



## Instructor's Corner

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***Why do some players use stopwatches on the ice? What good are they?***

—Mark N. Thyme

**My front end is chained to their stopwatches on draw shots. I want to break them. (The watches, not the front end). Any advice?**

--Skip Snoyd

Timing in curling is a topic that is guaranteed to start an argument...I mean spirited discussion. Curling purists think that stopwatches have no place in curling, and detract from the game. Others think that stopwatches are an excellent learning tool, and regard timing as an essential skill for competitive curling. Like most tools, a curling stopwatch can be effectively used or roundly abused.

### Timing Curling Shots

There are three principal ways of timing curling stones: *Sheet timing or long timing*; *hog-to-hog timing*; and *interval timing or split timing*. Each method of timing has specific strengths and applications.

*Sheet times* are typically collected by measuring the time it takes a stone to travel from the hog line at the release end to stop at tee line at the far end. The "faster" (slicker) the ice is the longer the sheet time. This is counter-intuitive for most new curlers, but it makes sense if you think about it. "Fast", slick ice has little friction and it takes much longer for the rock to come to a stop. "Slow", sticky ice causes rocks to grind to halt relatively quickly. "Fast" ice is 24-25 seconds; "Slow" ice is maybe 18 seconds. At the Utica Curling Club, we normally have fast ice most nights, although the first end or two the ice is typically slower, maybe 22 seconds or so until the pebble starts to wear down and the frost starts to dissipate. To obtain a sheet time, start your stopwatch on a draw shot when the stone crosses the delivery hog line, and stop it when the stone comes to rest at the other end. If the stone is near tee-line when it comes to rest, that's the sheet time. If it's a little short or long, add ½ second for every 6 feet it is short, or subtract ½ second for every 6 feet it is long. So, for example, add ½ second for a rock landing top 12 or tight guard, or add 1 second for a mid-way guard, etc. Sheet times are good for getting an idea of the general speed of the ice and how it changes during the game. A major advantage of sheet timing, unlike interval timing, is that it is independent of delivery mechanics. It is also relatively easy for skips to get reasonable sheet times when timing from the far house. You don't have to be that accurate in clicking the watch, because sheet time differences less than ½ second are not really significant. Sheet timing is an excellent way for skips to keep track of general ice speed conditions throughout the game, and does not cause much distraction during your own or your opponents shots. Knowing the general sheet time can give a shooter a good idea of the weight necessary for making a draw shot or delicate tap-back.

*Hog-to-hog* times are collected by measuring the time it takes a stone to travel from the near to the far hog line. This method can be used to time draws much like sheet timing. "Fast" ice is 14-14 ½ seconds by this method. However, a really good way to use hog-to-hog times is to learn a variety of takeout weights during practice. (This was described in a previous *Instructors Corner* article.) A "firm" takeout is maybe 9 seconds, "bumper" weight is maybe 10 seconds, and "hack" is 11 seconds hog-to-hog. At least that's the way it works on our mixed team. You can make up your own numbers and name the weights whatever

you like. It doesn't really matter what you call your takeout weights as long as everyone understands what they mean for hog-to-hog times and can throw that weight consistently. (Some competitive teams call takeout weights by hog-to-hog numbers. If you watch curling on TV you will hear this fairly often, as in "Give me a 9 ½.")

### **Interval timing**

*Interval, or split timing*, is the one timing method that can be used to give information about whether or not, and how much a thrown rock must be swept to make a shot. The most common method of obtaining interval times is to start the watch when the stone crosses the back line, and stop it when it crosses the near hogline. This is called the "backline-to-hog" time. The *shorter* this time is, the *faster* the shooter has launched out of the hack, and the *farther* the stone will go. Again, this is counter-intuitive for novice curlers, but makes sense if you think about it: *shorter* split times are *faster, longer* rocks. On typical ice, a split time difference of 0.1 seconds is approximately equal to 6 feet of travel. That is, for example a stone thrown with a 3.80 interval time will travel about 6 feet farther than a stone thrown with a 3.90 interval time. There is some correspondence between interval times and sheet times, but this varies somewhat with ice conditions, shooter delivery mechanics, and stone condition. However, at the Utica Curling Club, 24-25 second ice will require an interval time of approximately 3.80-3.90 seconds for a draw to land at tee line with little or no sweeping. You can expect a minimum error of  $\pm 0.05$  seconds in measured interval times due to the vagaries of human neurophysiology. (It is impossible to react and click a watch more accurately than 50 milliseconds or so.) An alternative interval time that some teams use is tee line-to-hog instead of backline-to-hog. Tee-to-hog times are about ½ second shorter than backline-to-hog times. We don't recommend them: tee-to-hog times are so short that timing errors are a much larger fraction of the measured time.

