In this month’s installment of Slowinski at-large, I share with readers the secrets of how the top bowlers in the world create a world-class swing. By understanding the most efficient biomechanical motions of top players, you can identify areas needing improvement in your own physical game, as well as areas in which you are executing your swing with solid proficiency.

The physical execution of athletes in all sports has changed over time. Bowling, in my opinion, is lagging behind other sports, such as golf, that have spent more focused time on instruction. If you review old video clips of professional golfers from 50 years ago, you would see far greater physical execution variation in the top players. Yet, this extreme variation is not present today. The top players have more similar physical execution because the current physical game is more biomechanically efficient. The physical game has literally evolved due to more coaching and better role models. The same is happening in professional bowling as well. But, we need to look for these improved biomechanics to understand how to adapt these motions to our own game or those whom we coach.

One of the benefits of working at the Kegel Training Center is access to an extensive video library of both top PBA professionals and elite players from around the world who have visited the Training Center. By reviewing video of these top players, we are able to determine a range of acceptable physical motions that they all possess independent of their perceived differences in physical style. Accordingly, we evaluate and analyze the swing of these players and the physical components that contribute to a great swing. We also use these videos to show our students how these physical movements contribute to an improved swing and physical game.

These components include the stance position of the body, the movement of the feet and the use of the balance arm throughout the approach. The difference between the best in the world and others is striking in these areas. As you read this article, you will begin to look for these in your own game as well as the physical game of others.

Specifically, by observing some of the top bowlers, you will begin to see some common body positions that promote a great swing. And with a great swing comes improved ball motion and repeatability. This is likely to lead to an increase in ball speed, a higher rev rate.

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and improved ball motion. Most importantly, you can practice these elements throughout the summer months to be ready for next season.

**What is the swing slot?**

One of the most common errors I see as a coach is a poor swing plane. Due to a sequence of less efficient body positions, amateur bowlers often must self-correct their swing direction, producing a large looping motion. Many amateurs manipulate the ball around the waist, often leading to a swing that is too far behind the back. As a righthanded bowler, their push direction moves to the right, loops around the back to the left, and must be moved back to the right to clear the hip again. This often leads to the swing being far outside of a solid position at the release. With a focus on the most efficient biomechanical movements, these players can obtain a smaller and improved swing slot.

I refer to the “swing slot” as the location of the bowling ball from start to finish in most elite bowlers. It is exemplified by a bowling ball that remains close to the body, has a straighter and tighter swing...and leads to a release that is extremely close to the ankle, and released under the head. I call this a slot because there is very little side-to-side motion. In other words, any figure eight looping is extremely tight.

From a front video view, you can see this “slot” by drawing a line straight down from the ball-side eye to the foul line and a line from the center of the chin to the foul line. The best bowlers will keep the swing of the ball aligned near this slot from start to finish. And, they will follow through on the same slot line, ending with their forearm through the middle of their face on this slot line (See photo 1).

**Setting the stage in the stance**

We still have bowlers who think that dropping the shoulder is a physical game flaw. Yet, this dropped shoulder is present in every top player around the world. If you review the stance position of elite players, you will see a ball-side shoulder that is dipped down. So, the dropped shoulder is present from the first moment of the setup. Specifically, the angle of the shoulder dip is approximately 110 to 115 degrees, in the stance.

By dropping the shoulder in the stance, the ball is in a position to drop into the swing slot more easily. And, this initial position will promote clearing the hip as the ball transitions from push into the swing.

Moreover, the ball-side eye will remain over the intended target line from start to finish. This will allow a bowler to have their targeting eye over the intended line, from the start.

When I teach, I use an easy-to-remember verbal cue reference for bowlers to help them establish a stance position with the dropped ball-side shoulder. Simply think to yourself, “eye over the hand and chin over the ball.” Then, dip your shoulder a
hit more. This will set the stage of the ball dropping into a better swing slot.

From photo 2, with the slot lines drawn, you can see how the hand could drop the ball straight into the swing if the leg moved out of the way. This is the next key area in promoting a great swing.

Walking the tightrope

When the ball is dropped into the swing, a bowler must clear the hip in order to keep the swing in the swing slot. It is at this point that many amateurs’ swings begin to go awry. You will watch them swing the ball around their hip as well as turn their hand to clear the leg and hip.

