

Steve Bonny Dec 2017.

Plans and construction for Teatotal

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This project was inspired by a teapot called Simplici(tea) by Kailee Bosch. You can find it in the American Woodturner magazine Aug 2017 inside front cover. Kailee's teapot is made of glued books, paper and copper and looks pretty cool. I posted this project plan just because it was fun to make. It's pretty simple, nothing difficult but there were a few head scratching moments along the way.

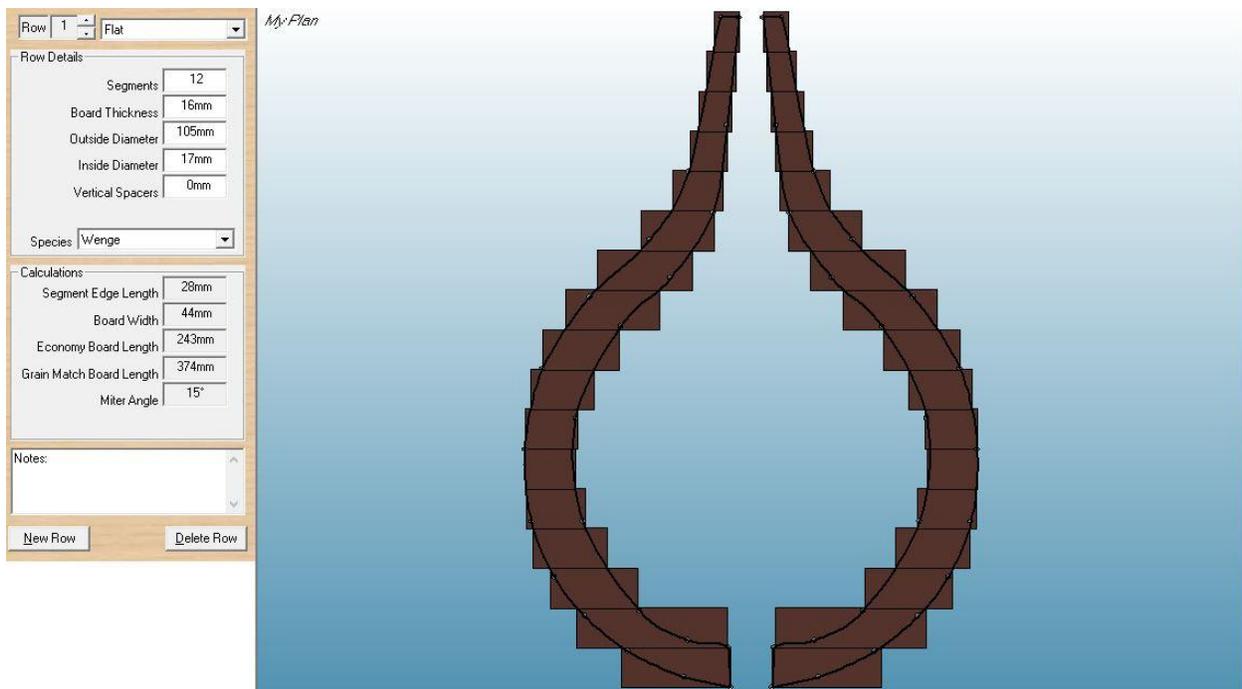
My teapot was made of douglas fir with wenge lid and trim. The douglas fir I have is perfectly straight grained and knot free. Expensive stuff that was left over from a boat building project..... about 15 years ago. The Titebond original glue was dyed green using Colortone bright green wood stain. I was expecting crisp green glue lines but interestingly the dye bled into the surrounding wood giving the joints a fuzzy look. Unexpected but I like it! The knob on the lid and handle are made out of copper wire bought in Menards. The handle is bolted on with SS 5/16 lag bolts. The SS lag bolts were airbrushed with copper paint and then all the copper was airbrushed with brown Wicked acrylic paint to "tarnish it". It looked too shiny to me without the paint.

Cutting Summary (WOODTurner Pro). Note this teapot was made mostly with douglas fir and only Wenge for row 17 although the plan shows wenge. The plan makes allowance of the fact that the rings will all be split in half on the bandsaw.

Cutting Summary - teapot

Row	Row Type & Note	Species (Default)	Segs.	Board Thickness	Outside Diameter	Inside Diameter	Segment Edge Length	Vertical Spacer	Board Width	Economy Board Length	Grain Match	Miter Angle	Blade Tilt	Slope	S1	S2
17	Flat	Wenge	12	16mm	30mm	10mm	8mm		10mm	103mm	134mm	15°				12
16	Flat	Wenge	12	16mm	36mm	13mm	10mm		12mm	117mm	153mm	15°				12
15	Flat	Wenge	12	16mm	43mm	16mm	11mm		14mm	134mm	174mm	15°				12
14	Flat	Wenge	12	16mm	50mm	20mm	13mm		15mm	151mm	197mm	15°				12
13	Flat	Wenge	12	16mm	63mm	24mm	17mm		20mm	180mm	240mm	15°				12
12	Flat	Wenge	12	16mm	89mm	30mm	24mm		30mm	234mm	323mm	15°				12
11	Flat	Wenge	12	16mm	125mm	48mm	33mm		39mm	321mm	437mm	15°				12
10	Flat	Wenge	12	16mm	150mm	74mm	40mm		39mm	402mm	518mm	15°				12
9	Flat	Wenge	12	16mm	169mm	107mm	45mm		33mm	482mm	578mm	15°				12
8	Flat	Wenge	12	16mm	178mm	127mm	48mm		28mm	526mm	608mm	15°				12
7	Flat	Wenge	12	16mm	182mm	140mm	49mm		24mm	553mm	622mm	15°				12
6	Flat	Wenge	12	16mm	183mm	142mm	49mm		23mm	556mm	623mm	15°				12
5	Flat	Wenge	12	16mm	181mm	134mm	49mm		26mm	542mm	619mm	15°				12
4	Flat	Wenge	12	16mm	176mm	117mm	47mm		32mm	509mm	603mm	15°				12
3	Flat	Wenge	12	16mm	162mm	92mm	44mm		37mm	450mm	558mm	15°				12
2	Flat	Wenge	12	16mm	141mm	19mm	38mm		61mm	309mm	489mm	15°				12
1	Flat	Wenge	12	16mm	105mm	17mm	28mm		44mm	243mm	374mm	15°				12

