How to Avoid a Catch

Woodturner's Fear Factor

By Lyle Jamieson

If you've been around the AAW for a decade or more, you may recall "Five Ways to Avoid a Catch," a well-read journal article Lyle Jamieson wrote in 1996. Lyle has revisited this topic with fresh drawings and thoughts to take you beyond the suffocating fear of catches.

It seems simple, but there are complicated forces taking place while you shape a revolving piece of wood with your turning tools. I want to simplify the process and put a language to catches. If you understand what causes a catch, you can eliminate the cause.

There are just four cuts in all of woodturning; 1) push cut, 2) pull cut, 3) scrape and 4) sheer scrape. Let's break down these cuts into two groups:

- The push and pull cut require bevel support to prevent catches.
- The scrape and sheer scrape require that you don't violate the 90-degree rule. More about that later.

Start with sharp tools

A primary aid to preventing catches is to turn with sharp tools. A sharp tool can sheer off those end-grain fibers cleanly and smoothly. However, a dull tool will push, grab, and tear out end-grain fibers. You can have all the right techniques and still have trouble with catches if your tools are not sharpened properly and often. I am into easy and I don't like to sand.

When using gouges and doing the push and pull cuts, most catches come from allowing the gouge to cut while not being supported by the bevel. Without bevel support, the cut will dig in violently in a split second. Big chunks of wood are ripped away.

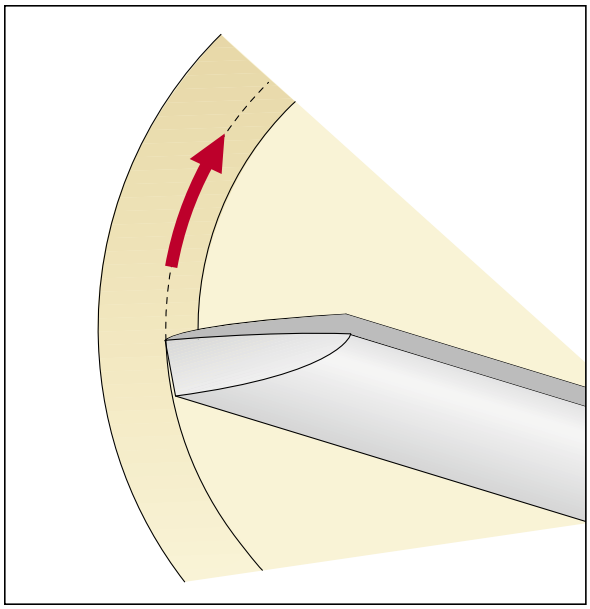
The bevel prevents the gouge from cutting too aggressively—it is a controlling factor.

Inside the bowl

Let's first focus on the inside of a bowl, since that is where catches are most apt to occur because the inside of a bowl is where we are prone to loose bevel support.

The direction the gouge wants to cut is along a line from the heel

Bowl gouge inside the bowl



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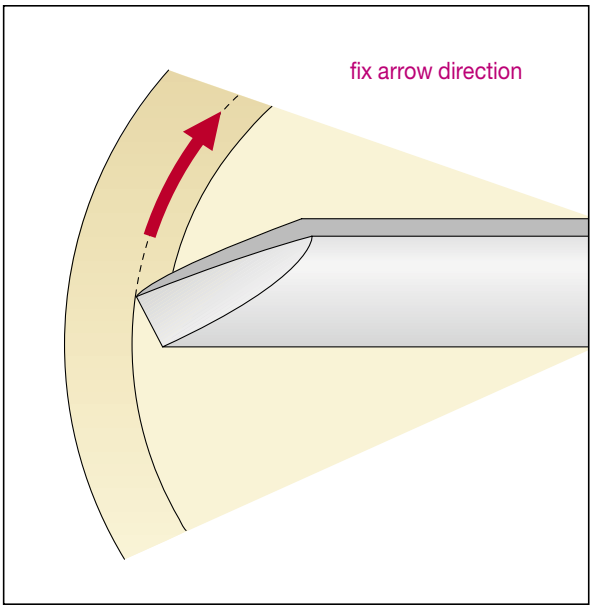
Note the arrow indicating the direction the tool wants to go. Swing the handle slowly toward your body to direct the bevel to travel the path indicated by the dashed line.