### **Using interval times to improve shot-making**

Teams that use interval timing effectively can make very confident and accurate shots. For example, let's assume that the skip has to draw the four-foot with the last rock of the end to score, and the sweepers know that the required interval time to draw to tee line is 3.80 seconds. If the shooter is comfortable "throwing split times" (something you can practice), then the sweepers can inform the shooter of the target time for the shot. During the shot, the sweepers will collect the actual split time and compare it to the target number (3.80 seconds in this case). If the shooter throws a 3.70 second split, then "Whoa, Nelly," you are not going to have to be in a hurry to sweep, and the rock is likely to be long. If the shooter throws a 3.90, then the sweepers would be well-advised to start sweeping right away to make up for a possible 6-foot shortfall. Finally, if the shooter hit the target, 3.80 seconds, you are likely to be very close to making the shot, and are certainly in no urgency to start sweeping right away. To use split times effectively as a sweeper, you need to know the "target" number before the shot, then quickly determine if the actual shot is too slow (longer time) or too fast (shorter time). No mental gymnastics—it's not possible to sweep and do long addition or subtraction at the same time. Just react to "too fast" or "too slow", or maybe "just right." Jump stones that are above the target time, and watch and wait for any other result. (It also doesn't hurt to communicate the results to your skip— heavy, light, or close)

### **When stopwatches go wrong**

If you have ever heard your skip muttering, "I'm going to break the &@\*\*^!! stopwatches!" it is quite likely the result of one or more the following interval timing issues.

*Knowing the right number.* The "number" to make a shot is always a guess. The reliability of the estimated split time is best when you or your opponent has just thrown the same shot down the same

path. You should not expect that the appropriate interval time is the same down every path on the sheet. Down a well-worn path, the sheet may be very fast, while even 6 inches away from that path, on more virgin ice, it may be considerably slower. Always regard the “number” as a guess, not a certainty. As each shot is played (and timed) you will learn something new about some portion of the ice and how it is changing.

*Interval times are highly dependent on delivery mechanics and release.* Be very wary about comparing interval times between different players on your team and your opponent’s team. Players that have a “positive release” with considerable extension will have split times that run “fast”, while players with a “soft” release with little or no extension will have split times that run “slow.” Expecting a 3.80 split from players with radically different releases to run the same distance is futile. On teams that play together frequently, the front end can often make the appropriate correction factors for each player. Players with unusual deliveries, or those that push the stone, are simply un-timeable.

*One interval time is enough. Be ready to sweep.* It is really not necessary for both sweepers to time. In the best-case scenario, you will agree with each other, meaning one of those times is redundant. In the worst-case scenario, you will disagree by 0.1 second or more, and may be paralyzed trying to figure out who is right while the shot is missed. It is a good idea for each pair of sweepers to assign a “timer” and a “pouncer.” The “timer” is responsible for getting the interval time. The “pouncer” is responsible for getting right to it if the stone looks light or if the “timer” senses the stone may time too slowly. This way there is minimal delay in sweeping rocks that clearly need it. Don’t be the “Keystone Kops” front end that is fumbling with watches and brooms and can’t get the brooms down until 10 feet past the hogline. Hold your broom with one hand under the correct arm in a sweeping-ready position (broom head down) while timing with the other hand. You should be able to hold both the broom and watch in such a way that if you drop the watch your watch hand can immediately grab the broom and start sweeping. If you find this clumsy, consider using a “Rockwatcher” that attaches to the broom handle. Then your timing hand never has to leave the broom. In any case, if the skip or vice-skip is calling for sweep immediately upon release, it’s for line and it has to be done NOW. Drop the watches and start sweeping. The interval time won’t matter if you crash the guard. Same reasoning applies if you think the stone is really, really light. Start sweeping RIGHT NOW. Getting that accurate 4.20 second split time will not be very helpful if you come up short of salvaging that guard because you were timing instead of sweeping.

*Interval times are not gospel.* Interval timing does not relieve you of the necessity to judge the weight of the stone. Remember, the interval time is always an educated guess. The main purpose of interval timing is to determine if you need to sweep *right now*, or should *watch and wait*. Interval timing will also allow you to give the skip or vice-skip a good estimate of the distance of the shot compared to what was called. One the stone has traveled more than 1/3 of the way down the sheet, you are back on your own, Mark II eyeballs. Flush the watch from your mind at this point. Don’t be the front-ender that says (as the rock pulls up 6 feet short, never swept until the very end): “But the watch said 3.80. It should have been on the tee line.” Watch and react throughout the shot until it is done. Remember (I think this may have been mentioned in a previous *Instructor’s Corner* article), more rocks are lost to under-sweeping than over-sweeping. Just watch a few ends of any league night. The undersweeps will outnumber the oversweeps by at least 10:1.

### **Interval timing as a learning tool**

Stopwatches on the ice are like calculators in a math class. They can assist learning and understanding, or they can be an excuse to stop thinking. Go with the former. Interval timing is a great way to train your eye for what various weights look like. Interval timing can also help you learn the ice and how it changes

during the game. This knowledge can really help your team-mates make better shots. Contrary to popular belief, ice-reading is not just for skips. Good front ends use interval times to keep track of and remember ice speeds on different parts of the sheet, and can use that to develop good guesses for “target” numbers for called shots. Get a stopwatch and give it a try. You may find that timing will help you develop your weight judgment more quickly than you thought possible.

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