

You can have your cake and eat it too!

(Safety while woodturning)

By

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Introduction

I always feel guilty when I go see the dentist. We all know the rules—avoid sweets, brush after every meal, floss several times a day.² Talking about tool and shop safety gets the same treatment in articles and books— always read the owner’s manual, inspect your tool for hazards daily, make sure your tools are properly grounded (sound familiar?)

The challenge I present to you is that it is possible to be safe and have fun in the shop as well. Some common sense, some discipline, some planning, some behavioral changes and listening to that little voice in the back of our mind can make shop time more productive, fun and safe.

In 2013, the average cost of an emergency visit was \$1,233. Do you need more incentive?

Personal Safety

Personal safety falls into a variety of discussion areas:

- State of Mind
- Physical conditions and impairment
- Clothing and Personal Items
- Hair
- Face Shields
- Hearing Protection
- Dust Control

¹ Mark is a self-taught turner who has been turning 6+ years for fun. Mark is a tax lawyer who also has a CPA and MBA. When he is not working in his professional life, being a spouse, parent or volunteer, he can often be found in his shop. He has been working wood for over 20 years and so far has never been to the emergency room for his hobby.

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² You can thank Levy Spear Parmlly a dentist in New Orleans who invented dental floss in 1815.

State of mind is an overlooked aspect of safety. If I am in a hurry, foul mood, or distracted, not only will I not do my best work, I am putting myself at risk. If you are feeling any of these distractive thoughts creeping in, shut off the lathe and take a break. A wood lathe spinning at 2400 rpm makes 40 revolutions per second, so things happen fast!

Physical conditions and impairment(s) are a factor we must contend with, particularly as we age.³ Know if any medication you are taking impacts your lathe work. If so, talk to your physician and pharmacist to see if there are alternatives or better ways to manage prescription drug reaction to your turning time. Recreational drugs and alcohol consumption have no place while turning. Have a drink afterwards to celebrate your time in the shop, not during a turning session. If you are having trouble gripping your turning tools look at other handle shapes, or ways to lessen the pain or awkwardness associated with holding the tool.

Wear appropriate clothing in the shop. Short sleeves and proper shoes are a must (no, turning in sandals is not safe). Use a turner's smock. A turner's smock not only keeps wood shavings from getting into every nook and cranny of your clothes, but is also a smooth surface that acts as a form of protection. Lose the jewelry, tie up long hair and be smart about what can wrap around a spinning lathe or happen if a tool falls on your foot.

Think about what you are standing on while you turn. A concrete floor is very unforgiving to the human body and wood turning tools. Consider a gel or rubber shop mat to decrease leg pain and make for a more comfortable turning environment. Choose appropriate and safe footwear.

Eye protection is a must and goes beyond what is needed for many other forms of power equipment work. Do not rely on prescription glasses or even shop glasses to protect you. They are designed for different dangers. A full face shield or face shield and built in respirator are a must. Note that all face shields are not created equal. Find one that fits well so that you wear it, and protects you from the force of flying wood.

Consider using hearing protection while you turn. Lathes are not loud in and of themselves. However, adding a dust collector and a sander to the mix can increase the total decibel levels to harmful. Remember: hearing is not repairable if lost!

Dust is a constant nemesis of the woodturner's hobby. Educate yourself about dust collection at the source and ambient dust collection in the shop. Almost every wood (or possibly all of them, it's not my expertise) are irritants to the human lungs. Note some woods are more than mere irritants and may in fact be a health threat to you. For a chart of wood toxicity go to:

<http://www.wood-database.com/wood-articles/wood-allergies-and-toxicity/>

³ Juan Ponce de Leon died never finding the fountain of youth.

Your Shop and Work Area

Talking about shop⁴ cleanliness, efficiency and safety is the equivalent to stepping into a debate on who is the better team between bitter football rivals. However, I will make the journey and ask you to keep an open mind as we go on it together.

View your shop not through your eyes, but through those of an insurance adjuster or safety inspector. Yes, I know that cord wrapped with electrical tape has been there for 10 years, but is it safe? Ditto the missing outlet cover half full of sawdust. All of our little “compromises” in our shop are part of the journey, but isn’t it time to sort them out, do it right and make your shop safer?

Some areas to put on the checklist include:

- Fire extinguishers and smoke detectors;
- Appropriately sized and stocked first aid kit;
- General shop layout and clutter;
- Flammables and toxic chemical storage;
- Wiring
 - Appropriate amperage and wire size
 - Circuit panel or on-off switch
 - Switch covers and outlet plugs
 - Code violations
 - GFI protectors
 - Separate lighting circuit(s)
- Extension cords and trip hazards

The Lathe

The lathe is a wonderful tool and at first blush is far safer than other woodworking tools!⁵ Used properly it gives great joy and an acceptable to modest level of risk. Sometimes I think that due to the low risk and inherent safety, turners think that nothing can go wrong. Do not accidentally fall into that trap.

