

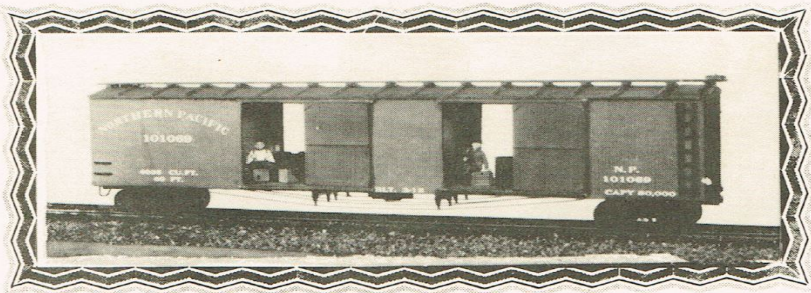
**Conductor Railway Hobbies
LLC**



Northern Pacific 60' Box Car
Product Reference Guide
2 Rail O Scale
L.C.L. Shipments #3712

Made In The USA

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SIXTY FOOT Less than CarLoad BOXCAR

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0.1 Introduction

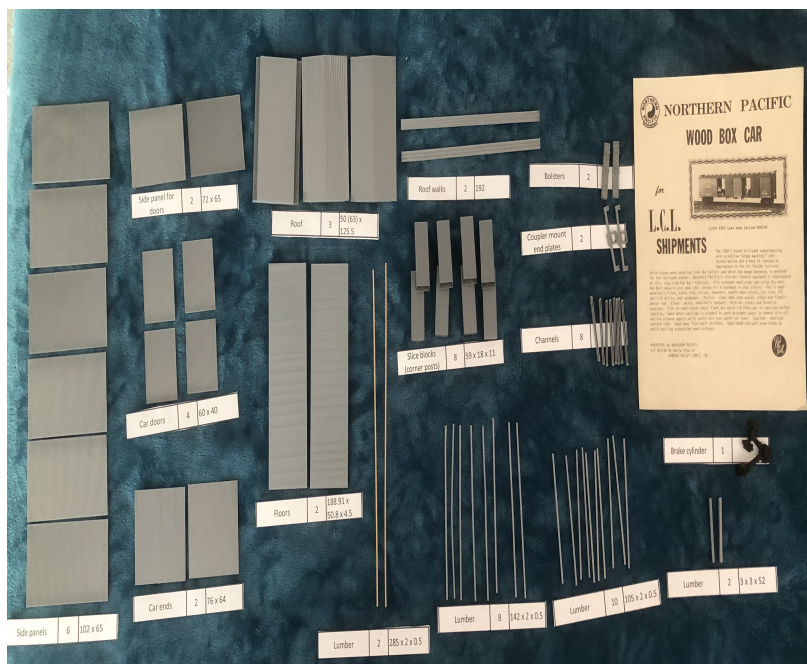


Figure 0.1: Parts Reference For Model NP 60'

Odds are, you do not have a model like this on your railroad empire.

For the entry level 2 rail O Scale Model Railroader, Conductor Railway Hobbies is putting Modeling back into Model Railroading with this Northern Pacific 60' LCL Box Car Kit.

The All Nation Line is releasing The Northern Pacific 1920s era LCL Box Car, a re-engineered version of the original Red Ball kit. The NP Car was unique due to the fact that the railroad was experimenting with a 60' car. Right around the 1910 - 1920 period freight cars were starting to be built using steel. Previous to that time construction was of wood and cast iron. Stock cars were a good example of this transition for obvious reasons such as longer service life, less upkeep and heavier loads. While longer wood passenger coaches had truss rods, the only thing that makes this car look a little different is the fact that it looks like a stretched 40' box car.

I say if you are going to build anything at all for your layout or collection, make it the unusual or unique piece. It seems at no time in the railroad industry was there a lack of innovation. This fact can be known by researching the patents to understand how better equipment evolved over time. And a driving force as can be noted in the history of the Northern Pacific Railroad was the need to meet their competition and drive the best value for their customers by trying new ideas and building upon prior successes.

Inspired by a kit that was put out many years ago by Red Ball, according to the original Red Ball documentation included in this kit, this model kit was designed by Merle Rice of Wabash Valley Lines, Inc. With the Internet making it easier to research

prototype railroad equipment, with CAD and 3D Printing, we hope to have improved upon such a unique model so that the beginner model builder can be successful and develop their skills. Most of the parts in this kit are replicated from the original wood kit and is the basic body.

