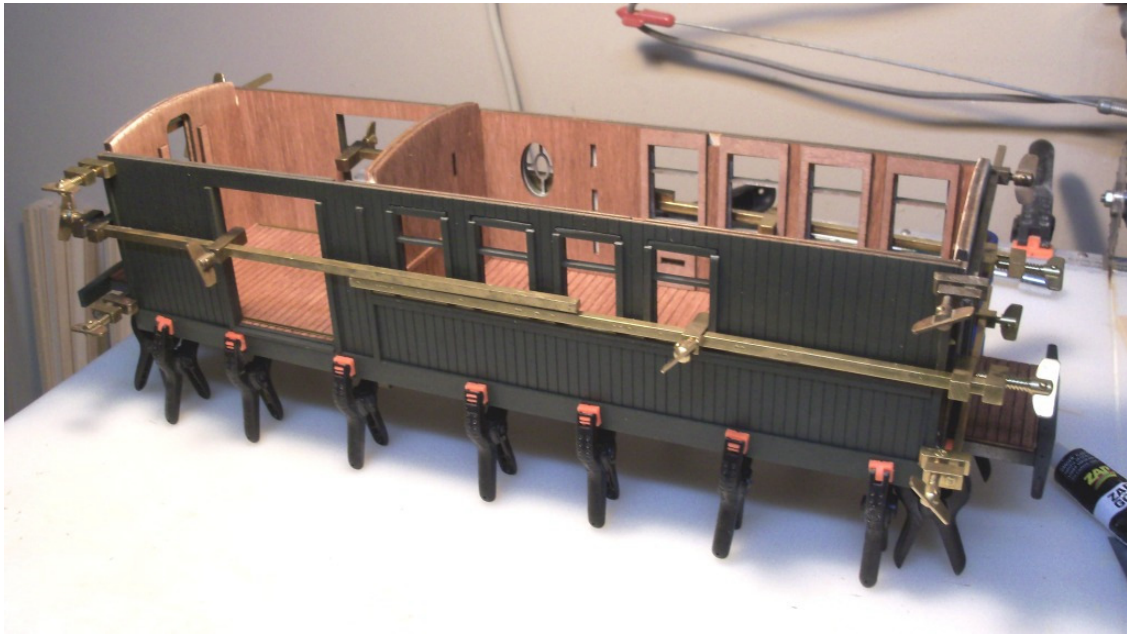
Step 12.

Add the doorknobs and door handles to the end doors, bathroom door and the baggage doors. I have supplied 15 nails for the door handles for the combine and RPO doors. You need 12. These are TINY !!! If you lose one, you have 3 spares. Beyond that, they are a House Works part, 1129. I bought them from Miniatures.com. They come 100 mails for \$3.75



Step 13.

Time to glue the sides, ends and bathroom dividing walls to the frame. This is step 14 in the coach instructions. Only difference is the bathroom dividing wall. So as to not get glue all over the inside of the side walls, I put a drop of glue into the 3 tabs on each side for the wall. Then glued the sides and ends to the frame but only holding with the plastic clamps along the bottoms of those walls and not in the middle of the side walls. I fit the dividing wall into place and then added all the rest of the clamps.



The larger brass clamps easily fit between the car ends and the baggage door openings and the upper windows you left the glass out of.

Step 14.

Put the 8 seats together following step 15 in the coach instructions. Also paint the toilet parts and blacken and glue the stove parts together.

Step 15.

Glue the 8 seats in following step 16 in the coach instructions.

Step 16.

Glue the toilet, tank and connecting pipe following step 17 in the coach instructions. Stain and glue the stove platform in place. Glue the fire brick into the platform opening. Glue the stove down and drill a hole for the stove pipe brace. Test fit the bathroom walls and then glue in.

Step 17.

Assemble the roof following all the procedures in step 18 of the coach instructions. The main carlins are easily spaced between windows in the coach section. I used a clerestory side trim as a guide on the baggage section making a mark for a carlin between clerestory windows on the 1/8" by 1/4" wall cap. Otherwise, the construction of the roof frame is the same as the coach.

Step 18.

Following step 19 of the coach instructions, cut the balsa center and edges and glue to the roof frame. Also glue the end roof trim pieces. When dry, sand any uneven edges smooth.

Step 19.

Glue the side trim and roof end trim following step 20 in the coach instructions.

Step 20.

Prime and paint the roof following step 21 of the coach instructions.

Step 21.

Add all the underbody hardware per step 22 of the coach instructions.

Step 22.

Add the quarter round to the outside corners per step 23 of the coach instructions.

Step 23.

Add the steps per step 24 of the coach instructions and paint once dry.

Step 24.

Add all the end platform hardware per step 25 of the coach instructions.

Step 25.

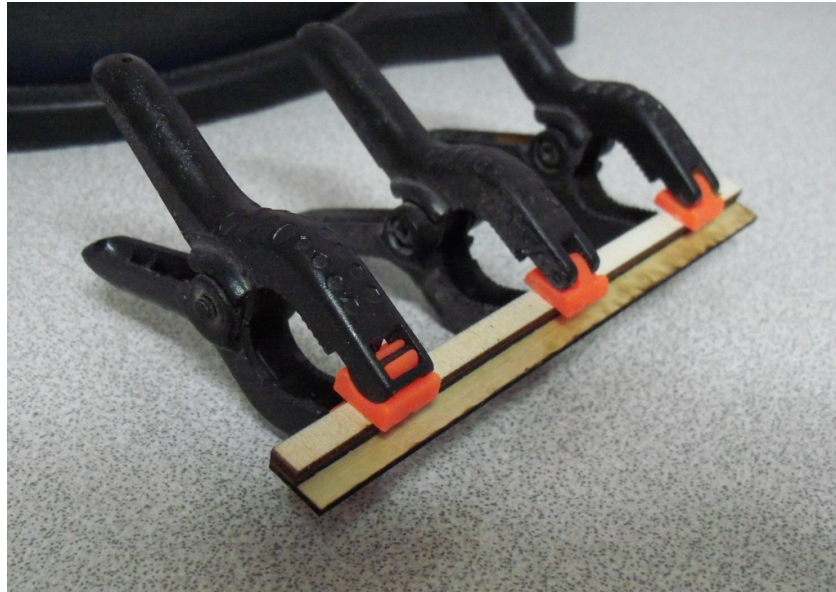
Add the couplers per step 26 of the coach instructions.

Step 26.

Add the roof vents per step 27 of the coach instructions.

Step 27.

Gather the upper glide wood for the baggage doors. Glue the 1/8" poplar plywood to the 1/16" birch plywood. Keep one edge even.



When dry, stain the birch plywood side and glue to the inside of the baggage section with the baggage door set into the brass channel. The glide should be even with the top of the side walls. Make sure the door can slide back and forth and no glue gets into the space where the door slides. Clamp until dry.



Step 28.

Add the trucks per step 28 of the coach instructions.

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 and I'm not always near a telephone.

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

San Juan Decals is stocking passenger car water slide decals. There are a couple other sources for custom decals. 1:20.3 decals are a tad to large to fit this car. Either On3 or custom decals might be a better fit.

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