

Do Guards Curl More?

By Jon Mielke

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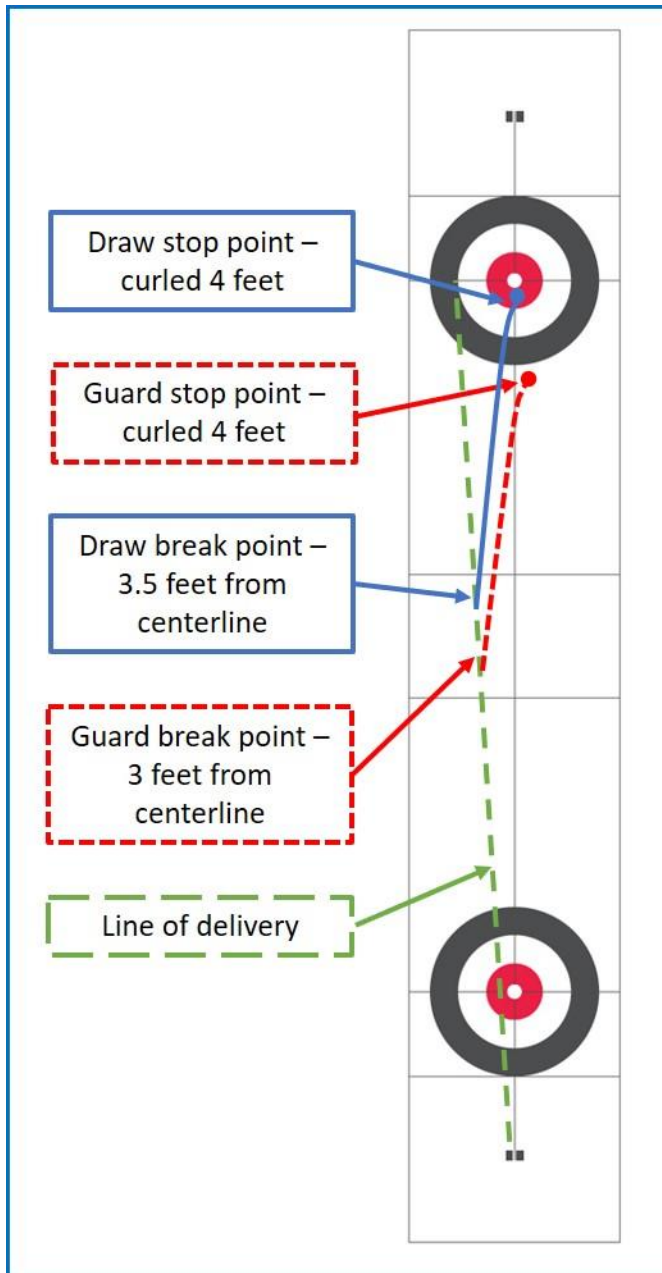
Back in the early years of my competitive career we spent several hours of windshield time discussing whether or not guards curl more than draws to the house. It was certainly worth discussing then and it is still a worthy topic now because curlers still complain that their attempted guard “over curled” and left the opponent with an open hit. So, do guards curl more than draws?

Let's assume that your team just threw a rock to the four foot right on the center line. The ice is curling four feet so you skip held the broom at the outside edge of the eight foot circle, thereby allowing for four feet of curl. The other team played a hit on your stone but missed. Now your skip is calling for a guard to protect your stone in the four foot. Where should the skip place the broom?

First of all, it is important to realize that curling stones do not start to curl the instant that they leave the shooter's hand. Stones travel down the sheet on a straight line and start to curl when the speed is reduced to a point where the running surface can start gripping the tips of the pebble. Stones at some clubs may curl gradually starting half way down the sheet but often most of the curl is somewhere around the far hog line.

Because rock speed is a key determining factor regarding the start of curl, a skip must recognize that a guard will start curling sooner than a draw to the house because it is thrown with less velocity. It will reach that critical break point sooner than a stone that is thrown slightly harder. For example, a draw to the button may start curling ten feet outside the far hog line but a guard may start to curl five or ten feet sooner.

As the accompanying diagram illustrates, a stone that is thrown to the outside edge of the eight foot is moving away from the center line. The farther that it travels before it starts to curl, the farther it will be away from the center line. A draw thrown on that line may, for example, be 3 ½ feet away from the center line when it starts to curl but a more lightly thrown guard may only be 3 feet away from the center line when it starts to curl.