Following are recommended steps to assemble the body without detailing the model. We leave that up to the model builder.

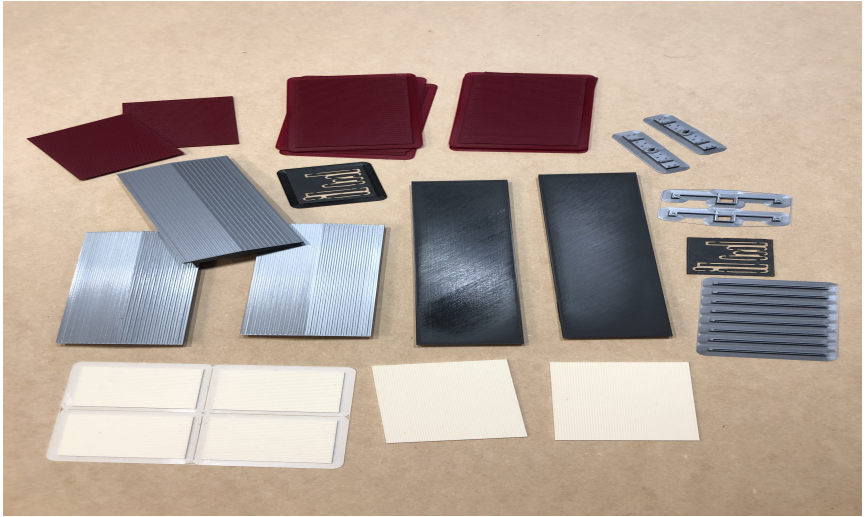
0.2 Components

The following parts shipped with this kit are found in the table below.

Northern Pacific Red Ball Kit Part Included with basic	Part Printed in 3D	Part Name	# of each part	Size in Millimeters
Yes	Yes	Bolsters	2	
Yes	Yes	Car doors	4	60 x 40
Yes	Yes	Car ends	2	73 x 64
Yes	Yes	Channels	8	
Yes	Yes	Coupler mount end plates	2	
Yes	Yes	Floors	2	188.91 x 50.8 x 4.5
Yes	Yes	Lumber	2	3 x 3 x 52
Yes	Yes	Lumber	10	105 x 2 x 0.5
Yes	Yes	Lumber	8	142 x 2 x 0.5
Yes	Yes	Lumber	2	285 x 2 x 0.5
Yes	Yes	Roof	3	50 (63) x 125.5
Yes	Yes	Roof walks	2	192
Yes	Yes	Side panel for doors	2	72 x 65
Yes	Yes	Side panels	6	102 x 65
Yes	Yes	Slice blocks (corner posts)	8	59 x 18 x 11
Yes	No	Brake cylinder	1	

0.3 Assembly

The first graphic illustrates parts that ship with this kit.



The next series of photos are close up shots to illustrate how this project goes together.

Parts may be printed in various colors for no apparent reason when it comes to building the kit. It just depends on what color filament we have in stock or installed on the 3D printers. Some parts may require cleaning up by removing brims or threads prior to assembly.

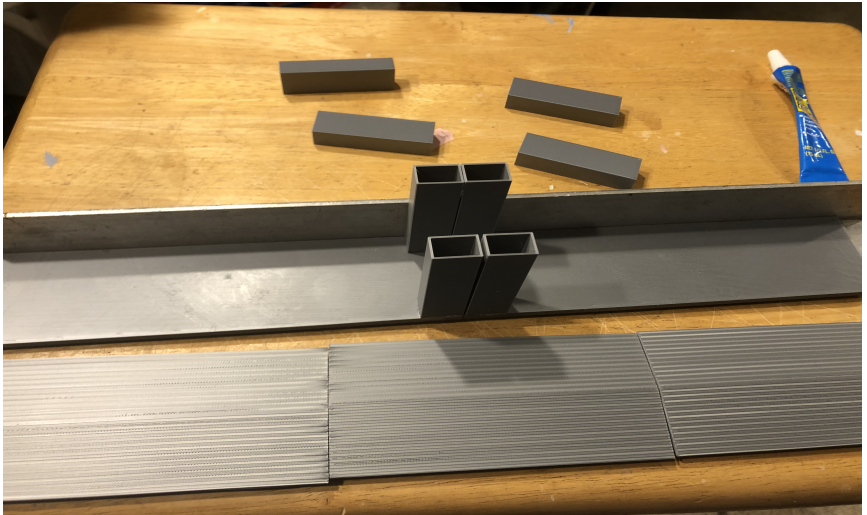
All parts are printed with PLA filament by Prusa Research. Before assembling your kit, we recommend reading the article on the Prusa Blog on gluing 3D Printed plastics. See our link in the Appendix below.

