



(a subsidiary of TRUE NORTH CURLING INC.)

PRESENTS THE COACHING SERIES...

“A PANE IN THE GLASS”

Delivering the Curling Stone 101

by Bill Tschirhart

No single technical change has so captured the imagination of the curling world than the *no back swing delivery* (which for the purpose of the remainder of this article shall be dubbed the "no bs delivery" [enough with the snickering]). It's now the industry standard. When I instruct at summer camps, in clinics etc. and say "backswing" to the young athletes, they think I'm talking golf!

There have been video-tapes made about this style of delivery and certainly it is an integral part of the curriculum in virtually every nation's instructional programme. So why spend more time on this topic? It's what **hasn't** been said about the no bs delivery that concerns me so indulge me and let me get this off my chest. As those who know my words best would expect, first some history. Two events occurred in quick succession that gave rise to the no bs delivery.

First, ice technicians were provided with the equipment and expertise to make ice that was relatively faster and more consistent than ever before. Second, juniors used their creativity and intellect to come up with a delivery that was the perfect complement to the "new and improved" ice surface. Many of these juniors had come through the "little rocks" programme at their local curling facility. Most of the instructors cautioned the burgeoning curlers to keep the little rock on the ice at all times (more to protect the ice area around the hack I suspect) but it worked for a variety of reasons. It did keep the ice chips around the hacks to a minimum and it was safer. But most importantly, it made the actual delivery much less complicated than the much beloved *back swing delivery*.

It was the simplicity of the no bs delivery that encouraged those neophyte little rockers to stick with it when strength and experience gave them license to enter the world of full size granite curling

stones. It seemed logical to them that if at the point of release the athlete should be more or less behind the stone anyway, why not position the stone in front of the body right in the hack? It was a great idea but could one summon enough leg drive to propel that amount of granite at take out velocity? Aye, there's the rub! The answer, through participant observation was a resounding "yes"! But how to accomplish the task was the issue!

So, we've touched upon the first pillar of the no bs delivery. Position the stone so that it is *close to a spot in front of the hack in which the athlete's hack foot resides*. Some coaches and instructors get very precise with this, demanding that all the athletes on the team place the stone so that it is directly in front of a particular toe of the hack foot. Once done, it means that the athlete, the stone and the target brush are on the same line (the line of delivery).

It is my observation that in reality, most curlers position the stone so that the middle of the stone is opposite the inside edge of the hack. In fact, when I record a delivery, that's where I place the stone. I then aim my laser beam at the center of stone on the striking band. I do that because regardless of the position the athlete places the stone for his/her version of the no bs delivery, my laser will still strike the stone at some point, perhaps on the middle, but somewhere.

Since we're only attached to the stone in one way and that's with our hand, the basic grip has four components: *a) the second finger pads should be on the bottom of the handle b) the side of the thumb should be on the side of the handle c) fingers should be together and d) the wrist should be high so that the fingers are approximately ninety degrees to the handle*. This should position the hand so that the axis of rotation of the wrist is superimposed on the axis of rotation of the stone (directly above the bolt of the stone). Lastly, the gooseneck of the handle should be positioned so that it is at 10 o'clock for the clockwise rotation and 2 o'clock for the counter clockwise rotation so that the stone can be released with the gooseneck at the 12 o'clock position.

Before I leave the grip, I want to make one strong point. Don't be fooled by the elite athletes you see on TV. Their grip might not look like the one I've just described. It's that way for two reasons. The vast majority of those athletes, likely as juniors, did learn the basic grip and that leads to the second point. For a variety of reasons, not the least of which is a vast amount of skill, they have customized that basic grip to meet very specific needs that only an elite athlete can appreciate. Oh yes, when asked by curlers about wearing a glove on the delivery hand, I refer them to the number of curlers they see on TV who do so. Enough said!

Place the ball of the hack foot on the sloped portion of the hack and the entire sole of the sliding foot in contact with the ice surface so that the weight of the body is more or less equally distributed on both feet. The heel of the sliding foot will be approximately beside the toe of the hack foot. Now the kicker! There should be a space between the feet (about the width of the handle of a curling brush). Stay tuned for the reason.