From each stone's break point, they may both curl four feet. The stone that is thrown with tee line weight will end up on the center line but the stone that is thrown with guard weight will end up beyond the center line. The guard did not curl more; it just started curling sooner and ended up on a different line.

The moral of the story is, take a bit more ice when throwing guards. More often than not you will end up with a more successful shot.

Keep in mind, however, that several factors will impact the final results of each shot. The speed of the ice may make a difference and the sharpness of the stones is certainly a variable. The shooter's release point versus that of other players will also be an issue and so are the cleanness

of the release and the number of rotations applied to the handle (more rotations generally means less curl). Taking more ice may also force you toward the outside of the sheet or on to a path that hasn't been played on. These lines of delivery may produce curl that is different than the curl that has been observed elsewhere. If sweeping is applied to one shot vs. the other to end result will also be impacted.

Curling is a demanding and sometimes frustrating game but playing the odds will usually work in your favor.

Until next time, I hope your season is going well. Think about playing in a bonspiel or inviting a friend to try curling. Good Curling!

Jon Mielke lives in Bismarck and is a Level III instructor, a Level III coach, and a member of the US Curling Hall of Fame. All of his previous training articles are available on line at: USA Curling – Media – Curling News – Columnists – Jon Mielke.

From: [Tom and Peggy .Jones](#)
Sent: Monday, March 16, 2020 5:41 PM
To: jcmielke3@bis.midco.net
Subject: Fwd: Curling pics

Jon,

I took instructor training from you in Willmar, Minnesota probably 12 years ago. Your column in curling news is by far the most useful piece in the publication. Thank you for investing the time to produce such great tidbits of knowledge and experience for the rest of us.

I do, however, have to disagree with you on your theory of guards overcurling. Your claim that rocks go straight until they slow down enough to grip the pebble is inconsistent with the observation that take-outs curl. If a guard has to slow down, say, 50%, before it will start to curl, a take-out, even a control weight takeout, would never move at all. But they do. I subscribe to the general explanation of curl that because the rock is slowing down, there is more weight in front, which serves to "collect" the small amount of water generated by passing a weight over the ice, and that the extra water under the front of the stone reduces friction under the front of the stone, allowing the front of the rock to slip in the direction of the spin more than the back of the rock to slip against the direction of the spin, with the result being that the rock follows it's leading edge and curls. This happens at all speeds, but becomes more and more pronounced as the rock slows down. This is why even fairly heavy takeouts will move a little.

Back to guards...9 or 10 years ago, I wondered what lines rocks would end up on if thrown the same way (line and curl) with different weights. I didn't do very much, and after just a few rocks, I decided that they all ended up on about the same line. But before I brought that poorly documented conclusion to you, I thought a better test was in order. I stopped by the club, and one of our more consistent curlers was practicing. So we did an experiment. I put the red rock on the t-line where I thought a T weight shot curl to the button. Then I had him throw a t-weight, a top of the house weight, a guard, and a hogged shot just to see what would happen. As it turned out, the lighter shots curled LESS, with the hogged rock being about 6 inches from the center line.

Then I threw a few rocks just to make sure he didn't do anything "funny." I tried to follow the same pattern but threw two in the house, two guards, and finally hogged one. My rocks showed the same thing. Lighter rocks curled less, with my hogged rock being about 12 inches from the center line. Note that his four-foot rock is mostly across the center line, while my four-foot rock is mostly still on the right side of the center line. So apparently I consistently threw about half a rock to the right of him. Rotation?

Certainly there could be some error in how we delivered our rocks, but the fact that not a single shot short of t-weight reached the center line is pretty strong evidence that guard weight shots do not curl more than t-weight shots.

Here is my theory as to why people perceive overcurling of guards. It has two components.

The first is that people want to put a guard short of the rock they are guarding, but on the same path. So they throw something too close to the same line, expecting that the shorter stone will follow the same path and just stop shorter. But if that perfect t-weight shot moved a foot in its last 12 ft, the broom for the guard shot needs to be at least a foot outside the broom of the t-shot. So even though the guard rock did not actually curl farther than the rock being guarded, it is not guarding it well because it is not out far enough. Second, now that we are aiming so far away from the center of the ice, people may not turn their foot in the hack enough and throw a little inside, again causing the rock to "overcurl." And as you said, many other things can influence the shot including rotation, sweeping, flaws in the ice, and sometimes differences in the sliding surface of the rocks.

At any rate, I think you do a great job and are a gift to the rest of us curler wannabees. I would be very interested to see you do some similar experiments with weight and line, and see if you get the same results that I did.

Good Curling,

Tom Jones
Brainerd Lakes Curling