The photos showing the build of the basic body were glued with both Duco Plastic Model Cement and CA.

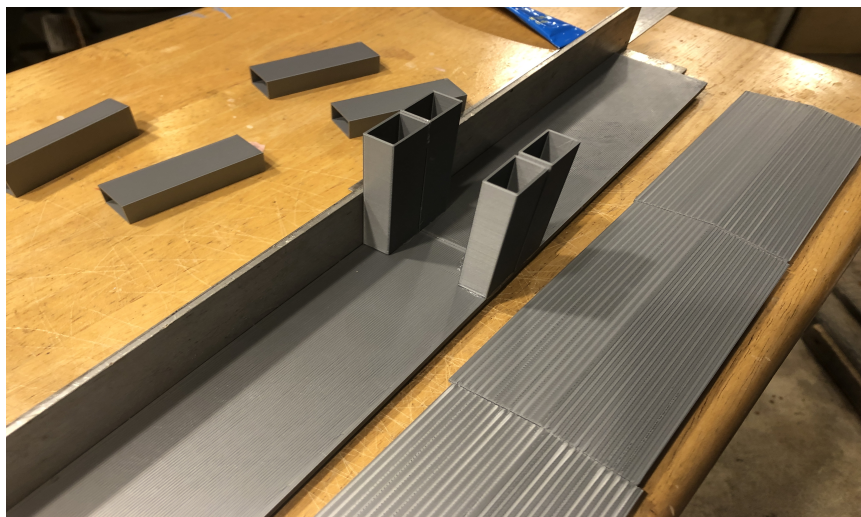
With regard to painting, there is a wealth of information on the Internet by other models that can inform you. In general, acrylic paints work well.

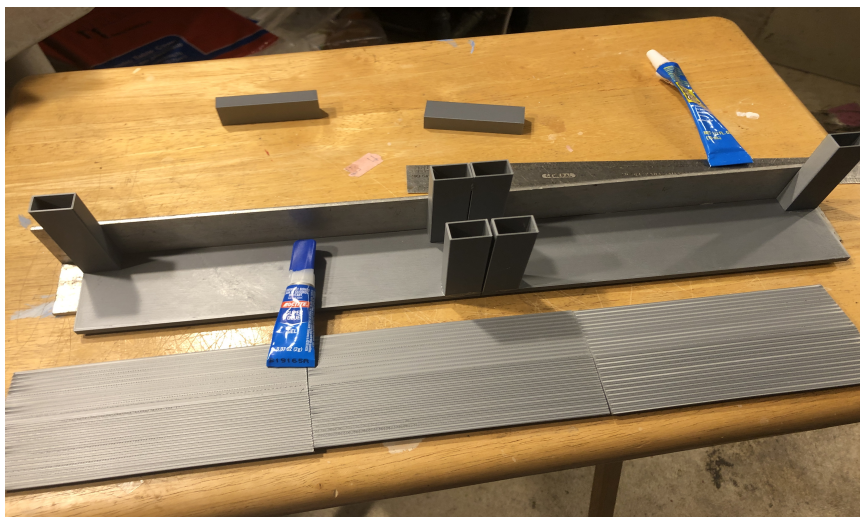
A useful aid in assembly is having a piece of angle aluminum to glue up your components so they are as square as possible.

