

3D Printing follow-up

Taking the previous (2021)
presentation to the next level.

Building a 1/32 scale wagon.

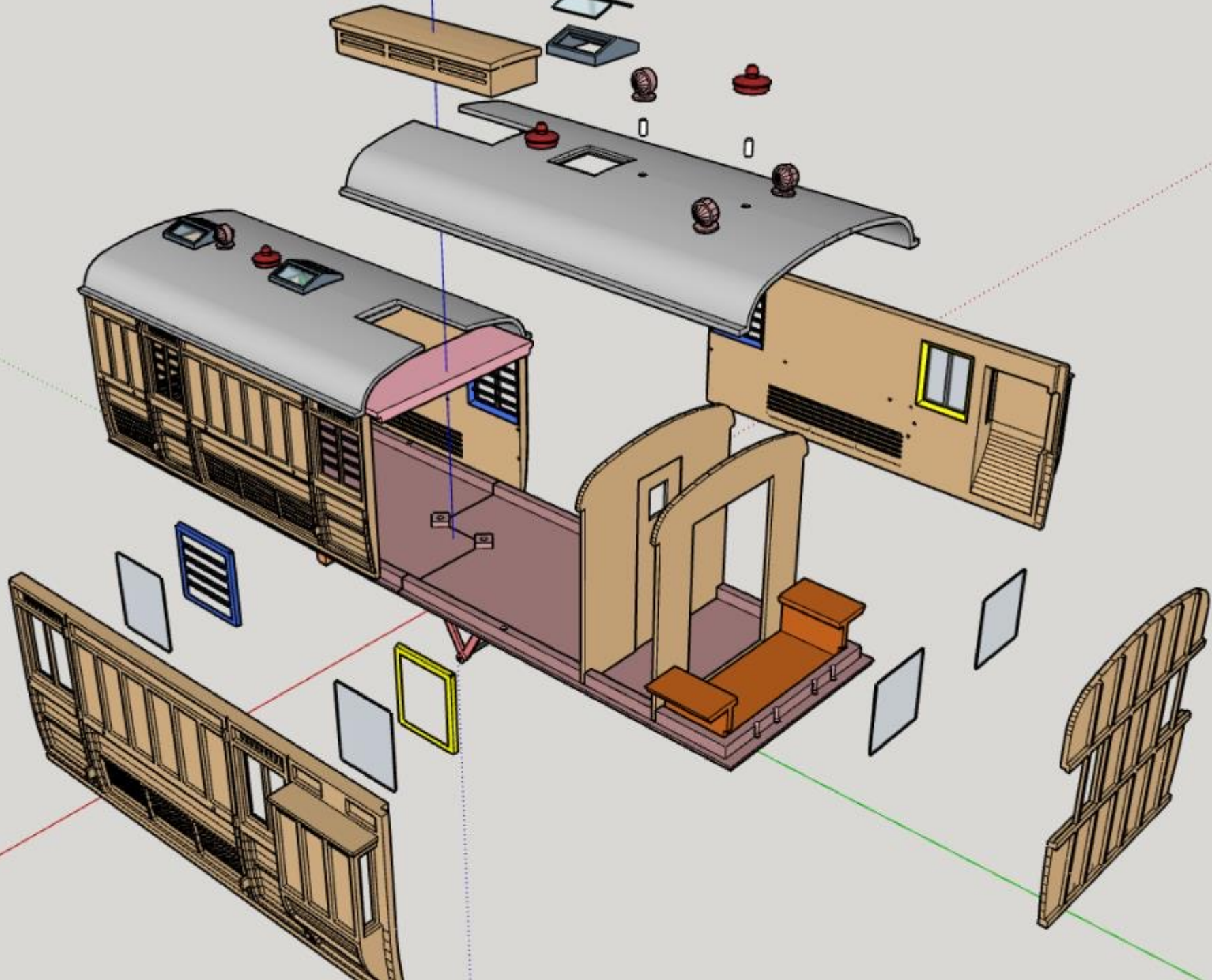
Presented by Chris and Dai Coley

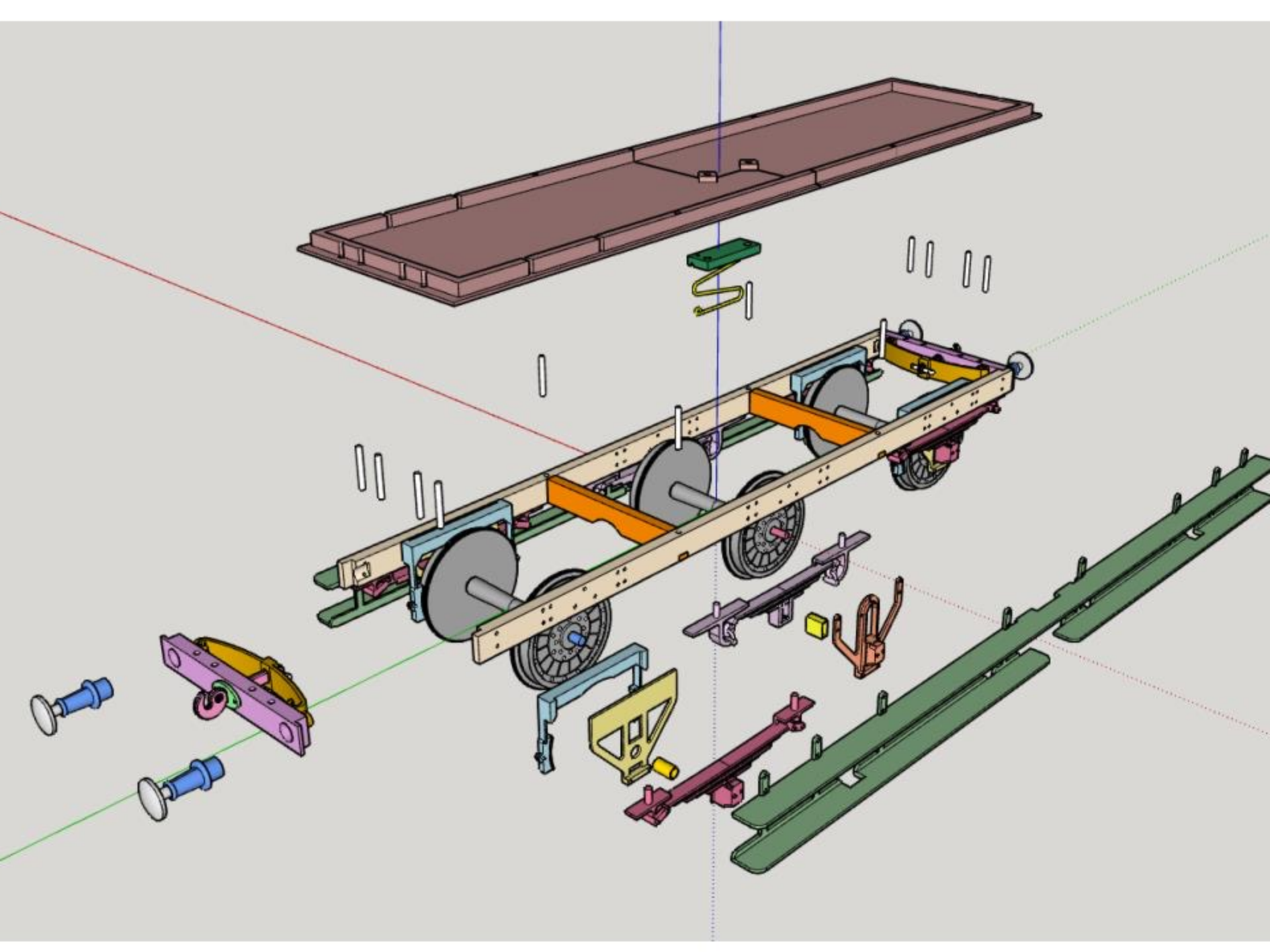