Now let's look at the sliding device. If you're using a brush as your sliding device, it should be positioned so that the handle rests just above the hip with your hand on top of the handle about 2/3 of the way from the end of the brush handle and the head opposite the stone (throughout the entire delivery). That last part rolls off the lips of instructors and the keys of this computer very easily but it's extremely important and deserves attention. So many curlers hold the brush properly in the hack but by the time the stone is at the critical release point, the head of the brush is now well behind the position of the stone. A good test in practice is to become aware of your peripheral field of vision. If at the point of release, the head of the brush is not in your peripheral vision as you focus on the target, then you might wish to address this issue because when the brush head is not in your peripheral vision, it is going to have an effect (and not a good one) on the position of your body. Essentially, when the brush is not opposite the stone, the body (as noted by the shoulders) is twisted and no longer square to the target. Not good!!! Now that we have the hack position issue settled let's get that stone moving.

Some athletes will first move the stone forward slightly. This is the time-honoured "forward press". It's clearly a preliminary movement much like the "wind up motion" that a baseball pitcher will employ prior to drawing the ball back. Dr. Al Reed formerly of the University of Ottawa explains this press motion is a "trigger mechanism" to the delivery of the stone. It is my experience that modern curlers are about evenly divided on this press thing. To date more and more athletes are dispensing with the press since the drawing of the stone back toward the hack accomplishes the same goal (that of breaking the friction that exists between the ice and a stationary stone). For my part, when working with athletes I leave it entirely up to them. If they use it fine. If they don't, well, that's fine too!

Let's get one thing clear about the entire motion of the stone. Remember, the whole idea behind the no bs delivery is to keep the stone "on the line of delivery". All the motions of the stone, both forward and back must be in a straight line! It may be a three stage event (press, back and forward) or a two stage process (back and forward). Whatever you choose, keep the stone on the line of delivery.

When we noticed so many athletes using this "new" delivery it was assumed that athletes would be able to draw the stone back and forward on the same line with relative ease. We were wrong! We

noticed that many athletes were drawing the stone back on the line of delivery but there was a noticeable "bulge" as the stone began its forward motion. Usually this action was small and quick and by the time the athlete was in the slide (what we call "bottoming out") the stone was back on line once again. For my part, I would point it out, or better, the athlete would notice it on a visually-recorded delivery but when questioned about it, I would give it a cursory comment and leave it at that. I left it up to the athlete to make the adjustment. If an adjustment was deemed necessary by the athlete, I suggested that the "bulge" existed because the athlete was moving his/her body over the top of the stone. The downward pressure of the body on the stone caused the bulge. The remedy involved making sure that the stone is kept in front of the body. My mantra suggested to them was, "Follow the stone!"

Remember that sliding foot? As the stone moves back toward the hack foot, the sliding foot will move backward as well and if you employed that "silly little space" between the sliding foot and hack foot, you will be able to move the sliding foot backward in a straight line. A very good thing!!! Many curlers position the sliding foot in front of the hack foot. When they move the sliding foot backward it must move around the hack foot, usually to a position behind the hack foot. When the forward movement begins, the sliding foot now must move around the hack foot once again. The expectation of the athlete is to now slide straight but the part of the body upon which the athlete is about to attempt that straight slide is following a curved path. Need I say more?

Maintaining the space between sliding foot and hack foot is the best way to accomplish the straight movement of the sliding foot but not the only way. Some very good curlers set up as in the previous paragraph and move the sliding foot in that "C curve" motion but when the sliding foot comes forward around the hack foot, there is a distinct, albeit short, pause. Then the sliding foot can move straight forward. Many of our elite athletes wrap the sliding foot around behind the hack foot then step over the ankle of the hack foot and place the sliding foot back onto the ice to begin the forward motion. From an overhead view, the sliding foot does move straight but part of its journey is off the ice.

Of the three methods of moving the sliding foot straight, I strongly recommend the first. The second is OK and the third requires much practice. It's your choice!

We have been referring to the backward movement of the sliding foot but we're really talking about the movement of another body part, the hips. The area around the hips is where the center of the body's weight is housed. That's important to remember!

From that "draw back" position, the stone is moved forward and the sliding foot is moved into such a position so that you can slide in a straight line with the stone to the release point where it is released with a positive rotation toward the skip's brush.