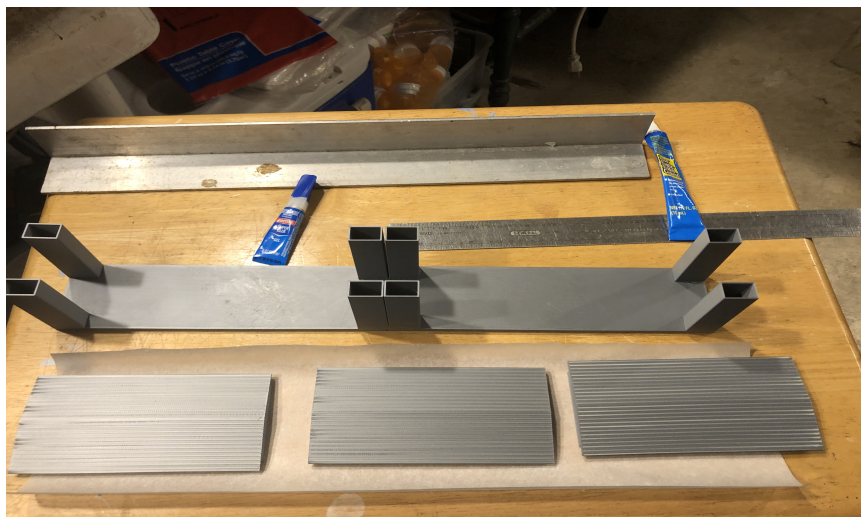
The first step is to lay out the 2 floor platforms and glue the 4 corner posts on each floor section.

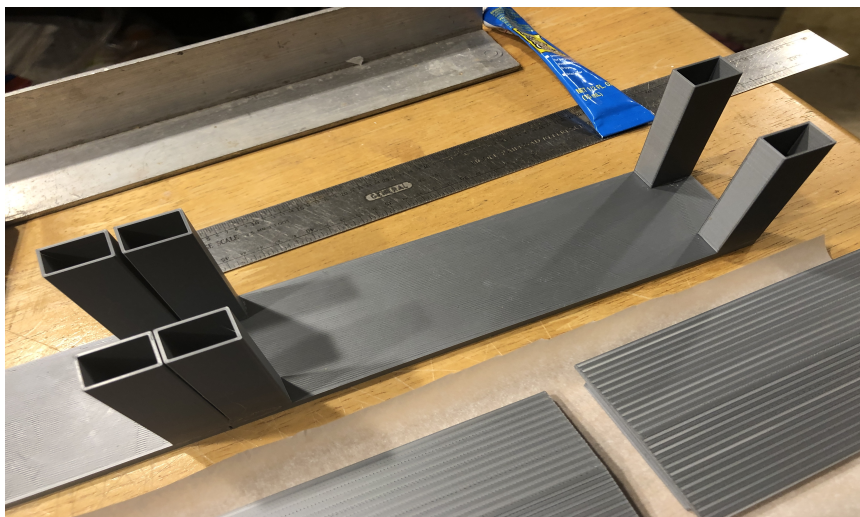


Ultimately, the 2 floor sections are glued together and joined with the center posts.









Note the corner posts are hollow thereby giving the modeler the option to add weight to the car that will not detract or be obvious to a viewer.

The next step is to glue the 3 roof pieces end to end using a piece of parchment paper. It not necessary to clamp these so long as they are flat and aligned. Once the glue is set, glue the roof on top of the corner posts.



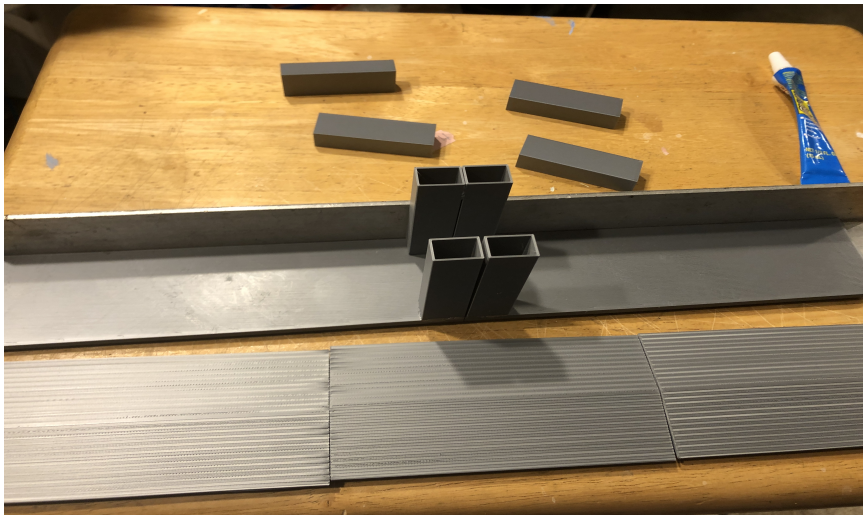
In the next photo we show what a painted car side looks like over laid on the body frame. There are 3 side panels per side.