National Summer Steamup

Lodi California July 2022

First the Plan

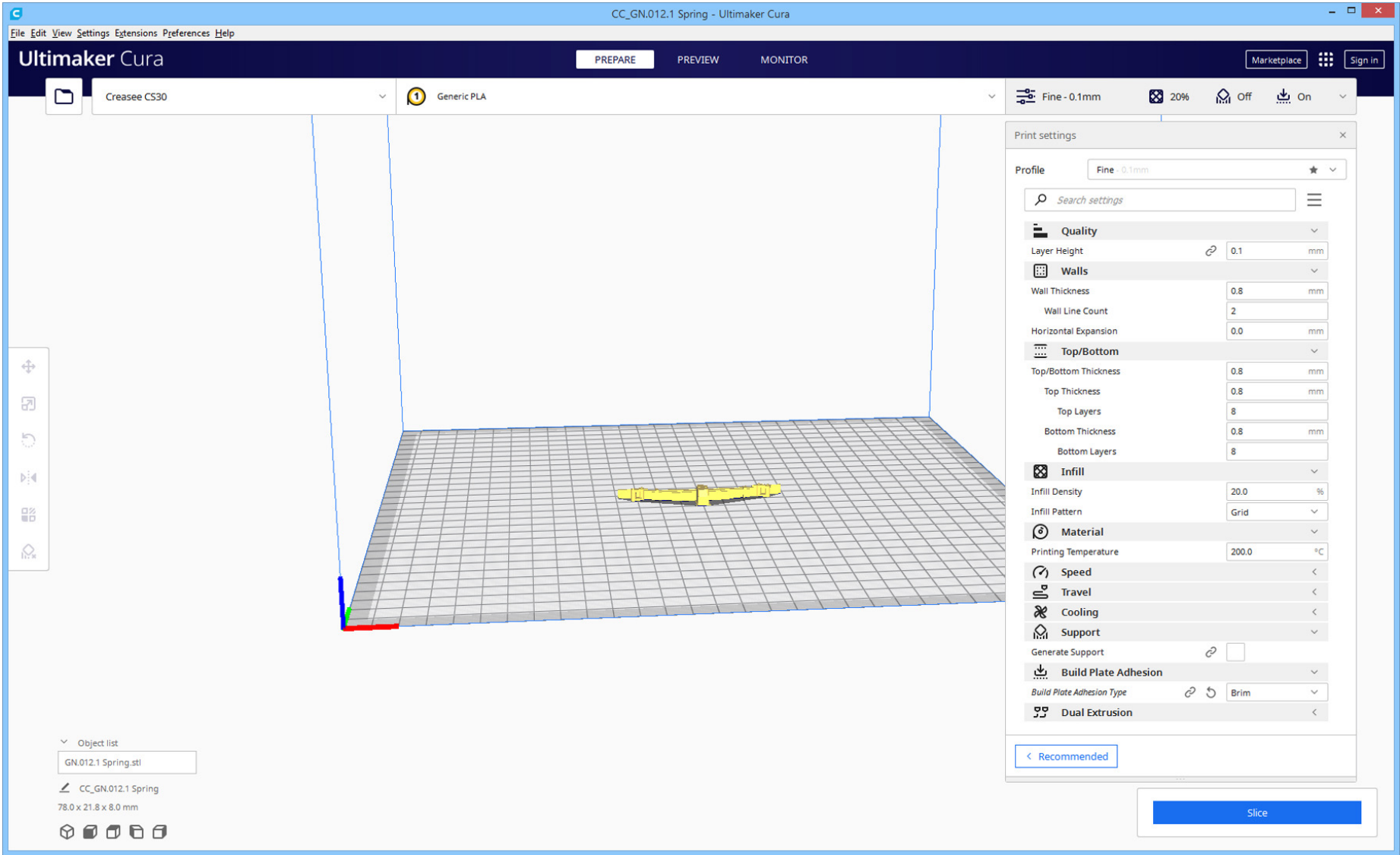
- Build a model of a GNR Passenger Luggage Van in 1/32nd Scale (Gauge 1)
- Download the stl files from the “GaugeOne3DCircle.groups.io” site in UK
- Open the stl files into a “Slicing” Software and configure for our 3D Printer.
- Save “G-Code” files to a micro SD Card.
- Load SD Card into 3D Printer and **PRINT**



