Outline for Chainsaw Demo Sept 19, 2020

DRAFT #4 Final WS 9/18/2020, Updated June, 2021

Introduction—Chainsaws are the key to inexpensive wood for turners, but it takes knowledge to cut a log in a way that yields high quality blanks. Purpose of SCW's demo is to share information about how to do that safely, efficiently, with minimum of waste and frustration. Turners can all glean useful information, based upon SCW member survey 7-20.

Safety First

- Chain saw users have either been injured or will be, with rare exception
- "PPE"—

- Eye & ear protection
- face protection
- gloves—all the time
- chaps—*not sissy!*
- heavy boots/steel toe
- hard hat, especially when felling & wading into branches

- Newer saws with chain brake/kickback brake vs old limb eaters. *Out with the old.*
- Footing—slipping with running chain → blood loss
- Tangles & small limbs under tension, typical for fallen trees →jaw breakers
- Nose of the chain → violent movements faster than human reflexes
- Mobile, unsecured logs → medieval injuries
- Dull blades w forceful pressure→ trouble (just like gouges & kitchen knives)
- Tree falling—where major injuries occur, not stitchable cuts & bruises
- Novice and/or overconfident use...and alcohol...elevate risks
- Fire danger w sparks, gas spills in dry season
- Put the sheath back on by habit
- You will get tired. Take a break. Just like skiing and "just one last run"...injury risk (and judgment error) skyrockets with fatigue
- Wet wood weighs at least 60 pounds per cubic foot. A 16" long, 12" diameter wet log weighs 60-70 pounds. A 24" diameter wet log weighs close to 250 pounds. Don't injure your back...get help or hydraulics

Equipment: Saw and Chain

- Pick brand with reliable, nearby vendor with service reputation
    - Local preferences vary just like Ford vs Chevy
    - Stihl, Husqvarna most common for pro tree workers
- Buy local, enjoy local customer service
- Gas-oil, corded electric, battery power.
    - Gas-oil more powerful, wide range of capacity, but noisy, polluting, smelly, fuel storage safety issues...all better now than even 5 years ago
    - Corded electric—powerful enough for most blanks, can use inside, relatively quiet. Limited to short bar, range limited, maintenance easy
    - Battery powered—nowadays quite powerful, run 30-60 minutes, totally portable. Limited to short bar and duration of charge
    - All can hurt you
- Price varies ($200 to $2000) by bar length (14" to 36"), power, brand, intended intensity of use (homeowner occasional vs professional tree worker)
- For a turner, regardless of choice, going to cost $200 and up, plus accessories. Minimum $300 outlay
- Not generally smart to buy a used machine

- Chains—
    - standard and rip (blank cutters w 2 saws may want a rip chain on the bigger one). Sharpness more important than XC vs rip grind)
    - Smart to have at least 2, so you don't need to stop cold if you hit a nail, dull the blade on soil or embedded rocks, get unsafely dull, or ruin it some other way. (I keep 3). Always sharpen after day of use...same logic as keeping fresh batteries in your emergency kit
    - Buy blades from same vendor who sold you the saw...loyalty matters
        - Exasperating to order chain online and get one that isn't right
    - Pitch and gum removal important...do it while you're thinking about it.
        - Simple Green, solvents, elbow grease
- Chain oil smart...often forgotten. Used crankcase oil not so smart.
- Metal detector? Seriously consider for first 8' of a trunk in a populated area

Sharpening

- Use a guide...naked file only for experienced users
- Guide marks proper angle, glides evenly, easier ergonomic grip
    - 30 degrees for standard cross cut
    - 10 degrees for rip
    - Makes a difference
- Use sharp file...life is too short for files that don't cut. Buy a box
- Always start the day with a sharp chain
- Bring that gear with you to the field if you're "out there"
- Wear gloves! There are 50–80 little knives on a chain looking for fingers

Fuel

- Gasoline loses octane with time. It's not "bad," but it doesn't drive a saw optimally, and it's a notorious cause of difficult starting (B&B mantra)
- Use high octane gas to mix your fuel.
- If you're not likely to use a gallon in 6 months, consider the stabilized, pre-mixed fuel. Avail in hdw stores and saw vendors. Stihl & Huskie: 1:50 ratio. Others may be 1:40. Check to be sure.
- Mixed fuel is costly ($12-15/gal), but so is a service visit, loss of a planned productive day, etc.