The final step to assemble the basic body is to mount the end panels. So as to make it easy for the modeler, we took the liberty to print the ends so no cutting and fitting them is necessary.

Our photos show our exact replication of parts whereby the originals were all made of wood. Going from wood to plastics has its good points and perhaps some challenges. Where wood is nice to insert detail parts, plastics require pilot holes. However, it yields more accuracy in the final touches that one can put on the model. Wood also requires more work to prep for priming

and painting.

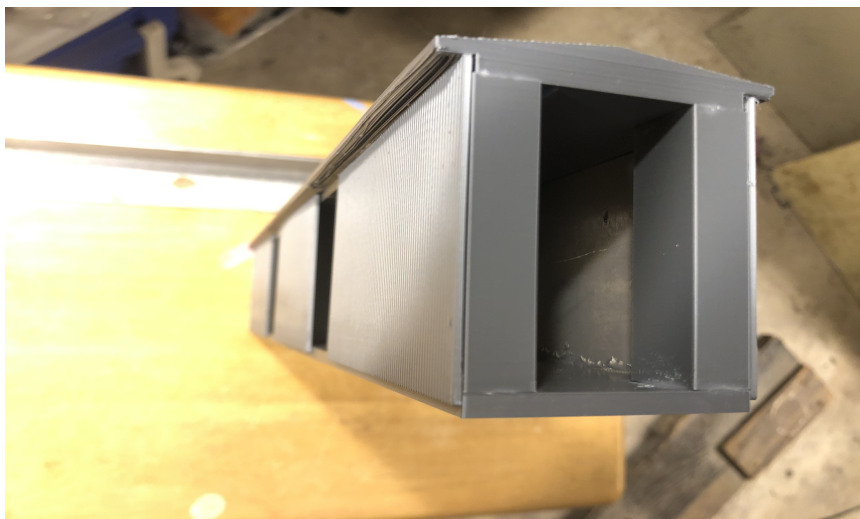
It should be noted that the door panels will need to be modeled with the lumber detail and we refer you to the original kit instructions for cutting the panel and gluing the door frame detail.