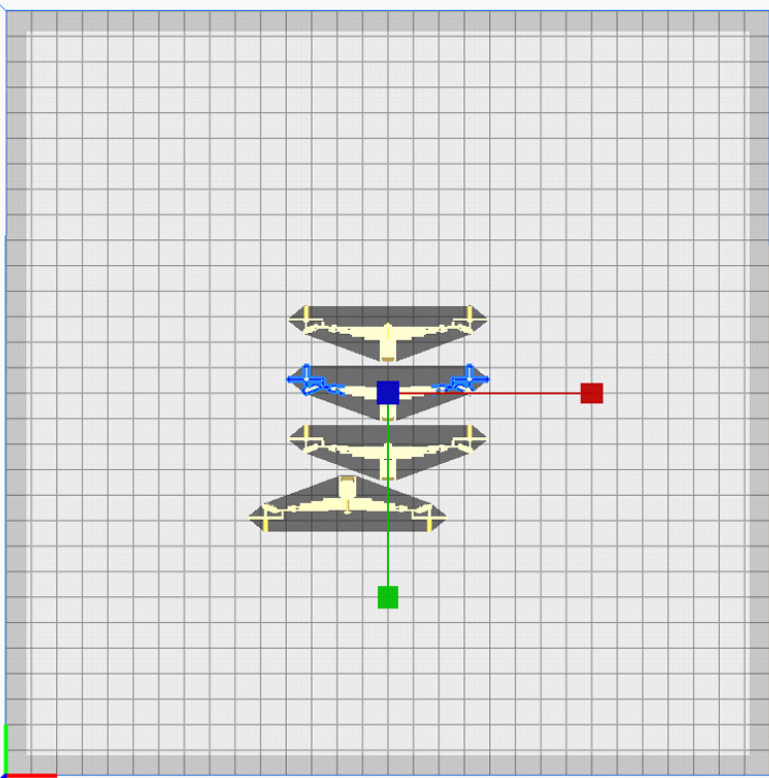


Next The Software

- Design your object with CAD (FreeCAD?) if you are clever enough, otherwise go online and download your stl files. – Thingiverse? Others?
- Load your stl file into the slicing software on your computer. I use CURA.
- Configure CURA for your 3D Printer, align and scale/multiply the object on the base.
- Slice and save G-Code file to SD Card.
- Load SD Card into 3D Printer.



Creasee CS30 Generic PLA Fine - 0.1mm 20% Off On



X 78 mm 100 %
Y 21.7676 mm 100 %
Z 8 mm 100 %

Snap Scaling
 Uniform Scaling

- Object list
- GN.012.1 Spring.stl
 - GN.012.1 Spring.stl(1)
 - GN.012.1 Spring.stl(2)
 - GN.012.1 Spring.stl(3)

