THE SETUP: THE IMPORTANCE OF THE SLIDE FOOT POSITION

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In curling, as in golf, the hallmark of an accomplished and successful player is consistency: simply the ability to execute repeatedly the act of throwing a curling stone correctly, that is on the line of delivery, with the correct weight, and with the appropriate rotation applied to the stone. While there are several factors that combine to create a successful curling shot – after all, every shot is a **team** shot – the characteristic skill of a curling athlete is the delivery and the consistent, successful player will deliver a stone in a similar fashion on each and every shot.

Throwing a curling stone consistently takes discipline, and in our experience as coaches it is discipline – or more precisely the lack of discipline – that differentiates the top teams from the rest of the field, particularly at the junior levels. In this article, we focus on the line of delivery (LOD), and the impact to the LOD of improper placement of the slide foot in the setup in the hack, a common fault that we see with young players.

In this article we are assisted by Evie Fortier of Ottawa, Ontario, one of the talented graduates of the Wilfrid Laurier University curling program. An OUA champion, Evie threw second stones on the WLU Varsity Women's curling team. To better illustrate the orientation of her lower body in the accompanying photographs, we've applied green painter's tape to the front of Evie's curling pants. We would like to thank Evie for taking the time out of her busy schedule as a WLU student-athlete to lend her support for this article.

LEG ORIENTATION IN A SQUAT POSITION

We will start with some photographs of Evie in a squat position. In this photograph at right, we see Evie in a full squat position with her feet a few inches apart, not unlike the distance between one's feet that one would have when in the hack during a delivery. Note the parallel lines; with her feet parallel to each other, Evie is comfortably balanced on the soles of her feet with both legs oriented directly at the camera.

In this next image at left, Evie is squatting with both feet together and flat on the ice surface. Here, while her legs are still pointing at the camera, with her feet together the green tape forms a 'V'. The shape of the 'V' will differ for every athlete due to their individual physiology, but the first important

point to make here is that a 'V' will form if the feet are closer together than the hips. The second point is to note the symmetry of the legs; as long as the athlete does not have an orthopedic issue, one should expect to see this leg arrangement when the athlete's feet are placed together.

Finally, in the image at right, Evie is in a full squat, with her feet shoulder-width apart. Evie is balanced on the balls of her feet, rather than with her feet flat on the ice. With her feet some distance apart, note that the green lines on her pants are again parallel and both legs are pointing straight ahead at the camera.

THE STANCE IN THE HACK

In the photograph at right, Evie is performing a squat with her feet almost together and parallel to each other. However, in this photograph Evie's left (slider) foot is flat on the ice, but with the other her heel is raised, simulating a stance in the hack. Note the asymmetry of Evie's leg position with this stance; indeed, Evie is having difficulty maintaining her balance in this pose. The issue is that in this position, with one heel raised and her feet together, Evie's hips have twisted, in this case to the right. Indeed, it is impossible to get into a squat position with one heel raised in this manner and maintain the alignment of both legs to point forward **if the feet are held in parallel**. I would urge junior coaches who discover their athletes using a hack position with their feet in parallel to try this exercise. It is remarkable how difficult it is to stay balanced in this position with one heel raised.

The implications of this stance when the athlete moves to the hack are clear:

- The upper portion of the hack leg is no longer pointing at the camera (i.e. the 'target') and, because the knee joint is one that only bends one way, any deviation of the hack leg from the intended line of delivery will need to be 'fixed' by the athlete through his or her slide, making a consistent throw that much more difficult.
- The hips and shoulders of the athlete are no longer square with each other, which may lead to additional corrections as the delivery slide unfolds. As a coach, this situation can be confusing when observing the athlete; separately monitoring only the shoulders, or the hips, can lead to misdiagnosis of delivery faults.
- If the hips are not square to the target line then considerable effort will have to be made in the beginning of the forward drive phase in order to get to a position approximately close to the line of delivery – another 'fix'. By and large, an athlete is going to slide in the direction perpendicular to the alignment of the hips. If the slide foot is adjacent to the hack foot, the usual consequence for a right-handed player is for the hips to twist to the left (you will note in the photograph above that Evie's hips are instead twisted to the right). As a consequence, right-handed players will typically slide to the left of the intended line of delivery, whereas left-handed players will slide to the right of LOD.
- Both of the above "fixes" are substantial and almost certainly will lead to additional problems during the drive phase, which will likely manifest themselves as timing issues when beginning the forward motion out of the hack.

To prevent these problems, curlers ~~should~~ must adopt a 'heel/toe' orientation in the hack so that the slide foot is slightly ahead of the hack foot when in the squat position. This is the 'standard' delivery position as taught for all novice curlers. By placing the slide foot slightly in front of the hack foot, one can squat comfortably in the hack, yet remain in proper alignment with the line of delivery: with the hack leg pointing directly at the target broom, and the slide leg parallel to the hack leg.

In the picture at left, Evie models the correct stance in the hack with her slide foot ahead of her hack foot so as to maintain a square posture relative to the LOD when in the hack. Observe how easily Evie is able to get into a comfortable squat, balanced with good posture, without an

uncomfortable 'reach' for the handle of the stone. Note that the precise position of the slide foot relative to the hack foot **may differ for every player**. That position will depend on things such as (1) the player's flexibility, (2) the width of the player's hips, (3) the relative length of the player's legs. The optimal slide foot position will permit the athlete to maintain a body orientation in the hack that (1) levels the hips horizontally, (2) ensures the hips are square to the target line, and (3) assists the athlete in maintaining a straight (vertical) back when in the squat. Finding that optimal slide foot position, and having the discipline to maintain that position with each and every shot, is critical to throwing consistency.

Our final image in this article illustrates an improper posture in the hack with the slide foot adjacent to the hack foot rather than in the "heel-toe" orientation. Here, I tried to maintain the identical camera angle used in the previous image. In this photograph, note that (1) Evie's hack leg is oriented slightly left of the prior image, and (2) Evie's sliding leg appears to point at the camera, which is well to the left of the intended target line. Observe that Evie's shoulders and hips are no longer square to each other. From this improper position it will be difficult, if not impossible, for Evie to 'fix' her delivery during her forward motion and accomplish a slide on the LOD. We note that in some athletes, this improper setup position is followed by a move of the broom position to the left (in the case of a right-handed delivery) so that the hips and shoulders are then square relative to each other, but in such a case only the athlete's gaze will be on the LOD; the entire rest of the body will be aligned to the left. This will require a very substantial 'fix' during the forward slide to get the stone anywhere near the proper line.

SUMMARY

In summary, while timing and balance issues can certainly impact throwing accuracy, line of delivery issues often occur as a result of setup issues in the hack including problems that stem from something as simple as the position of the slide foot. It takes discipline to consistently setup identically for each and every shot. However, as with a golfer's swing, that consistency is critical to achieve higher shooting accuracy.

QUESTIONS

We are pleased to provide whatever assistance we can to coaches and athletes. Our contact information is below.

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