

UPDATED!!!! O Scale Windsplitter Interurban 3D Print Files

8-20-2022

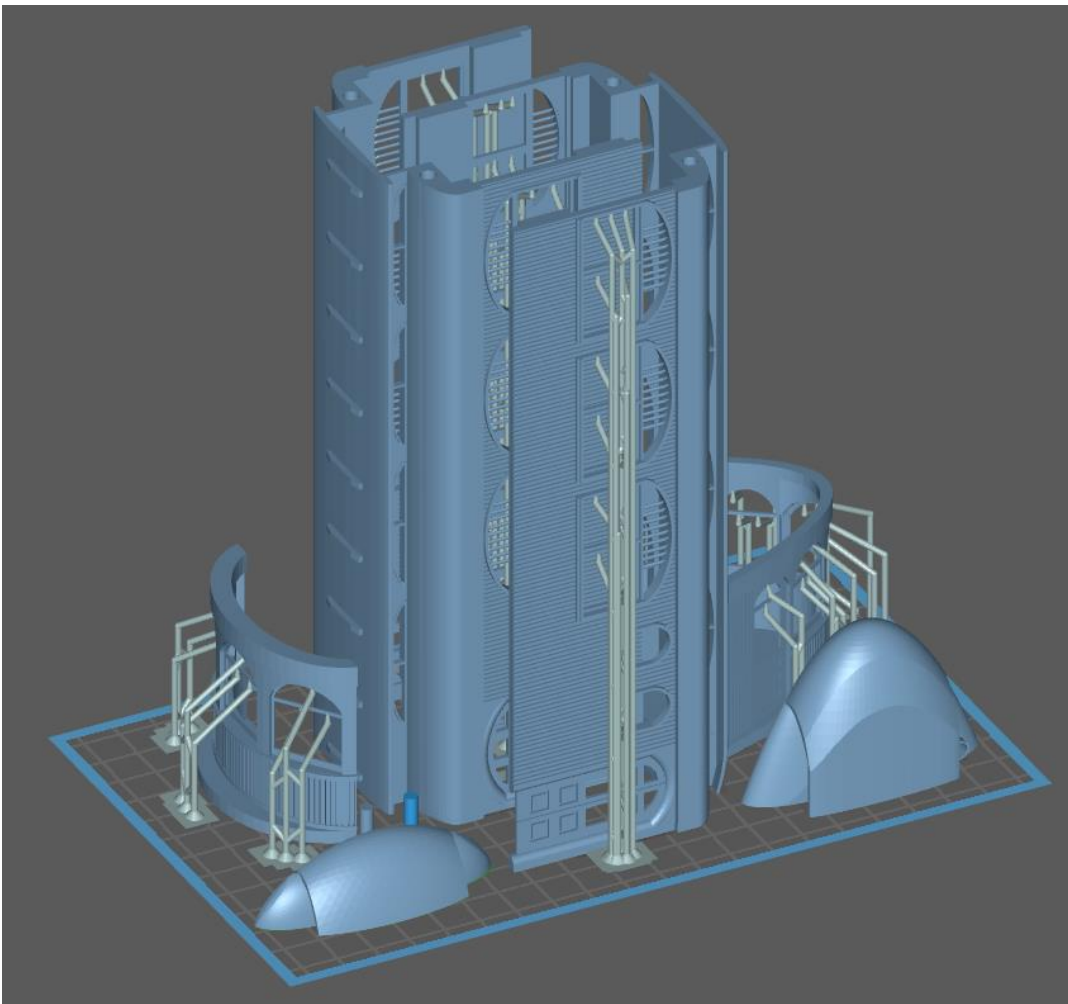
By Gary Reign (www.reign.com/3dprint.html)

This is my 3D model of a 1910's era interurban car (trolley) known as the Windsplitter. The car received its name from the parabolic-shaped front end designed to reduce wind resistance. This was one of the first railroad vehicle to employ testing of various shapes to find one that produced the least drag. This testing was done in 1904 in conjunction with Purdue University. Several cars of this design were produced although they differed in other ways. These cars operated in the Midwest and in New York state.