Permit me a coaching point. Clearly, as the athlete enters the slide portion of the delivery, as instructors and coaches we have the driving urge to add the phrase, "Move your sliding foot to a position under the mid-line of the body (i.e. below the sternum)." That's correct, but I don't do that anymore and here's the reason why. When I "say", "Move your sliding foot to a position under the mid-line of the body" most athletes hearing that add an adverb phrase ... "as quickly as you can". And when you move the sliding foot laterally as quickly as you can, it has a tendency to maintain that path resulting in a drift, the bane of so many recreational curlers. By not saying anything the sliding foot moves to that mid-line position gradually, with a straight slide the result. It's a natural movement for the body so that the athlete does not fall down. Remove that phrase from your coaching instructional admonitions and see what happens!

Now that the athlete has entered the slide portion of the delivery, ***the weight of his/her body should be evenly distributed on the slider***. I say this more often in clinics than any other phrase. It's key to eliminating the dreaded "drift" that plagues so many recreational curlers. When the weight of the body is evenly distributed on the slider, it's virtually impossible to drift. There are some other spinoff benefits as well but this is the big one!

Now, about that rub to which I referred earlier and this is where the vaulted no bs delivery's star in the curling heavens dims slightly but first, another history lesson.

For this we again need to return to the days of the back swing delivery. Even though this type of delivery is ancient history, it had some good aspects. There is nothing more natural in the physical world than a pendulum. It wasn't an accident that clocks ran accurately for centuries thanks to the reliability of the pendulum. In the back swing delivery, the delivery arm is nothing more than a pendulum with the stone being the weight on the end of the pendulum arm. Since the length of the arm does not change, the amount that the weight is drawn from its rest position determines how fast the weight moves (my gr. 11 physics teacher would be proud). When back swingers are asked how they change the momentum applied to the stone I often get the answer, "I drive harder out of the hack". That might be true but most likely the curler providing that response does so due to something else that gets changed and that's the length of the back swing. The extra drive from the hack simply allows the athlete to "follow the stone" (where have you heard that before?). Now, to be sure, some curlers with a back swing delivery do indeed control the

momentum of the stone strictly through leg drive (with the length of the back swing remaining constant) while still others use a combination of the two. It's imperative that every curler knows how he/she does it since *weight control is the most important skill in our game!*

To this point, you might wonder why the back swing delivery has largely been replaced. Well, that great attribute just described was more than offset by the fact that when a back swing curler assumes the hack position, the stone is positioned to the side of the athlete (close to the center line) to allow the stone to swing back on a straight line. When the stone swings forward, the curler has to move his/her entire body in behind the stone (not an easy feat). Essentially the body weight moves across the line of delivery and sometimes (much too often for the recreational curler) that body keeps moving in a lateral direction making the accurate delivery of the stone a real challenge to say the least! Now we're back to the no back swing delivery which removes that problem entirely. But, what to do about weight control without that pendulum?

This is the "meat and potatoes" of this essay and a question I get asked constantly. The answer appears simple, leg drive! But that's not a good answer as it is not entirely accurate from my perspective. Allow me to explain.

Since there is no back swing, there must be something else that must change. Let's, for the sake of argument say that it's strictly leg drive. We have some interesting empirical data on this matter.

My friend Dr. Gavin Reid conducted a study with John Morris, currently playing third for Kevin Martin and a two time world junior champion. The question examined was whether an elite athlete like John could drive out of the hack with the same force time after time. John was asked to place a very sophisticated insole device into his hack shoe. It measured the downward pressure on this foot. The data was then downloaded to a computer where the appropriate software displayed results for Dr. Reid. The conclusion was that John could not apply a force with his drive leg of equal magnitude in succession. Now, enter the amateur sleuth, yours truly, to say that I think Dr. Gavin's standards were high to be sure and that the employment of a fine tuning mechanism (i.e. delivery arm extension) plus the brushing affect of two competent brushers more than makes up for a deficiency in leg drive reliability. Nonetheless, it's something to think about. But let's return back to our weight problem.