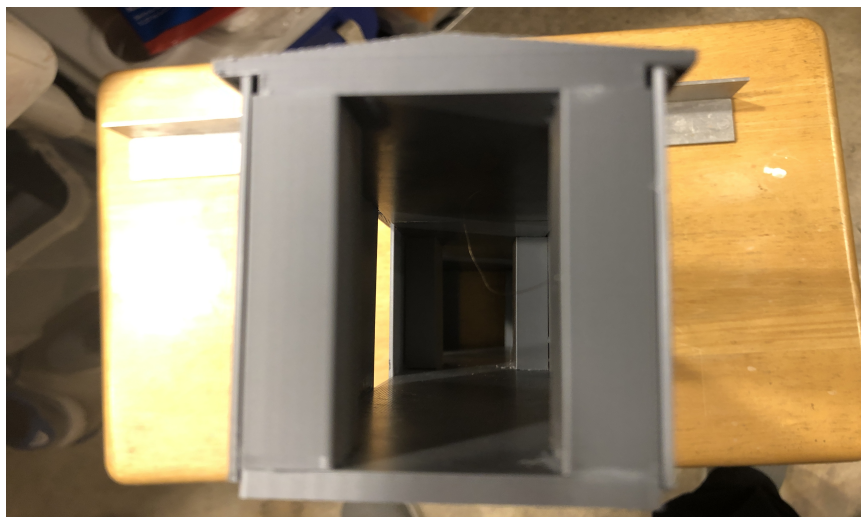


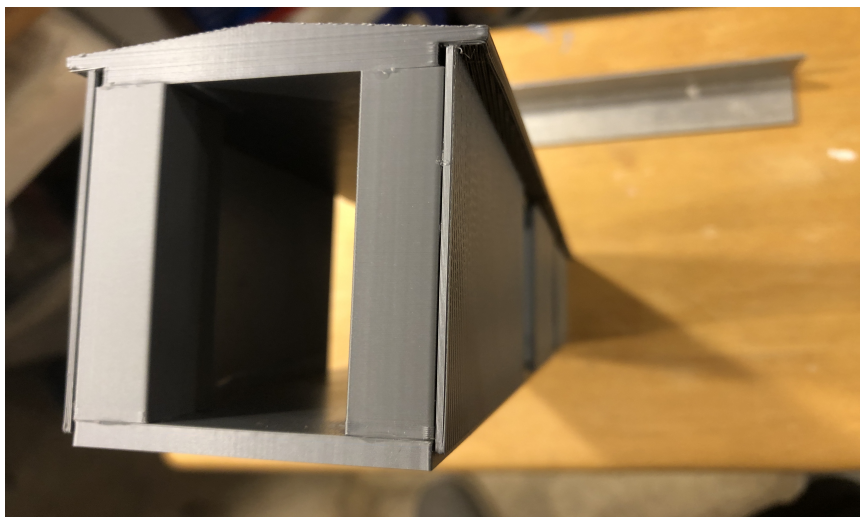


Mounting the side panels to make up the car sides, lay out the sides on the frame before gluing and mark the door opening spacing. The door opening should be between 5.5 and 5.75 scale feet in width. Adjust the panels accordingly and glue them up.

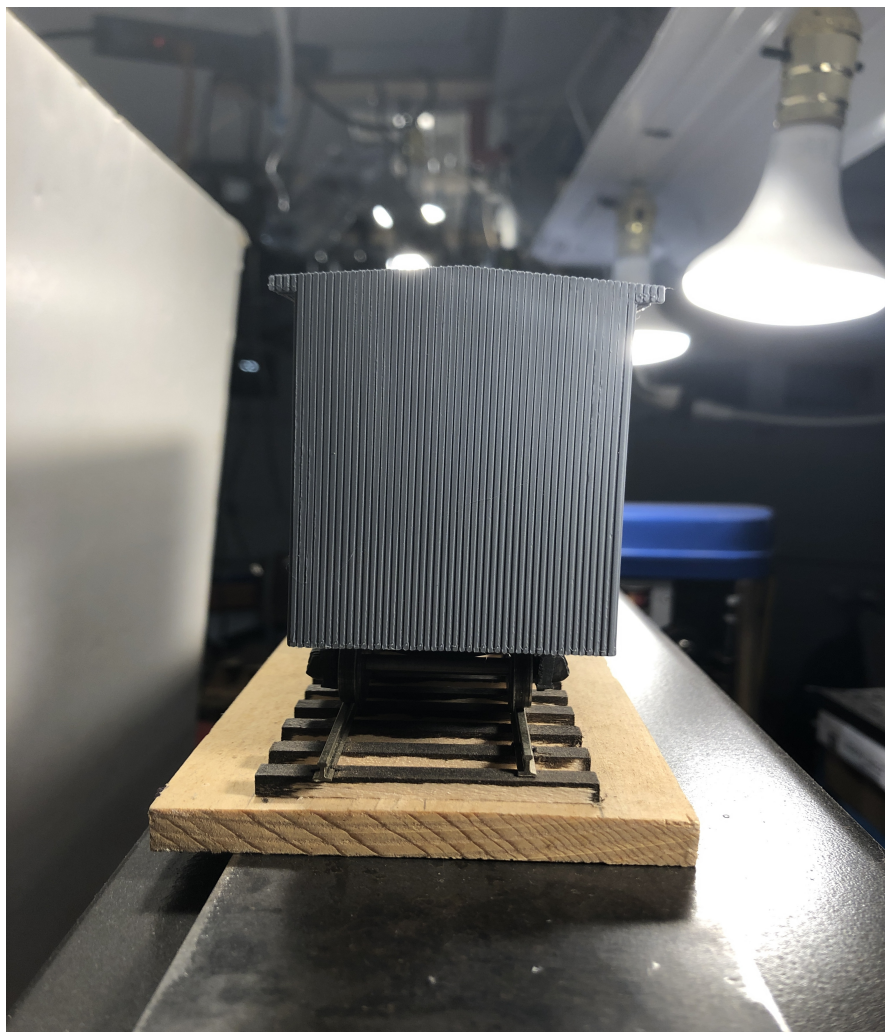
The next 3 photos show the end view on the car after the sides are mounted to the car and before the ends are mounted.