RISKY
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of the bevel to the sharp point of the edge, as shown in **Drawing 1a.** The first approach is to relax and let the tool go where it wants to go. Relax the tool rest hand and direct the cut by moving the handle hand. You can get pretty good at white knuckling your way through a cut, but the surface left behind needs lots of sanding, as shown in **Drawing 1b**.

It is not much fun when a catch ruins the shape you intended. Relax and follow the direction the tool wants to go by steering it with the handle hand.

Find the sweet spot

You will hit the sweet spot for a clean cut with the flute pointing the direction you want to travel with your cut. The twist of the tool will have the flute pointing at a 45-degree angle. Whenever possible, maintain this sheering cut to cleanly slice through each grain fiber as it spins past your tool. Your gouge cuts the shaving at the tip of the cutting edge, as shown in **Photo 2**.

This may help: Think of the motion of an ice cream scoop scooping out the inside of the bowl. You have one hand on the handle of the ice cream scoop and you follow the shape of the rounded scoop for your ice cream cone.

Now with the bowl gouge, you follow the little tiny tip of the tool, or the bevel. Swing the tool handle to follow the contour of the vessel with the bevel.

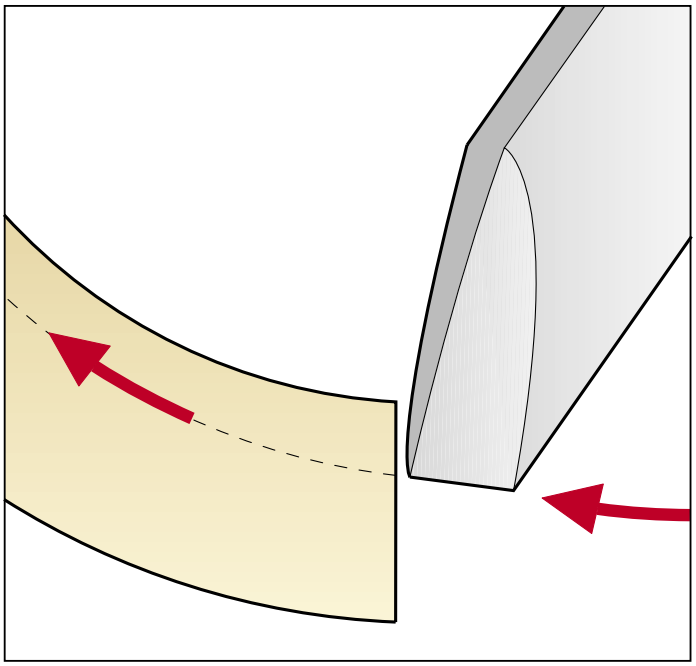
"Ride the bevel" is the usual term to describe this, but it is a terrible term. You don't ride the bevel, you need to follow it gently. Riding the bevel too hard will result in a number of problems: burnishing the surface left behind, creating vibrations, and bouncing the bevel into any voids in the vessel. For me, "bevel-supported cut" is better.

Note the arrow indicates the direction the wood is traveling past the tool. The 45-degree angled line shows the angle that will produce a clean slicing cut. To get this angle, twist the tool on its axis with your handle hand. The shaving comes off the right-hand side at the tip of the tool.

Bevel-supported cut

One of the hardest things to accomplish is to start in a bevel supported cut. The tool wants to skate in a spiraling manner across the face of the wood when you touch the wood at a 45-degree angle.

