

Supporting narrated video (NV) demonstrations, high-speed video (HSV) clips, technical proofs (TP), and all past articles are available online at billiards.colostate.edu. Reference numbers used in the articles help you locate the resources on the website.

This is the fifth article in a series dealing with the “System for Aiming With Sidespin” (SAWS), a full-length instructional video I released recently on DVD and for stream or download. SAWS covers a new system to compensate your aim for cue ball (CB) deflection and object ball (OB) throw when using sidespin. It uses combinations of Back Hand English (BHE) and Front-Hand English (FHE), and it can be applied to any cue, bridge length, and shooting style. A detailed table of contents of SAWS along with a video overview can be found at DrDaveBilliards.com/saws. In the last two issues, I covered how to adjust your aim for cut-induced and spin-induced throw. This month, I will look at how to adjust your aim for CB deflection, which is the combined effect of squirt and swerve. If you don’t know what all of these terms mean, check out videos and resources on the “[aim compensation when using sidespin](#)” resource page in the FAQ section at billiards.colostate.edu.

Before looking at the heart of the SAWS system, we need to review BHE and FHE. **Diagram 1** shows how BHE works. You first aim with center-ball alignment, with the cue pointing in the desired CB direction. Then, you pivot your back (grip) hand while keeping the bridge hand still. This adjusts the aiming direction; and if the bridge length is just right for the given cue and shot, the pivot angle will exactly cancel CB deflection, sending the CB in the desired direction. As demonstrated on SAWS, I pivot the head and entire body together with the cue to maintain the cue-body relationship during a BHE pivot.

