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Basic Closed Segmented Turning

THE PROCESS

I. DESIGN: WHAT DO YOU WANT TO MAKE?

You determine in advance the overall shape, size, wood selection, layer thickness, special ring configurations, number of segments per layer, and coloration.

1. Sketch
2. Transfer to graph paper at 100% size. Draw estimated outside edge line of vessel. Draw parallel estimated inside edge line. This allows manual calculation of wood and segment thicknesses, widths, and lengths.
3. Prepare material cut-list to summarize widths and total board lengths.

OR

Use computer program to assist in design. This provides materials cut-list.

II. WOOD PREPARATION

1. Use kiln dried wood (s), cut to length.
2. Flatten boards.
3. Prepare straight and perpendicular edges.
4. Rip to width.
5. Cut into individual segments by layers—number each layer and set aside.
6. Sand segment edges (if necessary).
7. Prepare method of attaching to lathe--waste block/expandable chuck--flatten.

III. RINGS

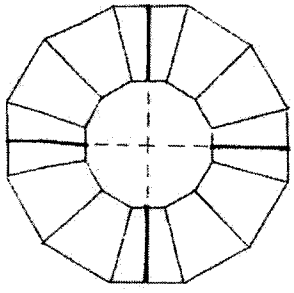
Ring Making

1. Place segments of layer in segment holder.
2. Brush glue to two edges.
3. Place masking tape on right angle segment jig.
4. Place individual segments (from # 2) onto tape (from # 3)
5. Lift up tape and form ring. Clamp with metal bands or straps and tighten. Hammer flat. Wipe off excess glue.
6. Set aside—allow to dry—suggest minimum time of several hours or overnight.
7. Repeat #1 through #6 for each layer.
8. Remove bands or straps—can remove tape.

9. Flatten each ring—tope and bottom must be flat and parallel.

Ring Layup

1. If solid wood bottom layer #1, determine center—draw circle slightly smaller than inside diameter of layer
2. On other rings, mark line in middle of 4 segments forming "cross hairs".



3. Apply glue to top side of layer #1 outside of drawn circle. Hand press layer #2.
4. Apply glue to top side of layer #2—on layer #3, align and center drawn lines with joints on layer #2—hand press.
5. Repeat process on subsequent layers.
6. Use press to hold rings.
7. Check each layer to make sure it is flat.
8. After each glued layer, make sure inside of vessel can be turned before gluing next layer.
9. Depending on size, weight, and length, might have to also round outside of ring and use a steady rest for stability/safety.
10. Some designs might be better turned and shaped by making two halves. Turn each half to same inside diameter.
11. On vessels with small top opening, I generally spray inside with flat black paint after sanding inside with 2-3 grits.
12. Prior to assembling halves, must remove paint from each top edge and flatten.
13. Glue halves together on lathe or press.

IV. TURNING AND SHAPING

Some turning—especially on inside might have been done prior to laminations of all rings. Also some sanding—again, on inside, might have been done.

Suggest turning off minimum amounts of wood—both Inside and outside—until all rings are layed-up.

Correctly sharpened tools (bowl gouges, special scraper)
are safer and perform better.

V. SANDING

After machine turning and shaping, can consider use of low-grit, semi-flexible sanding belt to finalize shape.

I then power sand with the following grits: 80, 120, 150, 180, 220, 300, 400, and 600.

After 80 grit, I sometimes spray water (do NOT saturate) on vessel to raise the grain. Allow to dry (can run lathe on lower speed). Finalize with other grits.

I blow off vessel with compressed air after each grit to clean surface.

Use "sharp" sandpaper. A dull 80 grit is not 120 grit.