Starting a cut—there's an easier way



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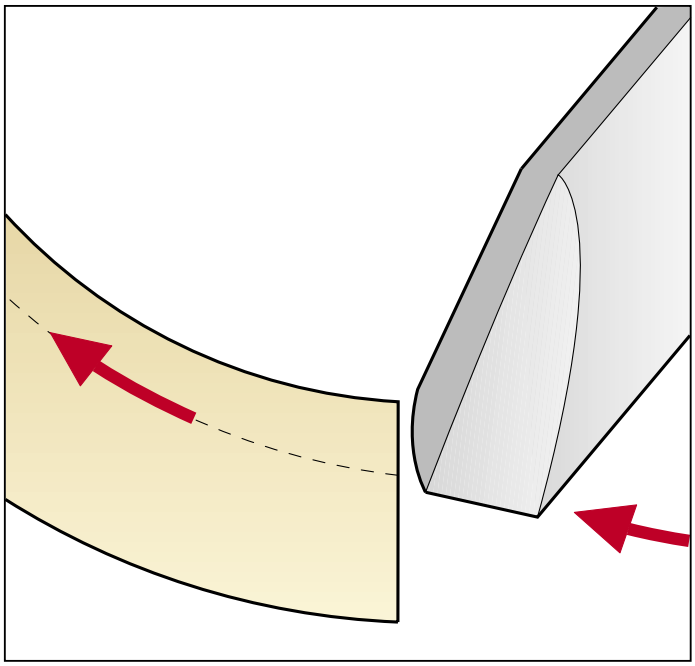
This shows Lyle Jamieson's modification to the David Ellsworth-style bowl gouge. Note the side view give you a profile of the grind—almost a straight line from the tip to the wing corner.



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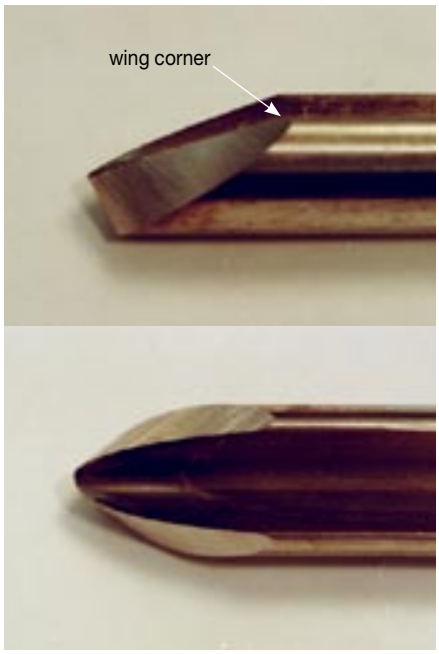
A gouge with a hump at the tip cuts into the wood long before the bevel has a chance to give support. This can cause a catch or even blow up a thin-walled bowl or vessel.



The side profile of Lyle Jamieson's favorite grind has nearly a straight line from the tip to the wing corner.

The bowl-gouge grind can make it easier to enter a cut. I refine the Ellsworth grind slightly to make the entry into a cut easier for me. David's grind has a slight hump near the tip that attempts to grab the wood first before the bevel support has been established. (See drawings on this page.)

What works for me is the sharpened edge is almost straight from the top to the back corner of the wing—there is no hump when viewed from the side.

Hollowing systems

When setting up your supported hollowing system for boring out the interior of a hollow vessel, make sure the scraper cutting tip is parallel to the floor and on the center line of the vessel and you will never get a catch. This set up will be cutting right at 90 degrees. (You can error slightly with the tool-rest position on the high side but never have the cutter below center in a hollow form.)

