Segmented Turning

"I will not live forever. But if I am fortunate enough to be granted a moment to reflect upon my life at my time of passing I hope I can look back and know that what I've learned will not die with me, but will live on in the minds of those I've taught."

Dennis W. Montville

October 5, 2002

DWM

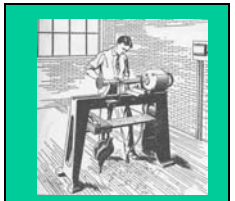
Segmented Turning

Design and Preparation

Dennis W. Montville

An introduction of the design and techniques used for all types of segmented turned wooden vessels

DWM



Segmented Turning

Definition of Segmented Construction

- Consists of more than one piece of wood
- Can be from same or different wood species
- Can be from separate pieces or from one cut piece and then reassembled
- Can be symmetrical or asymmetrical

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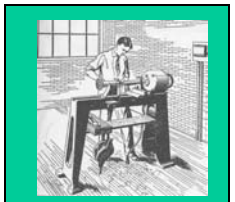

Segmented Turning

Benefits of Segmented Construction

- Do not require large pieces of wood
- Color contrasts from different woods
- Planar intersections result in surprising effects
- Can use wood that others consider “scrap”
- Use of alternative materials with wood (plastic, metal)
- People always ask about how you did it

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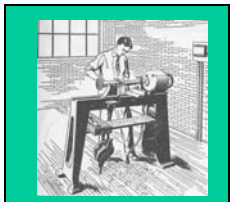

Segmented Turning

Drawbacks to Segmented Construction

- Demands considerable planning for effect
- Accuracy of turning details is required
- Most of the work is done before turning begins
- One “oops” can destroy weeks of work
- Planned results may not be realized
- Sanding and finishing can be extensive

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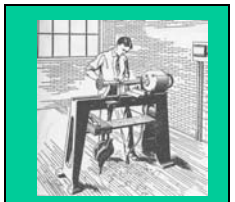

Segmented Turning

Segmented turning can be done in an almost unlimited number of ways. Some of these approaches are shown in the following slides. *Variations* on these methods are infinite in number, and *combinations* of individual techniques are the calling card of each turner.

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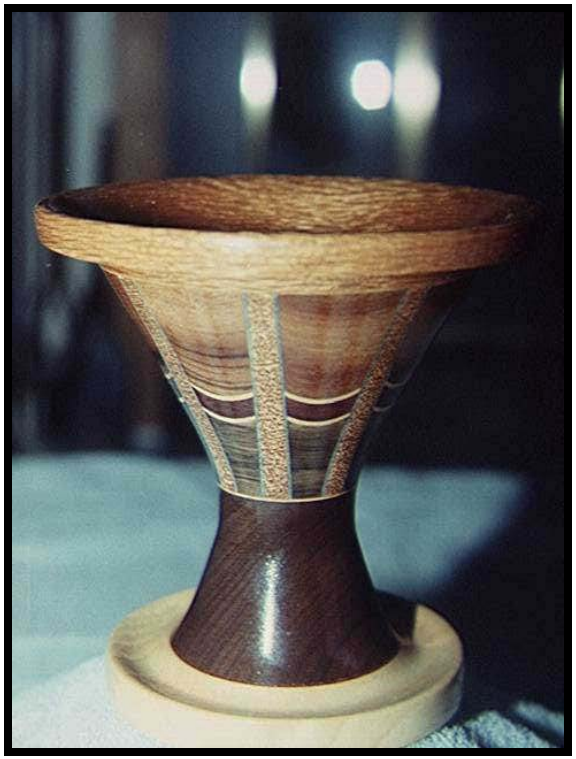
Segmented Turning

Examples of symmetrical segmentation



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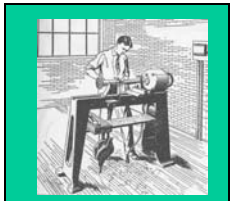

Segmented Turning

Segmented construction can include asymmetry

- Combination of laminated and segmented design

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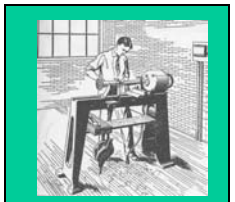

Segmented Turning

Tools commonly used for segmented preparation

- Table saw
- Band saw
- Scissors
- Compass
- Tin snips
- Belt sander
- Glue
- Paper shear
- Jig saw
- Lazy-Susan bearing
- Clamps
- Router

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Segmented Turning

There are several approaches to segmentation:

- Horizontal stacked
- Vertical stacked
- Barrel assembly design
- Multi-planer lamination
- Free-form

Segmented Turning

Benefits of Horizontal stacked assembly:

- Simplest and easiest to prepare
- Each piece can be “pre-rounded”
- No alignment concerns
- Easiest to visualize the finished piece

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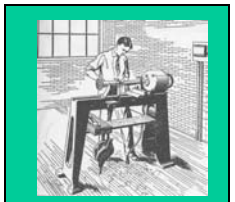
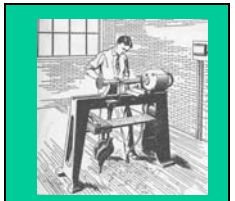


Segmented Turning

Drawbacks of Horizontal stacked assembly:

- Wastes considerable wood (unless using rings)
- Limited visual impact of mixed woods
- Hydraulic bearing effect when clamping
- End grain on two ends of every piece (tear out)
- Warping and cracks with unstable wood



Segmented Turning

Benefits of Vertical stacked assembly:

- Simple and easy preparation
- Can result in dramatic visual effects
- Minimal alignment concerns
- End grains can be hidden

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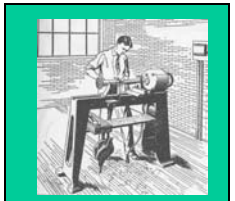

Segmented Turning

Drawbacks of Vertical stacked assembly:

- Hydraulic bearing effects
- Accuracy can be a factor
- Wastes wood
- Harder to round off prior to turning

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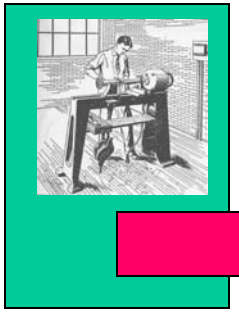
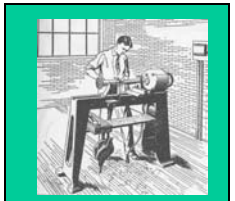


Segmented Turning

Benefits of Barrel assembly design:

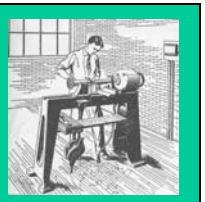
- Very striking visual results
- Most end grain hidden
- Lends itself to many variations
- Makes use of narrow strips of wood
- Generates discussion about technique from viewers



Segmented Turning

Drawbacks of Barrel assembly design:

- Accuracy
- More accuracy
- Might require a “top ring” to stabilize mixed woods
- Preparation time before turning
- Technical precision can overtake artistic expression (tendency to “overdo it”)
- Difficult glue up due to having few 90° angles



Segmented Turning

Benefits of Multi-planar assembly:

- "The gloves are off" design flexibility
- Very stable
- You're not likely to find another one like it by someone else

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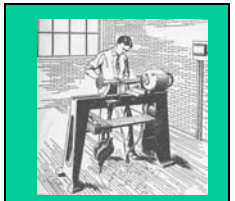

Segmented Turning

<u>Drawbacks of Multi-planar assembly:</u>

- Matched sets are unlikely
- Can waste a lot of wood
- Some of the most challenging glue-ups you'll ever encounter

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