Keep your lathe bed clean and do not let junk accumulate on the headstock or the lathe bed. The lathe bed is not a tool storage tray; never use it as one. Lathe tools are indiscriminate and cut people and wood equally well.

Keep nicks out of the tool rest and lubricate it and the ways. Set it at the correct height and distance from the work. Give the work a spin to make sure you have clearance and everything is tight. I grab the banjo and give it a shake before I turn on the lathe to make sure everything is tight.

⁴ I use the term “shop” loosely in this context. My grandfather’s shop was a 3’ counter next to the dryer and on non-wash days he was allowed to use the dryer top too if he put an old towel down.

⁵ That is why I am not a chain saw carver; there is no such thing as a “minor” chain saw accident.

The tool rest is a safety feature of your lathe; always use it to its full potential. It acts as a finger rest, stop and a reminder of where you are and are not safe to put your hand (think natural edge bowl). Reposition it often, always set it to the correct height (and stop to change it often). Do not fall victim to the “I only need one more cut” syndrome, stop the lathe; reposition the tool rest and do it right. Yes, I said stop the lathe! Do not reposition the tool rest on a lathe under power.⁶

Whenever I turn off the lathe at the end of a turning session I turn off the master on off switch and turn the variable speed all the way down. That way whenever I approach the lathe I know what to expect. If I change belt speed, I set it back to my normal setting so there are never any surprises.⁷

I never turn on the lathe unless I am wearing my face shield (it hangs on the on off switch housing). Create safe habits so that you do not have to think about it. After you have done this, the safety procedures do not seem to be an extra step, just part of turning your work.

The tail stock is your friend, use it whenever you can. Even pieces in a chuck are safer with a tail stock.⁸ I keep it engaged as long as possible. Vibration is reduced and it creates two points of contact with the wood. It has saved not only a piece of wood or two, but I have been kept safe more than once from a situation by using a tail stock.⁹

Wood and its Dangers

Wood varies not only by specie, but by tree and even where on the tree the wood was harvested. For example, lower trunk wood on a tree that grew on straight level ground will exhibit different turning characteristics than say branch wood. Add variables such as growing on a slope, near water, or being subject to insects or other stress factors and you may find that a single tree exhibits multiple personalities while being turned. Further adding to the mix is if the wood is wet or dry when turned,

⁶ I do admit that I do sometimes hit the off switch, loosen the banjo or tool rest and reposition it before the lathe stops turning (at least on my lathe that does not have dynamic braking, I am not superman). My justification is that if I hit the piece there is only centrifugal force behind it under the flywheel effect but no more force is coming from the lathe itself).

⁷ Surprises are great at birthdays and Christmas, but not finding the lathe in the high speed belt setting with a 10 inch out of balance bowl flying around the room!

⁸ Let me let you in on a secret, wood sometimes exits the chuck. I have had spigots snap off sound wood, internal recesses crack out, and just mystery incidents where a bowl went airborne from a high quality chuck that had a spigot contacting the wood correctly.

Yes there are correct and incorrect ways for wood to make contact in a chuck. Read your instructions. Generally the wood must not bottom out in the chuck so that the spigot of the work touches the lathe body or the chuck jaw bottom. The spigot must contact the jaws correctly and cover most of the jaw surface, and most importantly the work must contact the top of the jaws at a full contact area.

⁹ As we advance in our woodturning journey we seem to turn more complex forms, thinner walls, more “air in wood with voids or wings, and wood with less structural integrity. All of these situations in the progression of turning make safety more important, not less as we progress as turners.

how it was dried, and if anything influenced the wood during the process of drying (e.g. spalting as an example).

I like turning figured wood and odd growths on a tree (burls, branches, tree crotches, roots) and need to remind myself of the wood's inherent surprises (both positive and negative). Project failures, bark inclusions, rocks (yes I said rocks), bullets, barb wire, nails, fence staples and many more little wonders may await you in a piece of wood! As my grandmother said multiple times¹⁰ "Mark, if you are in for a penny you are in for a pound." Understand that you must take extra safety precautions because the centrifugal force of turning may cause your work to explode, crack, and fly around the room. Use your tail stock whenever possible, watch your lathe speed and stay out of the line of fire. Things happen fast to wood turners.

Above I talk about wood toxicity. It is not a joke. I know a woodworker who developed asthma (permanently I may add) from working with rosewood. If your skin tingles, your eyes water, or you start coughing or sneezing stop and consider whether you should continue with the turning and what additional precautions you need to undertake. I have a piece of wood that has sat in my shop for 4 years to remind me that that piece of wood and my body are not friends.

¹⁰ I was a discipline problem and spent a lot of time with Grandma Bowman, including one complete summer, but alas, I digress.