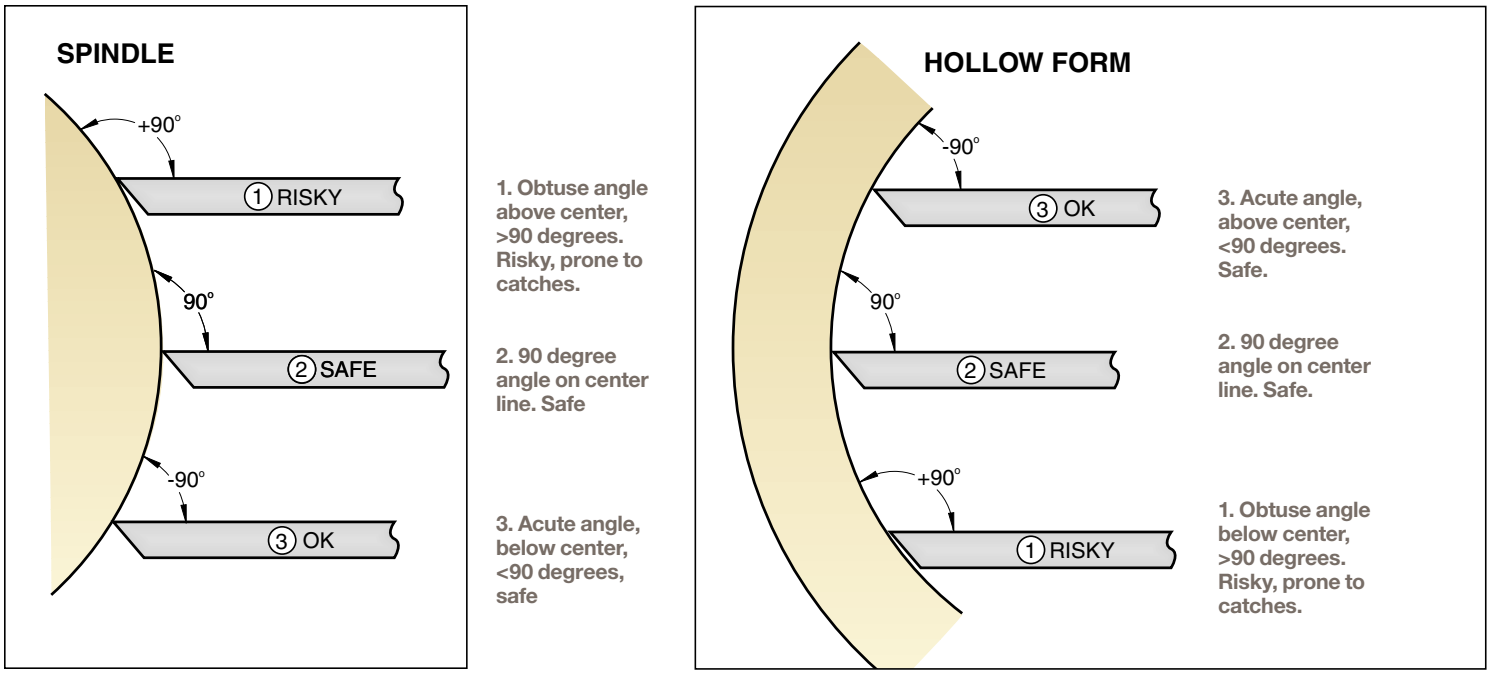
If you choose to twist the cutter for a sheer cut, keep this in mind: When you angle one side of the cutter down to sheer scrape, the opposite side of the cutter is pointing up into the wood and will get grabble and produce a catch.

Scraper strategy

A scraper requires an entirely different process. Whenever a cutting edge touches the wood without the bevel support, a catch can occur. (The exception is the edge touching the wood at less then a 90-degree angle, as shown in **Drawing 4a**.) With a scraper positioned flat on the tool rest and parallel to the floor, the tool-rest height is critical. If the tool rest is high on the outside shape, (like a spindle) it gets risky. If the tool rest is too low

box on left will extend to include callouts

Scraper strategy



on the inside shape, like a hollow form, it gets risky, as shown in **Drawing 4b**.

This is why the popularity of negative rake scrapers came into vogue. The negative rake gives you extra insurance to not violate the 90-degree rule. With hand-held scrapers, you can change the angle at which the tool touches the wood by raising or lowering the handle.

Move beyond fear

As I teach at chapters around the country, I meet many self-taught students. They settle for techniques that are difficult and demand considerable sanding. Some techniques are downright dangerous.

The fear generated from catches is suffocating. If you walk up to the lathe with the fear of getting catches, you don't know what fun you are missing. Do you fear taking one more cut?

The fun and enjoyment starts by being in control. Taking "catch" out of your vocabulary will make turning a lot easier and more fun.

You can watch others turn or read all the articles available and still have catch fear. I suggest getting some hands-on help. Take your turning fun to the next level. It is not necessary to pay loads of money to get some hands-on help. All AAW chapters have good turners to mentor you—usually just for the asking.

Recently, I had a chance to speak with Michael Hosaluk and he made a statement that summed it up. He asked "What is the difference between a beginner and an advanced turner?" And Michael answered his own question with, "It is what you do with the basics."

I truly believe this approach. Get the foundations right and it opens up possibilities of excellence rather that creating obstacles and settling for mediocrity.

Now, let's get over your fear of catches. The fun and creativity locked up inside you will take you places you never imagined.

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