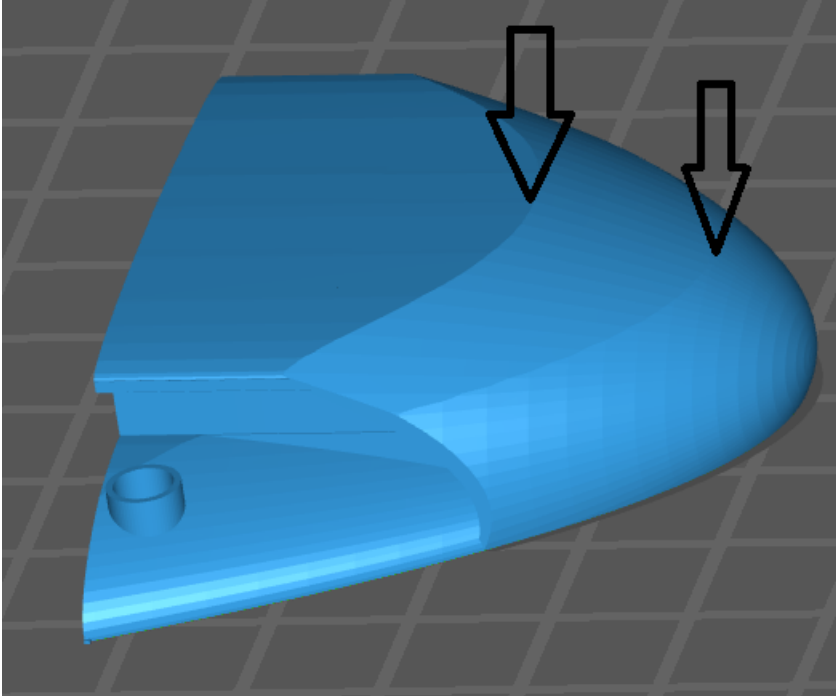
The files provided are scaled to print properly to produce an O scale (1:48) model. They can be resized for other scales but be careful if reducing them as they may have to be modified to accommodate the thinner walls and such.

I have designed and test printed the parts successfully without requiring an outside printing firm like Shapeways (except for the pilot if you want that in brass).

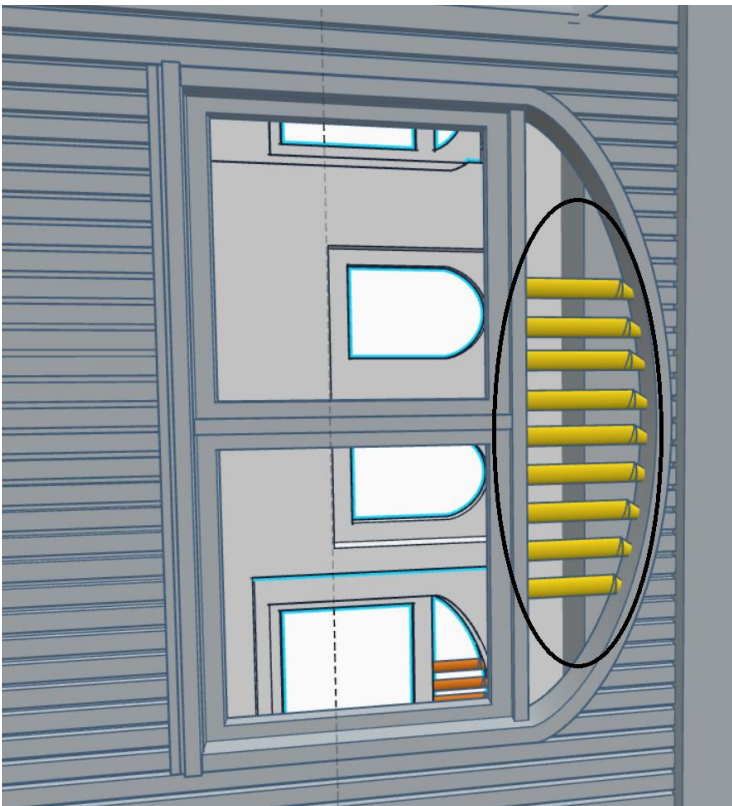
The sides have been combined with the roof and the whole model split in two for printing on a machine the size of the Elegoo Saturn. If you have a larger printer, you can combine the two pieces and print it as one. I recommend the following layout of the build plate for optimum results. It will also print all the main body pieces in one print. The body pieces should be arranged with the ends with the two holes in them facing up. The ends towards the doors should be on the build plate. Use appropriate support as shown to ensure the thin window pieces print correctly. Be sure to move the bottom of the supports away from the model so they don't print attached to it. I also added a small piece to the bottom of the body pieces to compensate for the initial layer "squish" that can happen. If your printer doesn't do this, you can sand down the bottoms, so everything fits properly. You can also print any of the body pieces on supports instead of directly on the build plate if that works better for your printer and eliminates the "elephant's foot" that can happen.