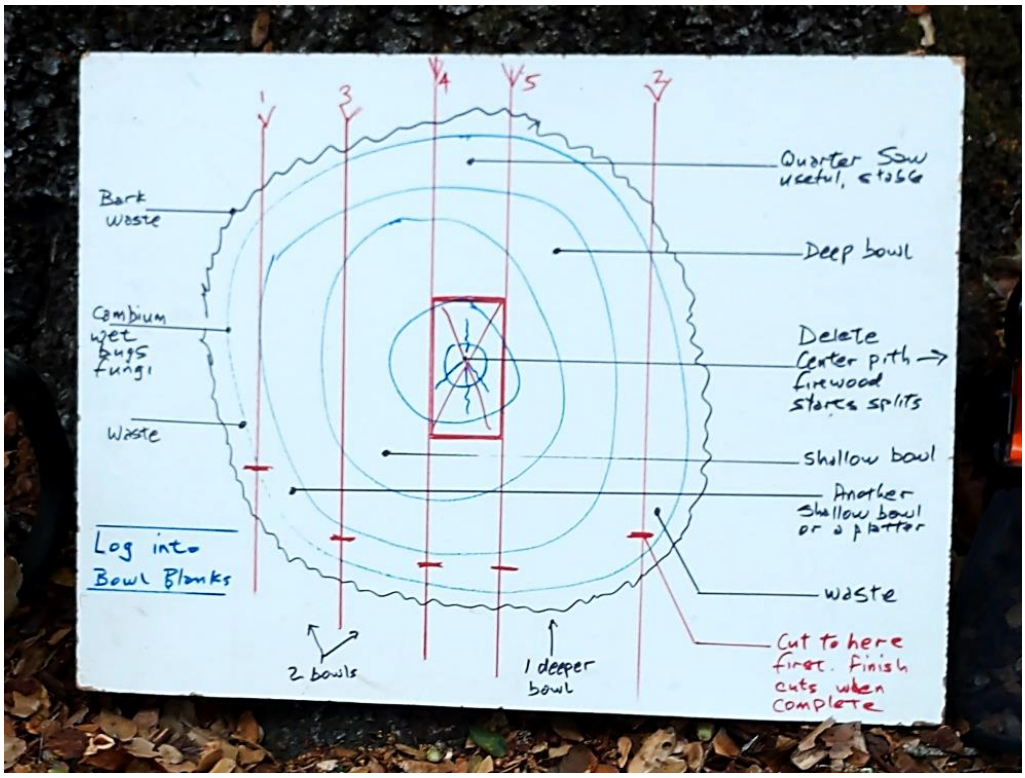
Cutting

- Stabilize the log if not held naturally
- Know how log will move when cut...or weakened. If unsure, get help...pay a pro. Otherwise, you may have to pay a different kind of pro in the ER.
    - Don't cut a round off a log uphill from you (yes, people do this)
    - Don't use your chainsaw while you're on a ladder. Really. The whole tree moves when you unweight a branch, pretty fast, too.
    - Small branches under tension can spring with amazing force and speed when cut—think bow and arrow, or maybe catapult. Jaw breaker.
    - Anticipate movement. Wading into a freshly fallen tree is not smart for early stage sawyers
- Anticipate if a cut off segment will fall away or pinch...and finish the cut from top or bottom accordingly
    - Wedges for binding—keep in your pocket (I have some to pass out as "premiums")
- Finish through-cut shouldn't hit soil
    - Use a peavy, cant hook, timberjack to get the log above ground, or...
    - Cut partially and roll log to cut last bit...or cut from underneath.
    - Clean off adhering soil with a hose or tool...or peel bark
    - Use wedges to prevent binding of your bar, damage to chain
- Driftwood and root burls are full of rocks and sand. Be philosophical.
- Gentle pressure
    - If too much required, you're probably dull...same as lathe.
    - Use the "teeth" on the body of the saw as a fulcrum and use leverage, rather than brute strength, to advance the blade.
- If cut wants to curve to the side—your chain is dull on one side (or both)
- Nose of saw should protrude beyond far side of the cut. If it's buried, you're asking for trouble. Only experienced pros should tinker with this rule.
- You *will* get tired. Take a break. Just like skiing...injury risk (and judgment error) skyrockets with fatigue.