CC_GN.012.1 Spring
93.8 x 88.4 x 8.0 mm

Slice

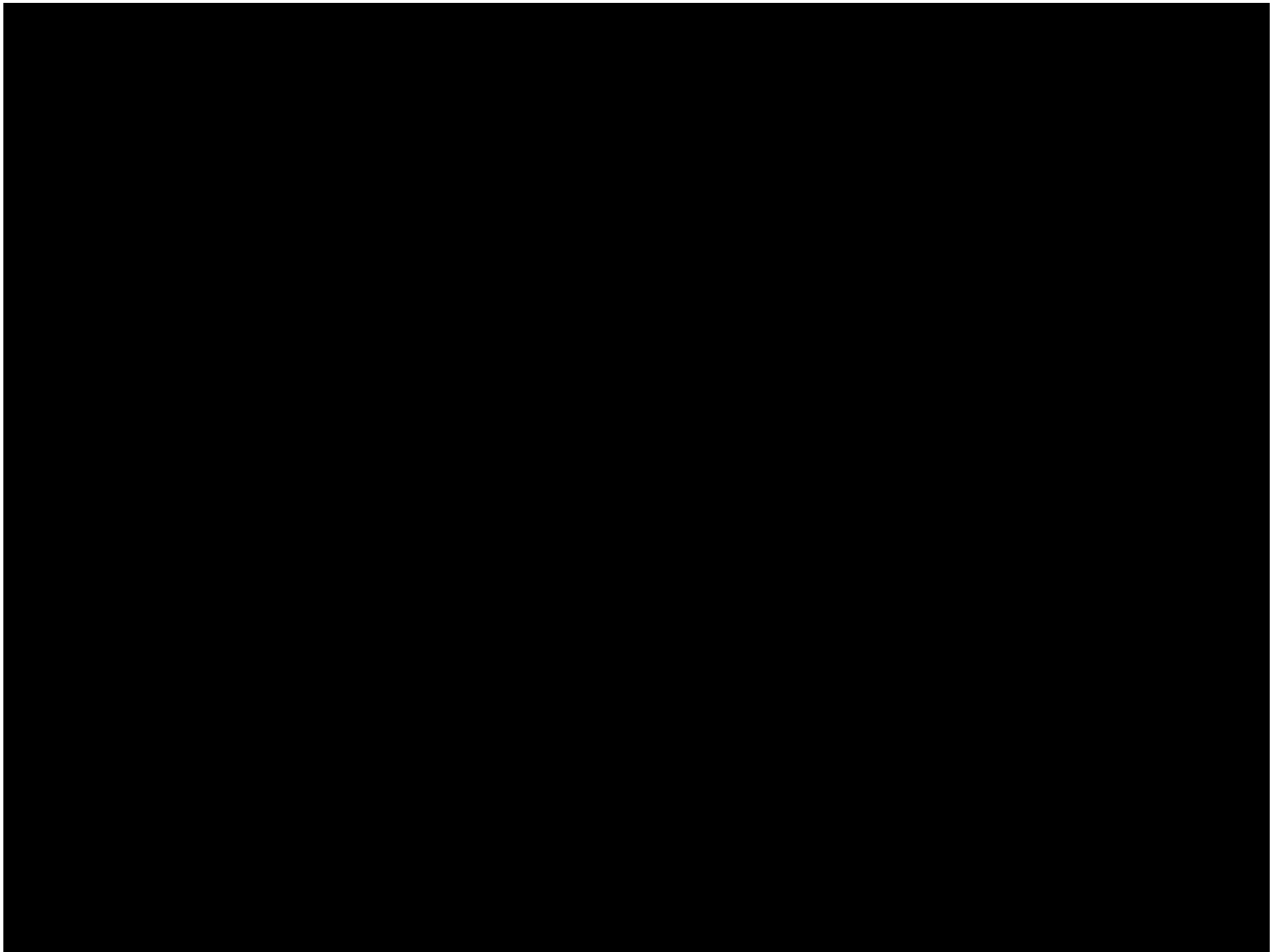
Now the 3D Printers

- I'm using a CREASEE CS-30 FDM Printer with a Build volume 300 x 300 x 400mm (which is about 11 7/8" square base x 15 7/8" high).
- Normal price about \$300, bought from Newegg on sale for \$130 w/free shipping via Amazon Prime???
- Other 3D Printer is Creality Ender 3 Pro build volume 220 x 220 x 250mm. (\$240)