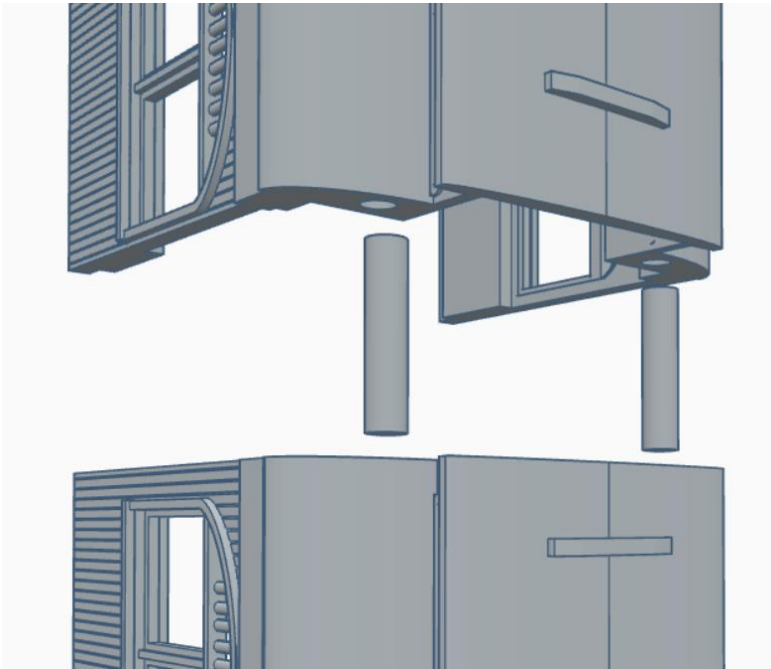
The roof pieces will need to be sanded and possibly puttied to the correct contour and to eliminate the sharp lines shown by the arrows below. Use the reference photos to get the correct shape.



For the main widow mullions to print straight, I had to embed supports into the model itself. These are shown here circled. After printing but before curing, cut those pieces off with a sharp Xacto knife.



Two pins are also provided to help join and align the two body pieces when gluing them together.



Two roof sections and the two end pieces complete the main body. There are also two pieces that go under the front and rear sections to finish the bottom of the anti-climbers. These may need to be printed separately if you wish to print them flat on the build plate.