VI. FINISHING

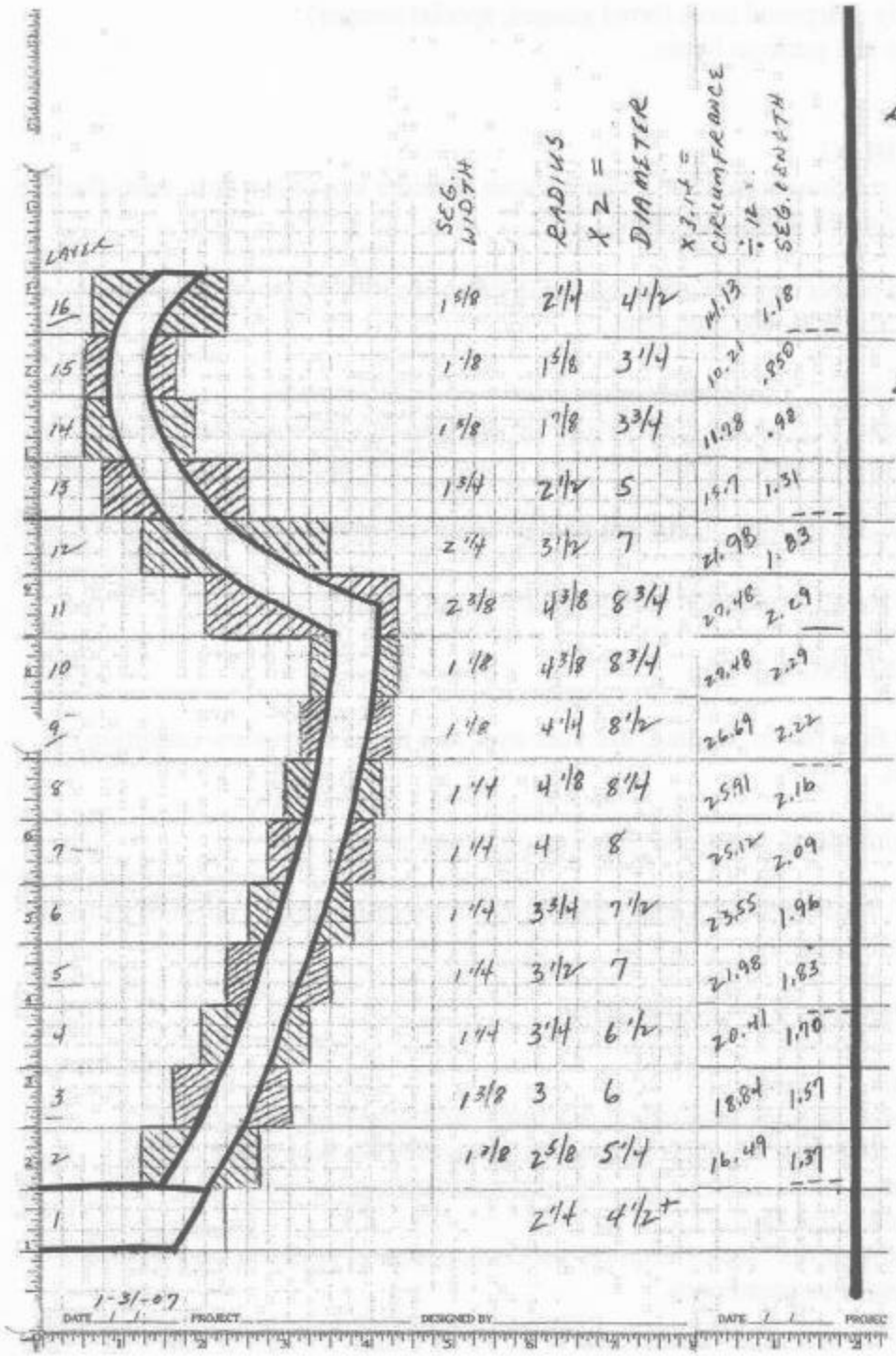
After final power sanding, use your eyes and fingers to review condition of vessel.

A multitude of very good finishing processes exist.

Hint" If some finish roughness still exists, consider using a sheet of paper to "sand" vessel.

SELECTED SPECIAL RINGS/DESIGNS

1. Spirals.
2. Different species of wood on one ring—or multiple adjoining rings.
3. Oval shapes—ring must be absolutely centered for best visual effect.
4. Zig-zag.
5. Diagonal line (s).
6. "Southwestern" look—requires patience, patience, patience, and precise cutting of segment parts.



BOARDS

WIDTH	LAYER(S)	ROUNDED UP LENGTH
2 3/8	#11	29
2 1/4	#12	23
1 3/4	#13	18
1 5/8	#16	16
1 3/8	#14	14
	#3	21
	#2	19
1 1/4	#8	28
	#7	27
	#6	26
	#5	24
	#4	23
1 1/8	#15	13
	#10	30
	#9	2

5" ⊙ #1

RESOURCES

John Morris	807 Cliftwood Drive Siler City, NC 27344 919.742.5148 jgmjr1@hotmail.com
Table Saw Sled	The Dubby Cutoff Sled In-Line Industries 800.533.6709 www.in-lineindustries.com Kevin Neelley www.turnedwood.com
Press	Kevin Neelley
Sandpaper	Rhynogrip Sandpaper www.industrialabrasives.com
Books	**The Art of Segmented Woodturning** By Malcomb Tibbetts **Segmented Turning-A Complete Guide** By Ron Hampton **Segmented Wood Turning** By William Smith