

## **BOWL WITHIN A BOWL with Theo Haralampou – March 2021**

*The principle behind this project is to form a perfect hemisphere on the outside of the bowl so that the blank can be tilted in a large cup and remain on centre so both internal and external bowl shapes can be turned with even wall thickness.*

### **Tuning the blank into a hemisphere**

1. Start with a blank which is 15mm, 9/16" wider than half the diameter.
2. Mount the blank on a faceplate and true up the outer edge and the bottom.
3. On the bottom face mark a spigot diameter to match your chuck when the jaws are 3mm, 1/8" apart and turn a 10mm, 3/8" deep spigot and leave a flat surface that is as wide as the face of each jaw.
4. Mount an A4 size board at around 45° to your bed projecting away from you on the other side of the blank and cut away part so it does not impede the banjo. *(Note: - the reason for the 45° is so that shavings don't accumulate on it when you are turning.)*
5. Place a single LED light mounted about 1,800mm or 6' from the floor at 90° to the board on your side of the lathe pointing away from you and downwards towards the blank so that it casts a shadow on the board. The light is lined up to the centre of the top face of the blank with a rocket made of 1/8", 3mm mdf or plywood which straddles your faceplate and sits squarely on the backing board. (I show you how to work out the dimensions for your faceplate and lathe setup.)
6. Clip a piece of A4 paper to the board and mark the top and bottom of the shadow cast by the blank. Also mark the centre using the shadow cast by the live centre on the paper. (The bowl and faceplate are removed to do this and a drive centre is placed in the chuck). Mark where the paper is on the board and remove it.
7. With a compass and a ruler draw a semicircle on the paper to match the marks. This will replicate the outer shape of the intended bowl and will be larger in dimension. *(Note: - the further away the light from your blank the smaller the shadow, but not so far as to have blurry edges. The board supporting the paper must be within 10mm, 3/8" of the blank, otherwise the edges of the shadow may be furry.)*
8. Return the paper to the original position on the board.
9. Now while keeping one eye on the shadow cast by the light and the other eye on your bowl gouge, turn away the wood that casts a shadow until you get to your marked semicircle. You can use a bowl gouge and finish with a scraper and then sand using an egg or curtain ring over the sandpaper.
10. Apply a quick drying finish. *(Note: - one of the reasons for adding the finish at this stage is to stop any loss of moisture from the timber which could cause movement. If you are going to take a break at any stage of the process it is important to place a plastic bag over the blank and tie it closed to stop the loss of moisture.)*
11. Remove the faceplate and reverse the bowl in your chuck and true up the front of the bowl.
12. Mark the two circles delineating the rim of each bowl which will be 10mm, 3/8" wide each.

13. Using a drill bit, either with a handle or in a Jacobs chuck mounted in your tailstock, drill down to 10mm, 3/8" less than the inner radius of the smaller bowl. (*Note:- This will make it easier to turn down the inside of the bowl and also act as an indicator when the drill hole disappears that you only have a few more cuts to go to the bottom of the bowl.*)
14. Turn away the inside of the bowl keeping a consistent wall thickness of 20mm, 3/4".
15. Now turn down the 10mm, 3/8" rim of the inner bowl 25mm lower than the outer bowl.
16. Sand the inside of the bowl and remove from the chuck.
17. The bowl can be reversed at this stage and the spigot removed if preferred.
18. Prepare another smaller bowl blank on the lathe with a hollow bowl shape so your work can be placed into it and tilted.
19. Mount the inside of the bowl over the hollow and using a tennis ball or rounded block hold the work against the blank.
20. Study the grain and determine which is going to be the high side and which is to be the low side of the outside bowl.
21. Tilt the bowl accordingly by 25mm.
22. Using a pencil mark a line as you rotate the work which will represent the outer rim.
23. The work can also be taped to the cylinder or hot melt glue can be used to hold it fast for turning.
24. Part of the outer bowl which will be waste, can be marked and cut off with a saw.
25. Turn away the rest of the outside bowl being careful to stop at the meeting point with the inner bowl.
26. Sand by hand and apply the finish.
27. The bottom can be left rounded or, if you prefer, a flat can be turned or sanded to match the rim of the larger bowl.

Note to turners - Don't be perturbed if these instructions are hard to understand while just reading them. Once you have seen the demonstration every step will make perfect sense.

Theo Haralampou