Cutting a Turning Blank from a Round

- Stabilize round in a horse or wedge in some other reliable, secure fashion
- Read the log for tension/compression wood, character (crotch/defects/etc)
- Delete the center pith—*if this is only message takeaway for this demo, good work for the day*
- Shrinkage and warp
    - Tangential cut—character, most bowls because of cylinder shape of trunk
    - Radial/quartersaw cut—stability. Save these pieces for platters, legs, spindles
- Mark the log—chalk or crayon
- Saw slabs along the grain line...not cutting down end grain! (Common error)
- First cut—vertical cut, take off bark and some sapwood on both sides. That makes a flat surface for later work. Don't cut all the way through (yet)
- Then saw vertical internal cuts—2 for rounds 16" or less, more possible depending on dimension & contour of round
    - Go either side of the center pith
- Use wedges for deep cuts if binding
- Finish the cuts at the end

- Once blanks separated, either
    - Cut to round w chain saw (good enough)
    - Cut to round w band saw (has its own dangers, esp wet heavy wood. It won't stay round when it dries)
- Unless you're planning to do natural edge, get rid of the bark. That's where invasive insects and fungi flourish...and they can ruin your blank while it's drying. Bark may also collect sand and other abrasives, and it's harder to store
- If you are not planning to do rough-out turning within a week, use a sealer ASAP to reduce differential drying and unavoidable splits and checks.
    - At a minimum, coat the end grain
- Even if you did that, don't procrastinate with roughing out, or else you risk ending up with a stack of labor intensive firewood
    - Especially hardwoods with high coefficient of shrinkage, including madrone, coast live oak, and sycamore locally (Hoadley's book chart will be used FYI—explains a lot!)
    - Softwoods vary, but don't dawdle.
        - Redwood more forgiving than most! (4% shrinkage vs 6-12%)
- Store in cool place, out of sunlight (oak borers attack more than oak)
    - Ideally some air circulation but not extremes of temperature and humidity,
    - Hard to do outside in summer, e.g., Boulder Creek or Morgan Hill in July!
- Finish turning when moisture content down to 12% -14% in our climate (inland vs maritime humidity differences, also seasonal). Otherwise, bowl will continue to move/shrink/deform/check after completion.



Note radial splits starting at center pith within several days of felling. Leave this, and it will extend through your blanks. It's firewood. The quarter sawn segments above and below, however, are quite stable, valuable for stool legs and spindles. In large diameter rounds, may serve nicely for stable platters.

Sequence for presenters: DRAFT 7/24/2020

Time (min)	Subject	Presenter	Note
0	Introduction, Purpose, Safety, Equipment (broad brush)	Wells S	Set expectations
20	Tree to log to rounds Cross cutting	Roy H	Cross cutting in the field
35	Reading a log with character	John Wells	Crotches, tension/ compression
50	Marking and cutting a blank	Raf	Using the horse More input on reading log Demo the cuts, maybe x2
65	Ripping chain demo	Dan Aldridge	Maybe also demo another way to stabilize a round if no horse in the stable
75	Use a chain saw instead of band saw to prepare for lathe	John Wells	Important to have choices! Demo on a slab pre-cut
90	Women and chainsaws "Tomboy Sawyers"	Sue	Voice of experience from a physics teacher & lifelong woodcutter
100	Break up into focus demos		4-5 per station for spacing
	• Sharpening	WS	Basics, safety. On-saw & workbench methods
	• Maintenance at home and in the field	Roy Holmberg	Won't start when you're far from home How to put the saw "to bed" when you're done Fuels
	• Non-gasoline saws	Raf & John	Battery, corded demos, discussion pros & cons Likely demo on small diameter logs
125	Rotate stations, repeat focus demos		
145	Adjourn demo, move to lunch		Box lunches, beer, soft drinks in single use, COVID conscious fashion