Plan (WOODTurner Pro)



Note that the plan looks a little extended (not spherical). It is too tall because I plan to slice each row into 2 rings on the bandsaw (except row 17), so I have made the rings extra thick to allow for the cut and sanding. The body will end up approximately spherical. I just noticed that the info shows 12 segments per ring. This is kind of an error, I used 24 segments per ring for most of the body but 12 segments per ring for rows 13 to 17 as the segments became too small at 24. If you look closely at the photo you can

see where I transitioned from 24 to 12 segments per row but it isn't obvious to your average punter (London slang for customer) unless you know to look for it.

All of the rings except the wenge ring # 17 were split on the bandsaw (I used an Accuslicer). They were run through a drum sander and finished on the disk sander before glue up:-



The top and bottom 12 rings were turned into bowls using typical assembly. I used a half ring technique and stacked the rings on the lathe. Note that instead of typical bricklaying I set the rings with 1/3 overlap to get a unique spiral look. Note also that the wall thickness is kept fairly thick to allow for removing wood for the bottom surface. The inside of the bowls are finished at this point also :-



Notice also how the green dyed glue has bled into the surrounding wood giving a fuzzy glue line appearance.



The 2 bowls are glued together into a vessel and the outside shape finished. With douglas fir, I found the best way to get a good surface was to use a finesse scraper and cabinet scrapers with no sanding – finishing details are at the end of this article. If you sand the fir you will get an uneven surface due the varying hardness of the growth rings. I just finished with CA glue at this point due to the amount of sanding it was easier to do it with an easily sandable form rather than leaving until the end :-



The 2" hole for the lid was bored at this point while I had a good solid mounting with the lathe locked with an indexing pin. It's important to have everything locked down well otherwise the bit will wander and mess up the hole. I.e. don't plan on drilling this large of a hole with a hand held drill. The drill mount is a Oneway tool and fits to your tool post so you can adjust and angle to where it looks good. I actually had the bottom face plate and tailstock in place to improve stiffness when I bored the hole, I must have forgotten to take the photo and took it at a later time:-



The teapot was then mounted in a vacuum chuck in order to take off the other face plate and finish the surface ready to mount the spout:-



The spout was already assembled on my small lathe and hollowed, here it is glued in place, then turned and finished with CA glue:-



The teapot is then mounted in a 4 jaw chuck using the lid hole and the bottom is turned. This is where you realize you should have left the walls a little thicker....



It looks like I stopped taking photos at this point, that is the last one I have! The teapot was reversed again into a small vacuum chuck so that the hole could be trimmed and finished with CA glue. The final finish was applied at this point on the lathe sometimes rotating and sometimes stationary.

The lid is turned out of a solid piece of wenge and the knob is copper electrical wire that was twisted around a #16 nail. The handle was also made out of thicker electrical wire bent around a mandrel. I bolted the handle on using 5/16 SS lag screws and washers. They looked kinda ugly so I airbrushed them with copper paint. All the copper looked too shiny to me so I airbrushed it with brown paint to make it look tarnished. I also had to add a copper wire foot (you can just see it in the finished photo). The handle was so heavy it overbalanced the teapot!

Finishing with douglas fir:-

The main issue I had with the douglas fir was finishing. If you sand it you will get an uneven surface due to the significantly different hardness of the spring and summer wood rings. They are so different in hardness that you can feel the chop saw step through the rings. If you sand the sandpaper will dig out the soft spring wood and leave very distinct ridges where the hard summer wood is formed.

I turned the wood with a bowl gouge and then used a finesse scraper to improve the finish. I also used cabinet scrapers in some areas to help improve the finish. I ended up with a smooth surface but slightly uneven texture due to the different tools. I very lightly touched the surface with 320 grit paper to even up the texture.

Now I applied thin CA glue with the lathe turning slowly (and safety glasses in place!). There are many you-tube videos of this process, pen makers use it extensively for finishing pens. You need to build up many layers of ca glue. I start with thin to get good penetration and then built up some layers with medium glue as it fills cracks and blemishes much more quickly. Medium is a little more difficult to apply and tends to give a rougher surface. When you have a good thick layer build up sand back with 150 grit and go through to 320 grit or so. If you look closely at the surface you will see shiny spots where the surface isn't perfect. It is important to not sand down to bare wood so I don't keep sanding to eliminate the shiny spots. Instead I build up more layers of thin glue and sand again. When I have a perfectly dull finish all over with no shiny spots, I sand to 400 grit and I'm ready for lacquer. I sprayed a couple of coats of lacquer sanding sealer and lightly sanded with extra fine scotchbright pads, then a few coats of gloss lacquer. I sand the lacquer and again look for shiny spots and defects. I actually dropped the teapot at this point creating a couple of dings. I fill these by drop filling with lacquer. I just touch a blob of lacquer in the defect or hole with a tiny paintbrush or toothpick, allow to dry and sand. With one of the dings I had to do this several times to fill the defect. When the surface is perfect and sanded to 400 grit, I sprayed a couple of coats of satin lacquer to finish.