The Bowl Gouge - Steve Reynolds June 2023

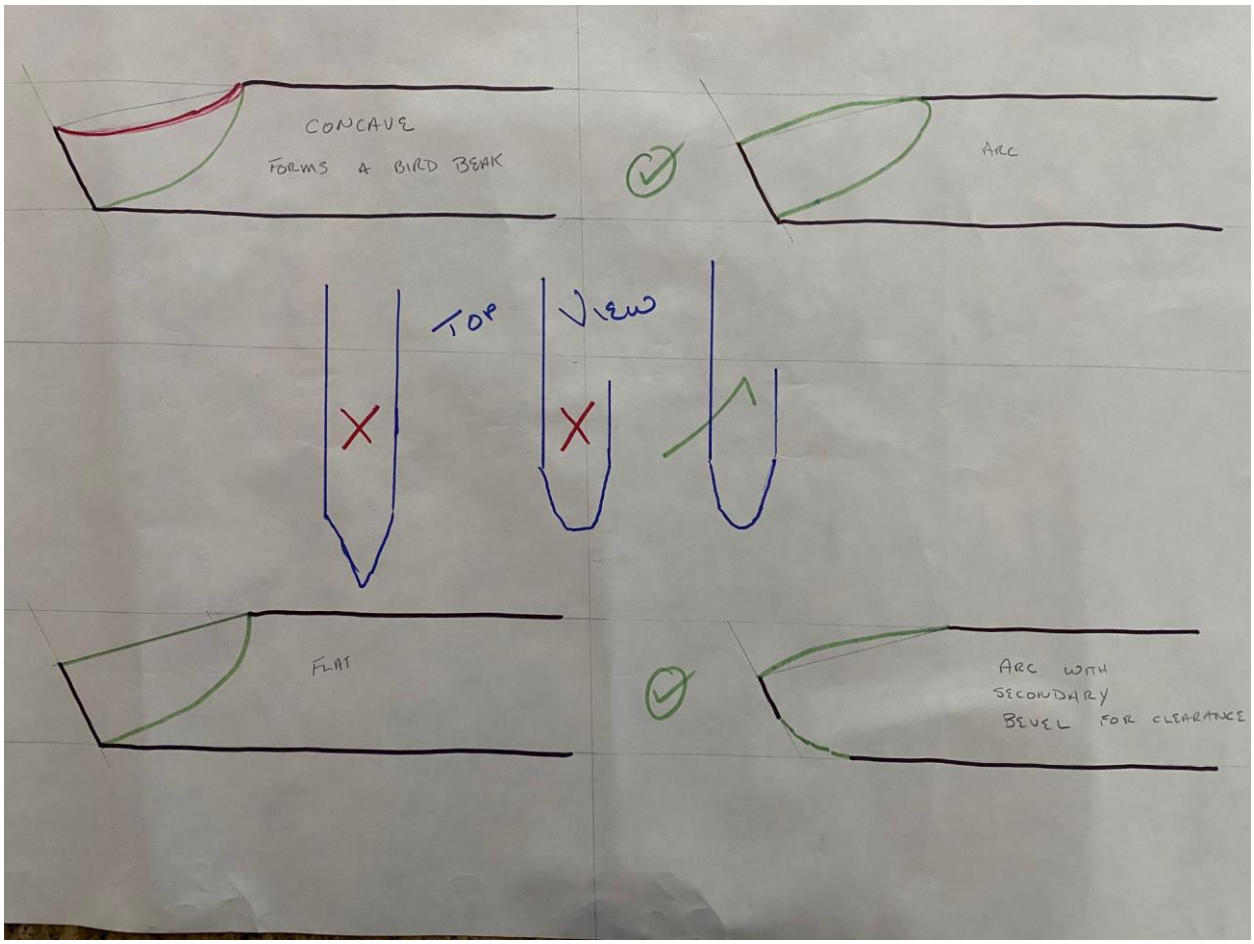
Talking points for discussion.

- A ½ inch bowl gouge is probably the most utilitarian tool for lathe work.
- Imagine a red line down the center of the flute. Many instructors put one on the student's tool. If you can see the red line you are about to have a catch. Because of the sharp geometry of the grind bowl gouges can produce some of the ugliest and most dangerous catches in lathe work.
- There are three basic grinds:
    - Fingernail
    - Bottom feeder
    - Traditional (looks similar to a spindle roughing gouge)
- Even using a jig you must inspect the grind and insure there is no faceting and the wings are straight or slightly convex.
- The inside corner of a bowl is the known problem area. A very open form has little problem. Where a closed deep form can be a major issue.
- Because you end up working over the lathe while inside a bowl footwork and tool control become more difficult and yet more essential.
- Lathe speed is essential. A rule of thumb is D x RPM = 6,000 to 9,000, where D is the diameter of your piece in inches (not the radius). Like most 'rules' this is an approximation and you want to err on the side of caution. A 6" bowl can be turned at over 1,000 RPM but only after it is well balanced, and closely inspected for cracks or other flaws in the wood. So start slow and work up to the quicker speeds.
- Since we are doing math – slow down as you get to the center of the piece. The 6" bowl at 1,000 RPM above is moving about 1,570 feet of wood past the tool every minute when you are working on the rim. But only about 250 feet as you get to the center. So don't push to try and cut as quickly as you did at the rim.
- With a blank in bowl orientation on the lathe the tool sees grain changes every rotation. Spindle work is all side grain, also most segmented work. Bowls see end grain and side grain twice on each rotation. End grain is up to 10 times as hard as side grain in most woods. End grain is also much more prone to tear out. This is why you hear about light finishing cuts.
- Wood moves and will flex on the lathe. Trying to cut very thin walls you need mass left in the bowl to stabilize the piece. And once the rim is done do

NOT go back to make another cut. It is already wobbling even if you can't see it.

- Since the steep cutting angle on bowl gouges can make it an aggressive tool it is essential to use the bevel. Make sure you have the tool on the side (3 o'clock) and the bevel pointed in the direction you need to go. Controlling the tool on entry into the inside of a bowl feels very awkward. The tool handle is waving in the air on the other side of the lathe?!?! Keep control with the left hand on the tool/tool rest to get start the cut. After the first couple of mm the bevel will support the cut.
- Grinding angles – Consistency is more important than exact angles. My tools are about 45 degrees for spindle tools and 60 degrees for bowls. To tell the difference between the tool blanks look at the depth of the flutes. Bowl tools, both V and U flutes, are deeper than spindle flutes.
- As with spindle tools rotating the tool in your hand is necessary. In spindle work turning beads / coves requires tool movement. In bowl work, particularly on the inside you are doing an equivalent amount of dancing and twisting. Start with the tool way over the lathe and turned to 3 o'clock. Transition to 2 o'clock and make a sweeping circular cut being careful to stay on the bevel. If you have a death grip on the tool with your left hand you are not on the bevel and are asking for trouble.
- Finishing cuts are done with a light touch, slow movements and the tool at almost 3 o'clock (2:45). Have your feet where you need them to be to end the cut.

Profiles of a bowl gouge are shown below. The wings should never be concave. A convex shape is best but a straight edge is acceptable (but aggressive). The tip should be slightly rounded to match the tool shape. A sharp, bird's beak or flat is not acceptable.



This is a good video on how to sharpen and how to correct a bad bowl gouge grind.

[Thompson Tool Sharpening]