

Spalting and Safety

Santa Cruz Woodturners, March, 2020

Wells Shoemaker Notes

Tim's story in our Turning in the Age of Corona (Episode 3, March 24, 2020) opened with a piece of exotic, spalted cherry. Spalting makes intriguing patterns, those snaky little black lines, variegated colors, and altered reflectivity. Of course, spalting is caused by fungal growth in fallen wood. Taken to its natural extreme, spalting verges into rotting, for want of a better word, and that eventually makes beautiful, crumbly humus to nourish baby trees.

The trick with spalted wood lies in **when** you mount it on the lathe...and **how**.

A mortise in the bottom of a bowl, gripped by an expanding chuck, is a practical and often artistic way to work with shallow blanks to preserve as much depth as possible, as we have all learned. However, there are a few things to remember, sooner or later learned by everyone who has used this approach. Most likely sooner, especially with **wood of questionable integrity**...which includes spalted wood.

I suspect every turner will have a slightly different view of some of these safety features and workarounds, but for my 2 cents worth, here's what I've been taught. **Other thoughts and workarounds ever so welcome!**

- Expanding chuck jaws need a substantial rim of solid wood for a reliable mortise grip, enough to resist splitting out when that puppy starts spinning around with a 2 hp motor cramming kinetic energy into every mechanical fitting and the bonds between those slender fibers.
- How much rim? I'd say at least a half inch (1.2 cm) in sound wood, **especially with a heavy or a deep bowl**. Experienced turners using reliably durable wood can get by with less, but smart ones don't stand in the flight path when they do. Some turners will pare down that rim as a finishing aesthetic step **after** the stressful work of hollowing out the inside has been completed.

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*Bottom view: 2.5 inch diameter mortise with 3/4 inch rim
in an 8" diameter, 5" deep maple bowl . WS*

- Dovetail shape chuck jaws in a mortise cut with a dovetail shape create a more physically reliable grip than straight contour jaws.
- Don't ever trust a mortise in checked wood, even if you have glued it. That wood, adjacent to your glue joint, is compromised, and stresses under RPM's can break it out. Some of those shards are sharp.
- Spalted wood does not have the strength of the native wood before the fungi got involved. Be really wary of a mortise in spongy wood.
- When in doubt, sacrifice a little finished depth, and make a dovetail tenon instead.

Interested in spalting? Look up Seri Robinson in the AAW website and You Tube. She's a Professor of Wood Science at Oregon State, an accomplished turner, and a marvelous speaker. She's also probably the world authority on spalting. Check out her book if you want to know about how those patterns develop and turning techniques to display them memorably: **Spalted Wood: The History, Science, and Art of a Unique Material.**

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Detail: Spalted figured maple bowl, 12" diameter. WS

The black lines are pigments deposited by fungi growing (eating) dead wood. The lines are actually barriers created by the fungal colony, keeping competing organisms from intruding upon the feast. Those barriers clog up the passage of fluid as well as fungal elements.

Some spalting fungi make orange, pink, and green colors, rare and prized by turners. You'll find them at convention displays with fancy price tags.

Finally, I put on my doctor hat, which isn't as early on the learning curve as my turner's hat, er, faceshield. Don't ever put any wood with a ring shake on your lathe. This dangerous split between concentric rings, also called a ring check, is not rare in spalted wood and not rare in wood which has crashed to the ground. It's either firewood (good plan) or a trip to the ER (bad idea).

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*Ring shake. Ballistic liability. (Internet image)
You've seen this, I know.*

Enjoy your time Sheltering in Shop,

Wells
March, 2020