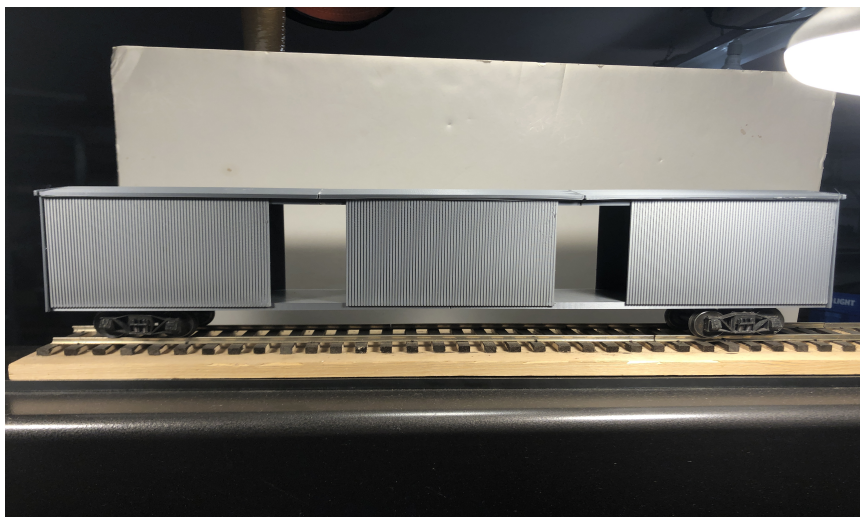


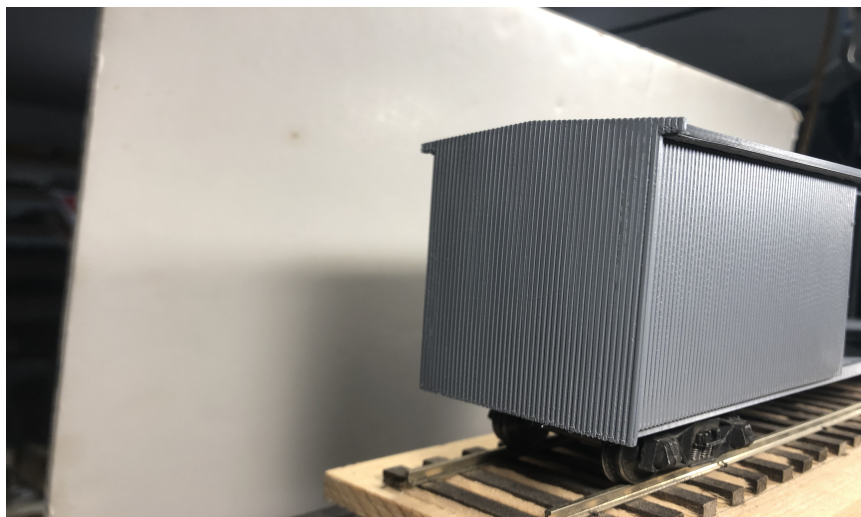


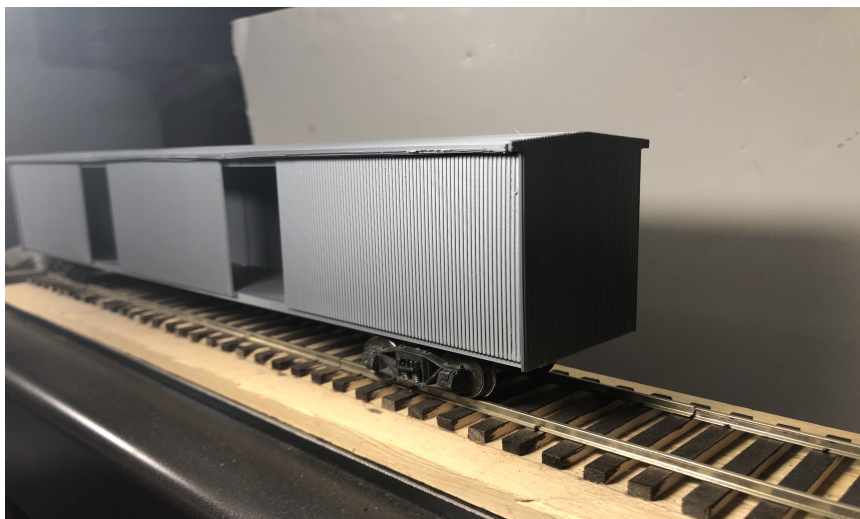


After the previous assembly steps your model should look like this and is ready to detail.









0.4 Appendix

Gluing Information Guide