

Timing Is Everything!!

... or is it? 

First, let's get some basic physics out of the way (as I barely squeaked thru physics 101 at university, this will be short and sweet). If a stone requires significant force to travel to a designated spot, the ice is considered "slow or heavy". If less force is needed to reach the same spot, the ice is described as "fast/quick or keen".

Measuring the speed (or more correctly the velocity) necessary for the rock to achieve it's desired outcome (guard, draw, takeout, etc.) more commonly known as "weight" in curling vernacular, requires first and foremost a keen eye and good judgment but can also be substantiated with empirical evidence (while your chewing on that, let me explain).

Timing systems have been in vogue for several years in the curling world and provides a metric that in the best case scenario supports the curler's weight assessment at any given point in time. The playing surface that you're sliding on will vary throughout the course of the game, so expect things to change after a few rocks have been thrown i.e. first end interval/split times in a given path will vary in the middle and late ends. Generally speaking (*please do not take this as gospel*), the early ends will be heavier, then will keen up somewhat in the middle ends, and as the pebble flattens, the ice will slow down once again. Keep in mind that as frost builds up, it will also affect the speed and path of the rock.

Notably, two timing systems have gained favour over the years:.

- **Hog line to Hog line** (*interval timing*)
- **Back line to (near) Hog line** (*split times*)

In both instances, the time begins when the leading edge of the stone reaches the closer line and the time ends when the leading edge reaches the farther line. A basic understanding of index and thumb kinematics and performance (sounds impressive doesn't it) recommends using your index finger on the start/stop button, the thumb being less accurate.

Which one to use??? Why not both!

Back line to Hog line "split times" has some issues which I will discuss forthwith, nevertheless it does provide the sweepers with a fairly quick measure of how fast the stone is travelling. This method of timing however is susceptible to differences in the thrower's release mechanics ie. (1) 'pushing' or pulling back' on a stone right before release; (2) amount of rotation applied to the handle, both of which may surprise or confuse the person timing the rock leading to erroneous estimates of how far the rock will travel. As well, given the shorter distance, there is apt to be slight errors (+/- 0.1 to 0.2 s) when starting/stopping the chronometer leading to further miscalculations on 'weight'.

Points to consider with this system:

- How consistent is the delivery/release of the person in the hack?
- How accurately are you when starting/stopping the watch?

Hog line to Hog line interval timing tends to provide a more accurate measure of travel distance as the rock is no longer subject to digital manipulation on release from the person throwing it. As well, given the longer distance, the timing will be less prone to inaccuracies related to start/stop index finger reaction times. This measurement while not being of much use for the sweepers or skip while the rock is initially in motion will provide a fairly good estimate of how the ice/pebble are behaving and the weight required for subsequent deliveries. As the brushers may be otherwise occupied, the skip may be in a better position to obtain this chronometric. This method can also be used with stick curlers.

Now this is where some basic math comes into play (another field in which I was less than stellar).

For **back-hog** line split times, $1/10^{\text{th}}$ of a second is equal to about six feet of travel distance. For instance, if a tight guard is running around 3.8 seconds, in order to throw tee line weight (roughly 6 ft deeper) subtracting 0.1 seconds would mean a split time of 3.7 seconds is required.

Similarly, for **hog-hog line** interval timing, approx. 0.5 seconds equals about 6 feet e.g. if the rock thrown to the back line requires 14 seconds, then tee line draw would be about 14.5 seconds. If this sounds complicated, try doing some vector calculus!

Using a stop watch exclusively to assess rock travel is a bit of a slippery slope (pardon the pun). Paying attention to what the thrower is doing as he/she slides forward and releases the rock will provide you with a great deal of information that you will fail to benefit from if your eyes are riveted to the watch face. Sharing these tasks with your co-brusher (unless they arrive at 7 pm for a 5 pm game!) will enable you to simultaneously obtain the split/interval time and any insight regarding the release mechanics.

Keep in mind that you are not limited to your own team's performance metrics. Timing your opponents rocks may prove beneficial as well.

Remember, your stopwatch won't throw rocks for you, all it will do is give you an idea of how hard one should throw based on ice conditions.

Finally don't let timing rocks consume you during a game. It's only a tool and you shouldn't be concerned if you miss timing a few rocks or if some of the times you get don't make sense. If you simply can't get times that make sense during a game then put the watch away.

From the warm side of the glass..... Denis Faubert