

Instructor's Corner

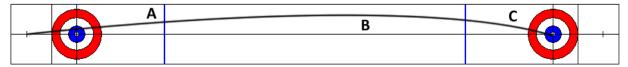
Roger Rowlett & Mary Jane Walsh USCA Level II Certified Instructors

Why is my skip so picky about when I sweep a rock during draw shots? What does it mean to "finish" a rock? Why is my skip always "light"?

—F. Ron Tender

This article is all about sweeping, one of the most amusing and misunderstood, but certainly among the most important aspects of curling. Even new curlers know that sweeping makes stones travel farther and straighter. On draw shots and light-weight come-arounds knowing *when* to sweep is perhaps as important as knowing *how much* to sweep. Sweeping at just the right time during shot can make a shot, and sweeping at the wrong time can cause a critical miss.

The path of a properly conditioned curling rock during a draw shot to the pin is shown in the figure below:



Note that the curl path is distinctly asymmetrical. When the rock is first released ("A") it curls very little, perhaps as much as half-way down the sheet. From the skip's point of view, the stone will appear to be moving outward toward the edge of the sheet during this phase of the shot. As the stone slows and the rotation comes off, the stone starts to move back toward the center of the sheet ("B"). This is the "break point." As the rock slows further and rotation decreases, the curvature of the path increases ("C") and the stone is "moving sideways."

Sweeping has significantly different effects on a shot, depending on when the stone is swept. Before the break point ("A"), and especially soon after release, sweeping has minimal effect on the overall amount of curl of the shot. Before the break point, the stone is more or less traveling in a straight line, and sweeping will mostly extend the distance of the shot, and delay the break point ("B") only slightly. This is the best time to sweep a really light rock to get additional distance without having a large effect on total curl. Sweeping near the break point "B" will have the largest effect on total curl of the shot, as it will delay the point at which the stone will start to turn back toward the center line. Just prior to the break point is the optimum time to sweep to keep the rock straight enough to get by a guard without adding too much extra distance to the shot. Once the stone has made the turn back toward the center line ("C"), sweeping will not be able to "straighten" the rock path, but will only take it farther in the direction of the centerline. If a rock is over-curling, sweeping at point "C" will only take it still farther away from the desired spot and closer to the center line. On the other hand, if a stone is under-curling, sweeping at "C" will extend the travel of the rock back toward the centerline and keep it moving in that sideways direction. This is called "finish", and sweeping at point "C" is called "finishing the rock."

An experienced pair of sweepers will sweep light rocks early, right after release ("A"), to get a some extra distance (if needed), then pause at the break point ("B") to let the rock make the turn, then sweep again at "C" to get the final distance and good "finish" and bury behind guards. Inexperienced sweepers may wait until the rocks slow down before realizing that sweeping is required, and more often than not wind up pounding the ice near the break point ("B"). While the inexperienced sweepers can sweep the

rock the proper distance, the result will be a much-delayed break and loss of overall curl. On a draw around a guard, this is the difference between being buried or out in the open; for a come-around tap-back, it's the difference between a solid tap behind the guard or rolling into the open or even missing the target stone altogether. Inexperienced skips will sweep furiously after the break ("C") to get around a guard, but alas, this is often too late as the rock is already barreling sideways. Experienced skips anticipate the break point ("B") and delay the break back toward the guard that must be negotiated.

The prior discussion presumes fast, fairly level ice with reasonable draw. On ice with a significant fall to the outside, such as an edge sheet or perhaps at other clubs, any sweeping in the "fall zone" will cause stone to drift to the outside, especially prior to the break point ("B"). Under these conditions, even sweeping soon after release ("A") can dangerously affect the total curl of the rock, and must be done judiciously. Playing draws on falling ice puts much more pressure on the shooter to throw accurate weight, because the sweepers may only be able to sweep after the break point to prevent the rock from falling out. Of course, an option is to call tight ice and use the fall to sweep the stone "out" to the desired trajectory prior to the break point, but this is far easier said than done.

So how much should a well-thrown rock be swept? Probably more than you think. "If you want it on the four-foot, throw it to the four-foot" is an oft-heard adage around club curlers, but is probably not a good strategy to make a high percentage of draws when you have able sweepers. It's just too hard to throw a stone consistently on changing ice conditions within a 1-2 foot window of error. Maybe that's what they did in the Brier when frosty, 18-second ice ruled, but with good rocks on fast ice a strong pair of sweepers should be able to carry a rock an extra 10 feet or more if necessary. While the shooters get the glory, the sweepers actually make the shots and are in the best position to precisely place rocks exactly where they need to be. A well-thrown rock should probably be swept 50% or more of its length down the ice. If the shooter can throw a rock within +0 and -10 feet of the target, the sweepers should be able to make the shot work. "Light" can be fixed by sweeping; there is no solution for "heavy." So if you have wondered why your skip is always light, it's because they are conditioned to be in that +0 to -10 foot window. On the other hand, if you sweep a rock more than about 80% of its travel, you will probably be unable to avoid altering the intended path, because you are almost certainly going to be sweeping through the break point ("B"). That's probably when the sweepers and the skip or vice-skip are going to have to negotiate a "plan B" shot.

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