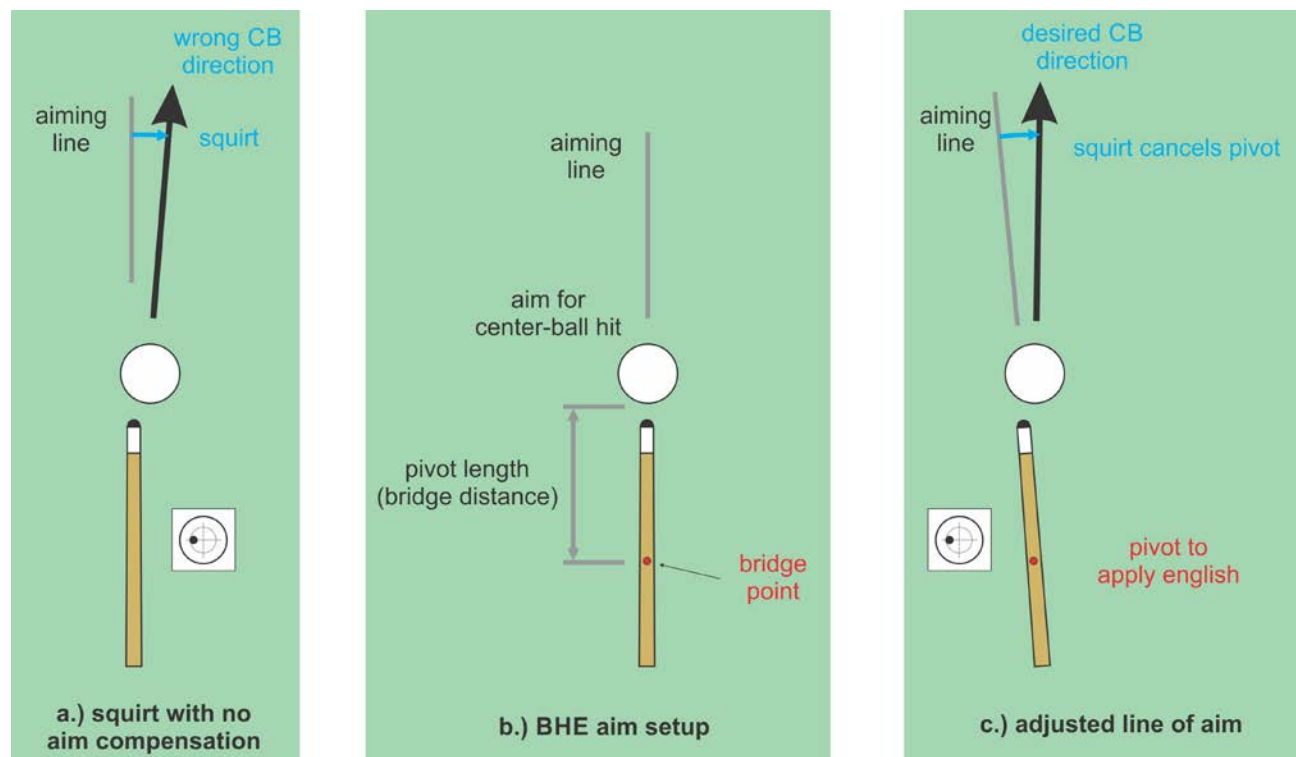


Diagram 1 Back Hand English (BHE)

Diagram 2 shows how FHE works. With FHE, you move the bridge hand instead of the back (grip) hand. This results in a much larger effective pivot distance and less aim correction. Again, in certain situations, it is possible for the FHE pivot to exactly cancel CB deflection, sending the CB in the desired direction. When

doing a FHE pivot, it is best to keep your head and body perfectly still while you shift the front (bridge) hand only.

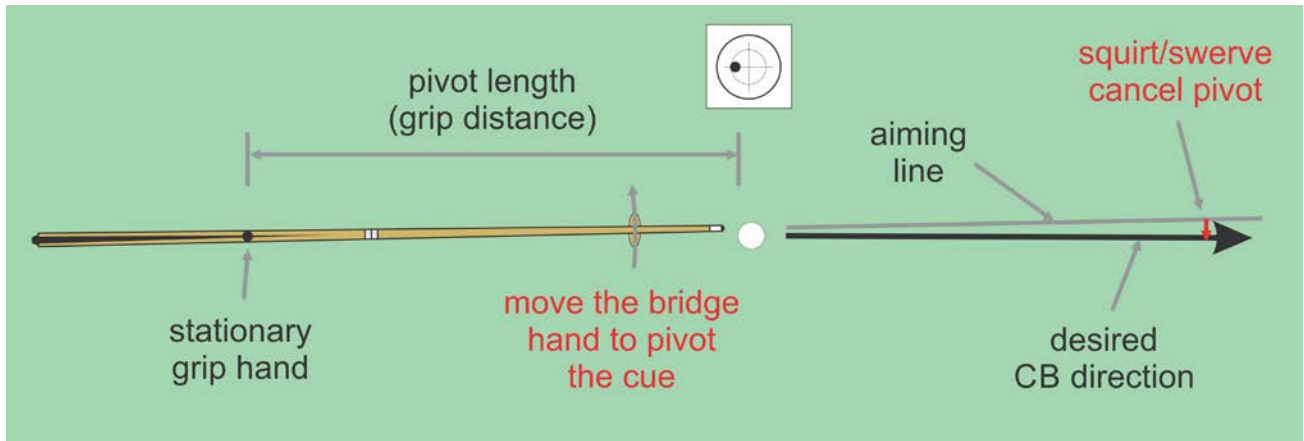


Diagram 2 Front-Hand English (FHE)

Net CB deflection varies in complicated ways for different types of shots. Fortunately, the SAWS system compensates for CB deflection automatically for shots of every speed and distance. On the [SAWS resource page](#), there is a [BHE/FHE Calibration Document](#) that describes the procedure you can use to determine the combinations of BHE and FHE needed for your cue and preferred bridge length. It is based on shooting three shots at three different distances (short, medium, and long), each at three different speeds (slow, medium, and fast). **Diagram 3** shows the CB positions for each of the shot distances, and **Table 1** is used to record the BHE/FHE percentages required to send the CB in the desired direction for each shot distance and speed. When you are done with the calibration drill, you will be able to use appropriate combinations of BHE and FHE to automatically compensate your aim for CB deflection for shots of any distance, any speed, any amount of sidespin.