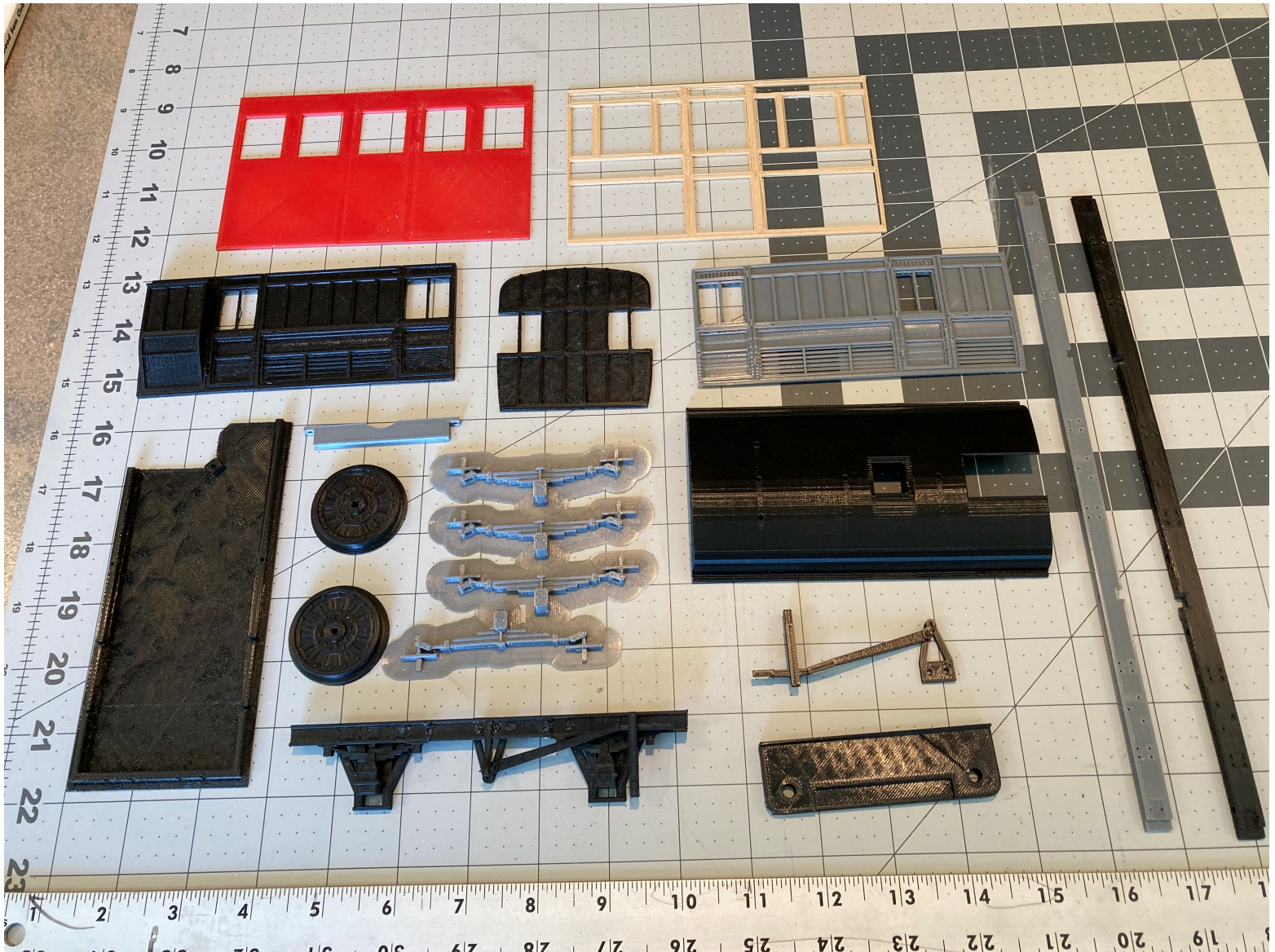
CREASEE CS-30



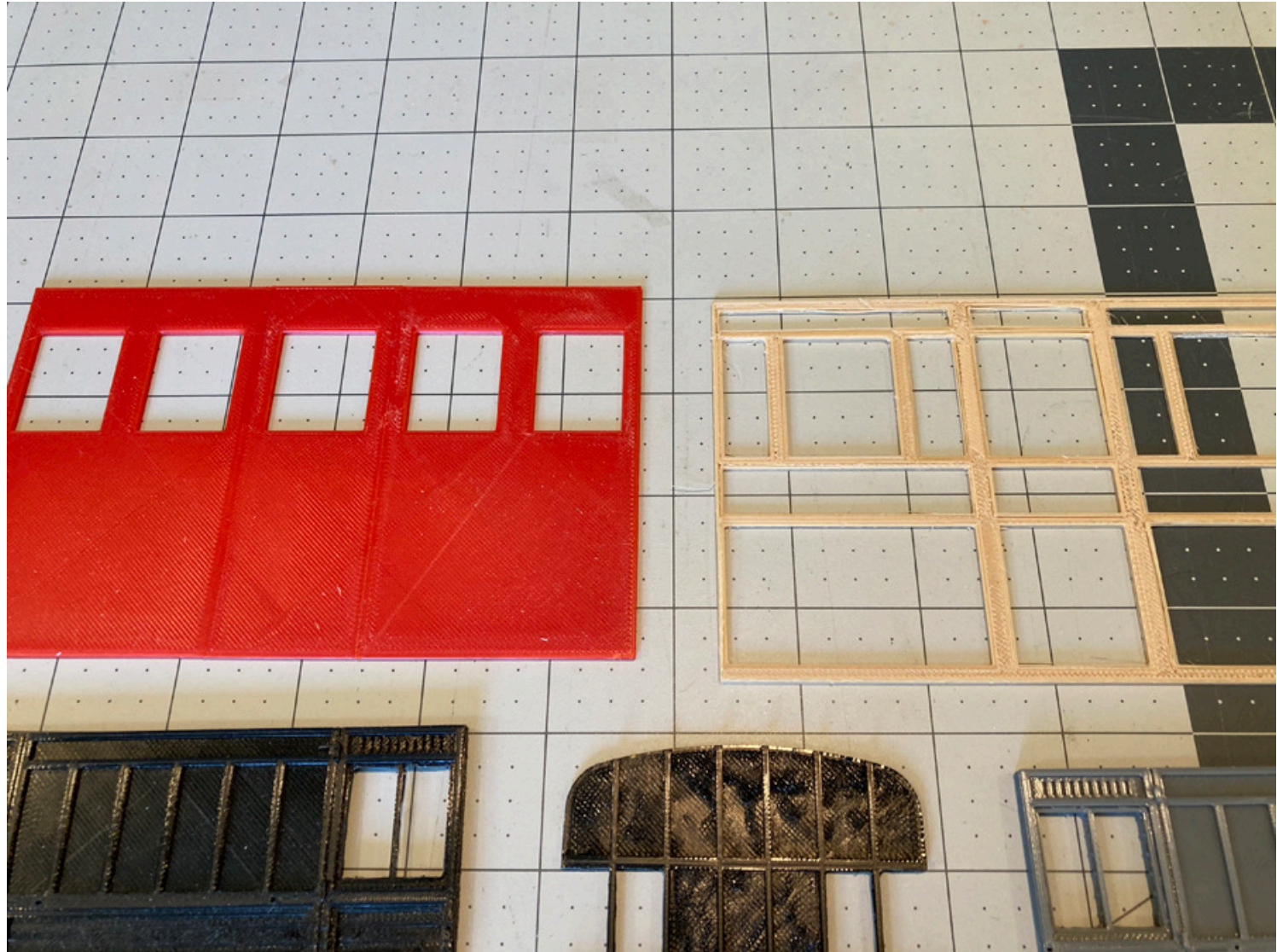
**300 x 300 x 400mm, 360w
3D Printer**



Sample Prints



More Sample prints



Still more Sample Prints



Now we need to finish

- First we need to clean up the prints by removing any Support Material and Brim.
- Support Material is dependant on the position of the surface relative to the Print Bed ie are we trying to print in mid air?
- Brim is a device to ensure that large prints stays adhered to the Print Bed.
- Then we need to glue the parts together.