If we recall the back swing delivery, the further the weight of the pendulum is drawn from its rest position, the faster it moves (swings). In the no bs delivery, we have something to make up for that "pendulum weight". It's the weight of the body (centered at the hips). If we move it back further, then like

the pendulum, we build up kinetic (potential) energy. In the back swing delivery, the release of that energy was easy as the stone's natural tendency was to return to its rest position but in the no bs delivery, we have to make it happen.

From this point on I'm going to use some terms that are now commonplace among instructors. That drawing back of the hips to a certain point is called the "park" position. When the athlete enters the full slide portion of the delivery, we call that "bottom out". The release is, tah dah, "release" (and don't forget "follow through" as the last step).

This is where I'm going to suggest that there is an important similarity (surprisingly enough) between the two types of deliveries. In the back swing delivery, especially if the athlete uses the length of the back swing as the primary mechanism for weight control, the stone describes an imaginary arc in the air. I suggest that in the no bs delivery, an imaginary arc is described as well but in the no bs delivery, the arc is described by the hips of the athlete. On other words, weight control with a no bs delivery is nothing more than a matter of time, the time taken from "park" to "bottom out".

As an example, let's assume that it takes one second for an athlete with a no bs delivery to go from park to bottom out. Assuming no fine-tuning mechanism, just a clean release the stone will travel a certain distance down the ice. On the next shot, again assuming that all the other parameters of line, release, rotation and no fine-tuning are constant, the time from park to bottom out is 1.5 seconds, the stone will not travel as far. Conversely if the aforementioned parameters are once again constant, but park to bottom out time is now 0.5 seconds, the stone will travel further than either of the first two. Try it with a stopwatch. Stand beside the athlete. When the hips start forward, start the watch. When the hack foot leaves the hack, stop the watch. With a no bs delivery, this park-to-bottom-out section is critical as it's the key to weight control. If you use more leg drive you are simply shortening the park-to-bottom-out time and if you employ less leg drive then you lengthen that time. Look, every curler MUST be able to articulate how he/she varies the weight of the stone. The curler who can't is on thin ice indeed!

That's fine as far as it goes but what about the central question? How do I shorten the park to bottom out time sufficiently to generate full take out weight. Here's the "new stuff"!

Think of a large pane of glass positioned at the hacks. When you're in the hack position, part of you is in front of the pane of glass and part of you is behind. When you raise your hips to shoulder height (don't let the shoulders rise) and draw them back to that "park" position (with the sliding foot coming along for support), you are essentially "loading the gun". The movement of the weight of your body

forward and down to the bottom out position is what really propels the stone forward. But, when you're behind the pane of glass, if you were to take the direction of most instructors and "push" you'll go BACKWARD since you are BEHIND the point where the pushing (hack) foot is located. No, the first motion forward is a PULLLING motion as you attempt to break that pane of glass. When you get the center of the weight of your body (hips) over the hack (i.e. breaking the glass), there is a transition from pull to PUSH. That transition is not a natural act for many curlers learning the no bs delivery, me included. Generating enough forward momentum then changing from pull to push and doing it seamlessly is no mean feat. Many curlers during initial attempts have a slight pause "at the glass" to be sure the weight of the body is in front of the hack so that push can begin. They literally waste the pull portion. As a result, they cannot summon enough force from the residual push to impart take out weight.

So, there's the key. Draw the hips back to "load the gun" (i.e. develop "kinetic or potential energy) then pull forward as hard as you can until the center of the body's weight moves slightly forward of the hack then push without pausing.

Thankfully, there is another source of power. It's the sliding foot. Essentially, if we get the sliding foot moving quickly, the whole body moves quickly. So, consider lifting the sliding foot from the surface of the ice to get it moving faster. Don't forget how important it is to move it forward as straight as possible. There was a time that we would have not suggested an athlete ever take the sliding foot from the ice surface but for take-out weight in the no bs delivery, it's all but essential to do so.

There are two more sources for power in the no bs delivery. You can release the stone earlier in the slide but the best way to add more power is to position your hack foot higher in the hack. It's like magic so give it a try!

Making the transition from pull to push is the aforementioned "rub" to which I initially referred. That's probably going to take some practice. Oh, practice, what a novel idea!

Enjoy working with your athletes. I'll see you soon behind a pane in the glass!