In order to promote the ball remaining in the swing slot, the most efficient physical move is to step over directly in front of the slide foot, allowing the swing slot to open up without having to move the ball around the hip by manipulating the swing direction or rotating the hand. Literally, you will step over in front of the slide foot. For a 4-step approach, this will be the first step. For a 5-step delivery, this will be the second step (See photo 3).

If you watch bowlers such as Chris Barnes, Norm Duke and Jason Couch, they do this move with precise fluidity, allowing the ball to pass close to the body. By stepping over, the leg and hip move out of the way...opening up the swing slot for the ball to pass by without impeding its intended direction, in the swing slot.

When a bowler doesn't step over and complete the tightrope step sequence, they must clear the hip in other ways. This can include moving the knee out of the way or swinging around the hip. Many amateurs have adapted by pushing the ball to the ball side, allowing the swing to loop around the hip. Yet, this will lead to the swing moving too far behind the back. A swing that goes behind the back must eventually come back the same way. This extra movement will impact the quality of the swing significantly. This increases the amount of the loop and takes the swing off of the swing slot in several locations. Like a derailed train, this will derail your swing.

The balance arm becomes important earlier than you may think

Most bowlers I talk with only think about the balance arm at the end of the approach. Specifically, as the name implies, they think of the balance arm as an element of the slide and finish, only used for balance. Yet, the balance arm plays an important role as soon as the balance hand leaves the ball in the transition into the swing from the push. Most top bowlers have the balance arm lead forward with the thumb down (See photo 4).

To envision this, think of Chris Barnes, Jason Couch or Sean Rash and their use of the balance arm throughout the approach, as soon as the ball leaves the balance hand through to the finish. The balance arm is directly in front of them throughout the approach. This position serves to open the shoulders allowing the swing to stay in the swing slot from the upswing through the downswing. Professionals have an angle that is between 150 to 180 degrees, as measured from the balance arm through to the swing, around the balance arm side of the body.

This is another area in which amateurs differ significantly from professionals. As soon as the balance arm moves, toward the wall, the shoulders will begin to close promoting the ball-side shoulder to come forward. This will require the bowler to use muscle to maintain the swing line. Most often, the ball will not remain in the ideal swing slot and will be swung outside of this slot.

The balance arm position coming into the slide is best when it is closest to 180 degrees, measured from the balance arm to the location of the ball through the opposite side of the ball. This angular measure starts when the balance hand leaves the ball and continues into the slide. With the ball at the top of the swing, the balance arm will move from the front to the side to the back, on an arc, facilitating the rotation of the core of the body, chest and abdomen. As the bowler slides,
the core of the body rotates, allowing the ball to remain in the slot. With the core rotating, this is similar to a slingshot. The core rotates with the swing remaining in the slot and the head remaining steady.

**Finish it off**

At the release, the ball is close to the ankle on the swing slot line. Accordingly, the bowler has dropped the shoulder significantly. The shoulders, at the release point, are now in the 135- to 140-degree range. The shoulder has dropped significantly, allowing the ball to remain on this slot line (See photo 5).

Dropping the shoulder is necessary to keep the ball on the swing slot through the release. In fact, it was present in top bowlers from the past as well. Yet, we have had coaches and textbooks state that the shoulders should be square with the chin over the knee over the slide foot. In today’s game, this can be far from the truth. Today’s great swings require a shoulder that is dropped significantly and a swing that remains on the swing slot.

**Keys to promoting a better swing slot**

In closing, I want to summarize the key physical components of producing a great swing. These will serve to help coaches evaluate players better as well as readers reflect on their own games with an eye on identifying strengths and weaknesses.

- Ball-side steps over directly in front of the slide shoe to clear the hip, opening the slot to the swing.
- As the ball drops into the swing and the balance arm hand comes off the ball, get the balance arm out in front of you, thumb down, just below your chest. Keep this position until the ball is at the top of the swing and you are entering into the slide.

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**BALL TRACKING TEST RESULTS**

Each ball’s test paths are displayed on the pattern on which the ball received the highest rating during BTM’s Ball Review tests.

**900 GLOBAL BREAK 575**

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