



Instructor's Corner

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How does the skip know where to put the broom?

—Wanda Anzer

One of the most challenging parts of the game is knowing where to put the broom for a given shot. One thing is for sure: when the broom is in the wrong spot, all four players on a team look bad. So how do skips read the ice and figure out the proper broom placement? I'd like to say it's because skips have ice-reading super-powers, but the reality is that ice-reading is more like the "SWAG" method: systematic wild-ass guessing. (This is an improved version of the WAG method. Scientists call this the empirical method, which is a fancy way of saying trial and error.)

Basic Ice-Reading for Skips

Fundamentally, ice-reading is based on repeated observation. As Yogi Berra said, "you can observe a lot just by watching." For each shot, observe where the shot winds up compared to where the shooter came out. (The shooter may or may not have come out on the broom.) Assuming that the shooter had a clean release—the rock was not "flipped" outside or "started" inside—the final resting position of the stone compared to where the shooter came out is the curl on that portion of the ice. This will be close enough of an approximation for stones that are between a close guard to back 12 weight. For example, if the broom was on the edge of the 8 foot—and the shooter hit the broom—and the stone wound up splitting the centerline on a draw or tight guard, the curl on this path and turn is 4 feet. On level ice, you can anticipate that if you need to land on the side of the button (one foot further out), you will need to move the broom to the middle of the 12-foot (one foot over) to make the shot. It is good technique to put the broom on the tee-line to give a target for each shot—you have a ready-made ruler in the rings along the tee-line to help you precisely place the broom for every draw shot. At least as a starting point, you can assume that the left side of the sheet will behave like the right side of the sheet, but you will normally find that is rarely true, especially on "edge" sheets, where the wall side is often straighter curling away from the wall.

Your first task as a skip is to find the path to the pin for draws from both sides of the ice early in the game. This is most conveniently done with your lead stones (when without hammer) or by observing your opponent's lead stones (if you have hammer.) Remember to make your comparisons from where the shooter came out, and not necessarily where the broom was placed. (Believe it or not, players do not always hit the broom on every shot.) You can also evaluate in the first end the amount of inside-out curl (from the centerline toward the edge of the sheet) on wing shots and corner guards.

Developing a mental map of the ice

Of course, ice is not completely level. There may be some ridges and gullies in the ice that will affect overall curl. You will notice these when rocks do not curl as expected. You may find that rocks curl 4 feet from the edge of the 8-foot to the centerline on the out-turn side, but only curl 3 feet from the edge of the 12-foot toward the centerline. This could be because (1) there is a small ridge just outside the 8-foot, or (2) the ice is significantly slower and frostier outside the 8-foot, or (3) there is a fall to the edge of the sheet outside the 8-foot.

You may also notice asymmetric curl. That is, the curl may be 5-feet toward the centerline one side of the sheet, and only 3-feet toward the centerline other side of the sheet. This is a clue that the sheet is slightly tilted. You can bet that the side that is curly toward the centerline is surely straighter than expected away from the centerline! And *vice versa* for the other side of the sheet. Adjust accordingly.

As the game is played, skips must keep track of the amount of curl for draw shots on each zone of the ice for both turns. A simple way to do this is to keep track of 2-foot zones for each turn, e.g., both in-turn and out-turn draws toward the centerline from the edge of the 4-foot, 8-foot, and 12-foot; and both in-turn and out-turn draws away from the centerline from the centerline, edge of 4-foot, and edge of 8-foot. That's 12 different zones in all. Anomalies in curl between zones will suggest regions of the ice that are tilted, have ridges, or gullies.

A common ice anomaly is a ridge or gully along the centerline. This kind of situation derives in part from the compaction of the ice between the 4-foot lines where most of the play on the sheet is concentrated. You will notice centerline issues when rocks hesitate to cross the centerline on draws or hits: but when they do cross, stones "take off" and curl hard. This can make broom placement and sweep calls challenging near the centerline. Rocks can often be thrown close to the centerline and sweep to keep them from climbing across the ridge or gully side, then allowed at an opportune moment to "break out" and curl hard toward the target spot on the ice. It is not uncommon to discover similar ridges or gullies on other parts of the ice.

Another common ice anomaly is a crowned sheet. Rocks will curl significantly more inside-out than outside-in. This condition is almost normal on club ice, and is why outside-in takeouts usually run straighter than inside-out takeouts. (On level ice, the curl each way would be expected to be the same.)

Finding the break point

In addition to monitoring the amount of curl, a successful skip must also know WHEN rocks start to curl. On draw shots toward the centerline, rocks typically curl very little until near the end of their travel, when they will typically start to break prominently back toward the centerline. This is especially true for aggressively textured stones. From the skip's point of view, draws toward the center appear to drift slowly outward, pause, then turn back toward the center. The turn back toward the center is the "break point." The optimal time to sweep a stone to navigate a guard is prior to the break point. After the break point, it usually is too late to hold the line. For draw shots, the break point is quite predictable. Learn the break point and time your sweeps before the break point to straighten stones to get around guards. Takeouts also have a break point for various weights. Observant skips will note the break points for typical takeout weights and sweep prior to the break points to get accurate hit and roll shots. Recognizing and using the break points is something that becomes instinctive with practice, but may require more analytical thought when first learned.