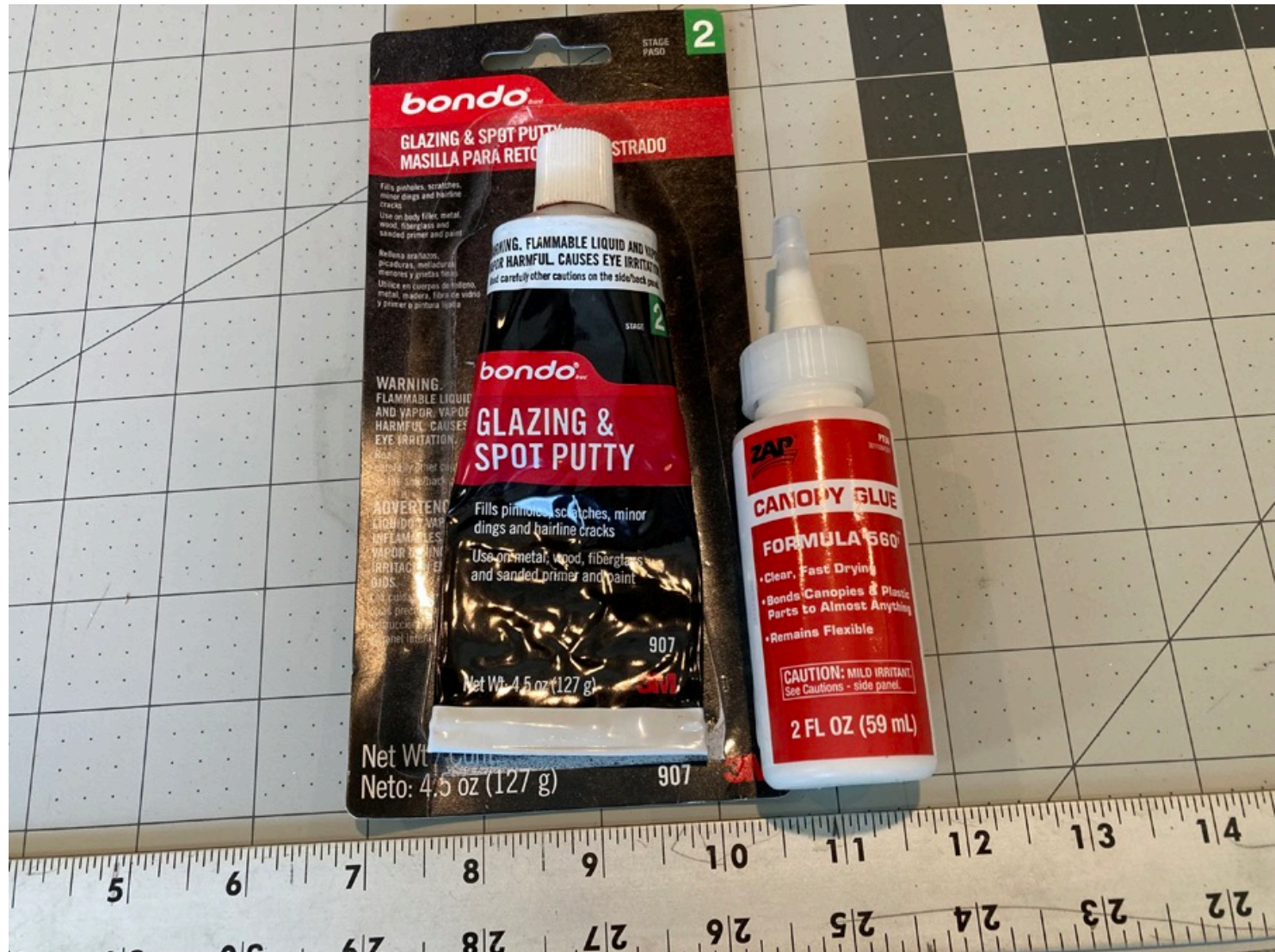
Adhesives and Clamps

- The major adhesive I use is Canopy Glue. Particularly good for Glazing windows etc.
- Some also use Super Glue but I find it easier to use the Canopy Glue, but you do need to clamp the parts together and allow to set (at least 8 hours, over night is best).
- BONDO to smooth out joins and ridges.
- CLAMPS – You can never have too many clamps.

Clamps



Adhesives



Paint and Decals

- Automotive Grey Primer on areas to be painted.
- Rustoleum “Rattle cans” work just great. (The Southern Passenger Van uses “Hunter Green”).
- Water Slide Decals produced on ALPS printer, can print White or Metallic Gold in addition to color logos etc. (Photoshop).

Wheels etc.

- Some wagons use “Slaters” wheels, axels and bearings.
- Some wheels are 3D printed and mounted onto steel axels (eg. Old Bachmann sets).
- Buffers can be 3D printed or made up from Drawing Pins (Push pins)
- 3D printed coupling hooks and some chains and brackets from Walmart.

And there we have it.

- 2 versions of a Passenger Van, one printed on the Ender 3 Pro with the roof printed horizontal the other on the newer Creasee CS-30 with the roof printed vertical.
- Thanks for listening, Any questions?