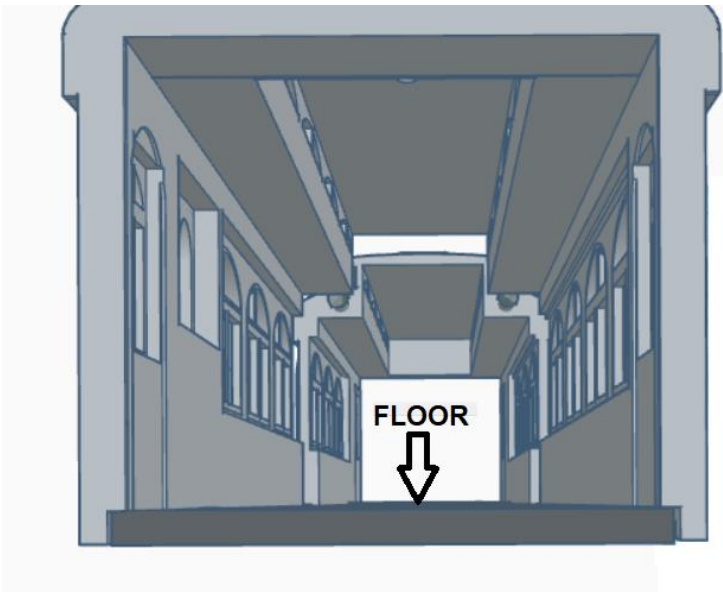


A new floor is provided since the roof is no longer removable. The floor will need to be removable to finish the model with power and interior details. The floor is in two pieces to fit my FDM printer (Crealitty CR-10 Mini). If you have a larger printer, you can join them using any 3D software. I like to print the floor in FDM as it is tougher and more flexible than resin parts. You can print it however you prefer.



The opening in the floor is designed for a Q-Car power truck. You can enlarge it to fit whatever power you have. The truck side frames are Baldwin 8430AA, 36" wheels on 84" wheelbase. These are appropriate for this prototype. I also left openings in the floor to accommodate the rear step wells (Q-Car two-step interurban steps).

The floor should fit snugly in the groove provided at the bottom of the body halves, so it is flush with the underside of the sides.

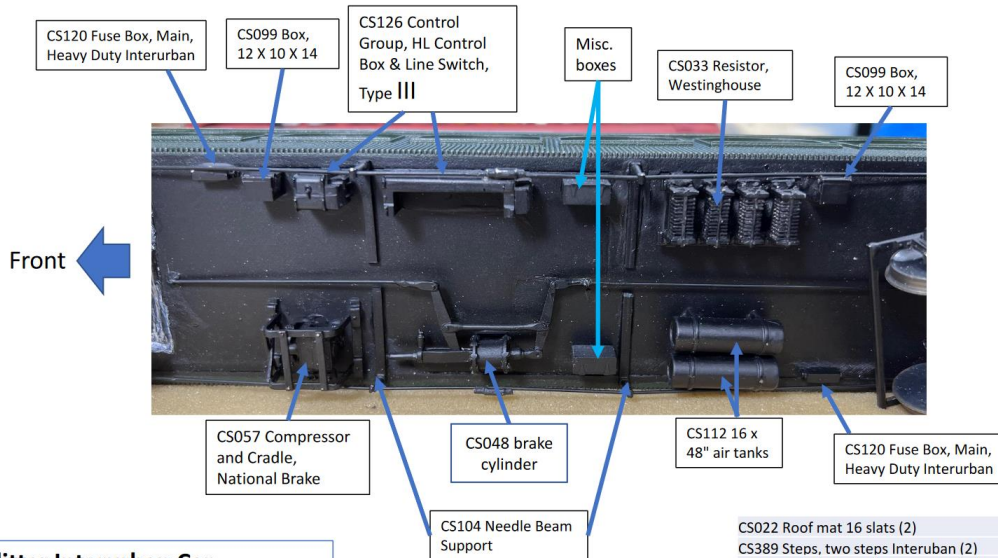


As with any files, some dimensions may have to be adjusted based on the accuracy of your printer.

I had the pilot printed in brass by Shapeways to provide a stronger piece as they can take a beating on a layout. It can be printed in resin, however.



Here are some details on the underbody layout and other parts needed to finish the model:



**Windsplitter Interurban Car
Underbody Layout and Parts List
(Part numbers are for Q-Car)**

Additional Parts needed
(not shown):

- CS022 Roof mat 16 slats (2)
- CS389 Steps, two steps Interurban (2)
- B139 Headlight, Crouse Hind Imperial TMERL w/Mount
- CS175 Clearstory Roof Platform 2 Slat (2)
- B166 Whistle, Remote Operated (Lost Wax Brass)
- CB010 Coupler, Radial, North Shore (All White Metal)
- CS138 Controller, MU for Type HL Control
- CS024 Pole Base, Large
- B120 Trolley Pole, Four Spring Horizontal w/Wheel
- CS077 Seat, Highback Reversible Plush (2)
- CS054 Retriever, City Cars

For some pictures of the prototype, visit my website www.reign.com/3dprint.html. Enjoy!