Use your opponents

There is no rule that says you can't crib from your opponent's shots. By observing both your stones and those of your opponents, you can learn the ice twice as fast. Position yourself behind the opposition skip when the other team is shooting and watch their stones. Of course, all the usual caveats apply: you cannot learn much about curl if the shooter had a poor release or an inside-out slide.

Ice changes during the game

A wise skip at our club once remarked, "A good skip keeps moving the broom wider and wider as the game progresses; a bad skip keeps putting the broom in the same place hoping for a better result." Ice conditions change significantly during play. In the early ends, when the ice is slower, stones will have to be thrown harder and will come to a stop quicker. The result is a straighter path than on faster ice. As

play develops and all parts of the sheet become used, the ice speeds up considerably, and curl increases as well. Toward the end of the game, when the pebble in the center of the sheet is beaten down, and other players leave the ice, the ice may become slower again and curl may decrease. A good skip will keep adjusting his or her estimate of curl in each zone of the ice as the game progresses.

Where to start?

Of course to employ the SWAG method, you must first have some sort of initial guess about where to place the broom so you can start refining your model of the ice. Where to start? You can use game experience at a rink to estimate a starting point. If you know that stones normally curl about 4 feet outside-in and 5 feet inside out in the middle of the game when the ice is up to full speed, then you might start by knocking off a foot or a foot-and-a-half in the first end when the ice is slower. Be prepared to move the broom out a little bit at a time as the end progresses as the ice speeds up! Allow room to get around guards. If you need to navigate a guard that is just touching the centerline, you will need at least one extra stone (about 1 foot) of ice to navigate around the edge of a guard that is sticking out 1 foot away from the centerline. As the game goes on and the ice speeds up, you may have to set the broom wider and wider to make the same shot.

What about takeouts? For board to firmer weight hits, start with a half-stone of ice off the edge of the rock for outside-in nose hits and adjust from there. For inside-out hits, you may have to allow for slightly more ice (maybe double or more), especially if you know that inside-out draws curl more than outside-in draws (which is typical). For hack weight hits, you can start with $\frac{1}{3}$ to $\frac{1}{2}$ of the draw weight ice. Up-weight shots are much more sensitive to imperfections in the ice than draw shots. You may discover regions of the ice where you must take negative ice (where stones fall toward the edge of the sheet) or have to reduce your weight to make takeouts. You will have to compartmentalize takeout curl (for at least two different weights) in various zones just like draws. On some spots of the ice, you might be taking a stone of ice, edge of rock, middle rock, or negative ice to make a nose hit. If you want a hit and roll to one side or the other instead of a nose hit, take a half a stone of ice one way or the other.

Ice-Reading Isn't Just for Skips

The front end doesn't get off the hook for ice-reading. While the front end is not in the best position to evaluate curl, they are well-suited to monitor ice speed. This is most effective if the front end is using stopwatches to take interval times. (The most common interval time is back line to hog line.) By timing each and every shot, the front end can learn the appropriate interval time down each path of the ice to make it to tee line. Corrections can be made for rocks not thrown to tee-line: 0.1 seconds in a back-line to hogline interval time is equivalent to 6 feet of distance. So a tight guard thrown just short of the rings with a split time of 3.80 seconds means that path is approximately 3.70 seconds to tee-line with a similar amount of sweeping. Likewise, a 3.50 split time that lands on the back 12 is approximately a 3.60 split time to tee line on that path. For players that understand and can throw interval times on demand, knowing the appropriate split time to tee line down a particular path is a significant advantage in making critical draws. It is possible to use split times for your opponents' stones as well as your own. Of course, the usual caveats apply. Split times are not comparable for players with very different releases. Those with a "soft" release will have their stones run slower than those with a "positive" release. For this reason, it is often advisable to use split times for only those players whose release you trust, or for those with a consistent release for which you know the appropriate correction. (One team I curl for has three different releases: A 3.70 tee line split for me would be 3.60 for one teammate and 3.80 for another on the same path.) A good front end will know the ice speed down almost every path of the sheet after the first few ends of play, and will adjust their estimates end to end as ice conditions change, sometime even during a single end of play as shots are repeatedly made down the same path.

Practice, practice, practice

Ice reading is a skill that gets better with practice. It helps to have a good memory, and an organized plan to remember what you have seen during the game. If you remember nothing else, remember that the ice changes during play, and adjust as necessary. Don't be the bad skip who keeps placing the broom in the same spot end after end, hoping for a different result: that's the definition of insanity. (And skips have enough reasons to go insane already!)

Good curling! Have a question for Instructor's Corner?

Have a suggestion for an Instructor's Corner article?

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