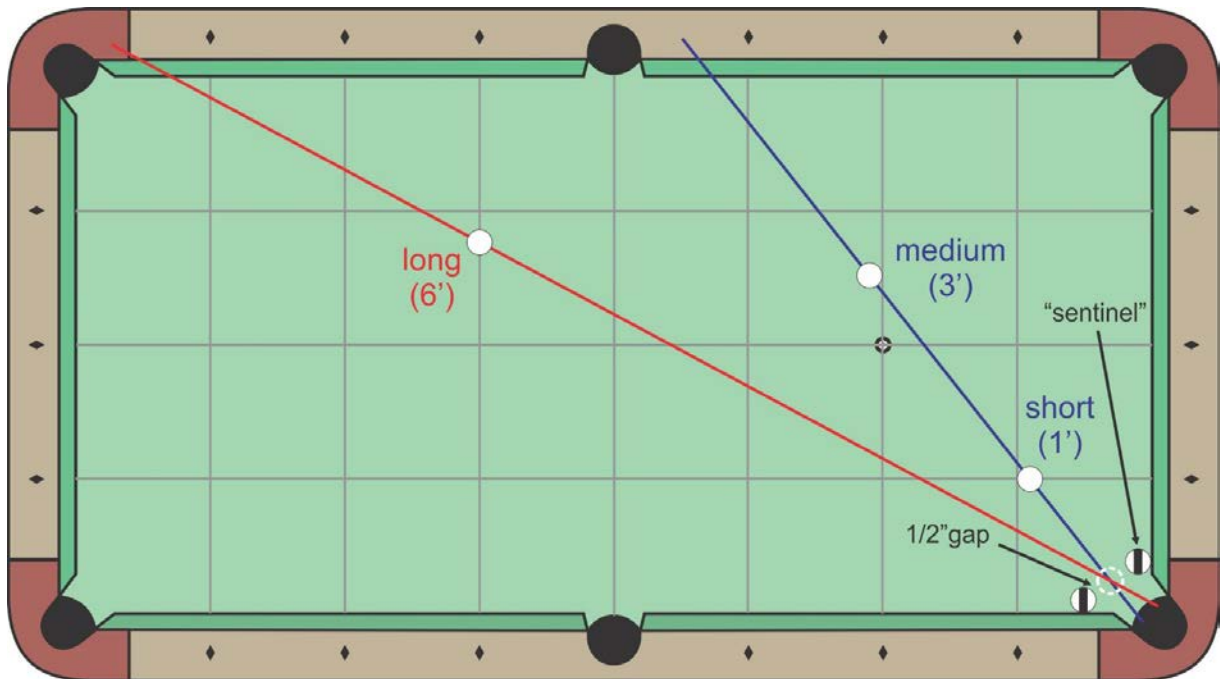


Diagram 3 SAWS BHE/FHE Calibration Shots

Table 1 SAWS BHE/FHE Calibration Table

		speed		
		slow	medium	fast*
distance	short (1')	BHE: ___% FHE: ___%	BHE: ___% FHE: ___%	BHE: ___% FHE: ___%
	medium (3')	BHE: ___% FHE: ___%	BHE: ___% FHE: ___%	BHE: ___% FHE: ___%
	long (6')	BHE: ___% FHE: ___%	BHE: ___% FHE: ___%	BHE: ___% FHE: ___%

To do the calibration drill, first place balls on the table at each of the three CB positions in **Diagram 3**, and then place the center and sentinel balls by the pocket. Adjust the balls so the gaps appear to be about the same size when looking back at both CB directions. You can tighten the gap size after you gain more experience and skill with the system. Once you have the ball positions set, tap down on them and place donuts (“self-adhesive hole reinforcement labels”) so you can spot the balls quickly and accurately during the drill.

You should complete each column in the calibration table (**Table 1**) before moving to the next. First practice the column’s speed, starting with “slow.” You can define the speeds (slow, medium, and fast) any way you want, as long as you are consistent, but this is how I define them in the calibration document:

Speed definitions (hitting from the head string):

- “**slow**” – ¼ stroke off 1 rail back to the head string
- “**medium**” – ½ stroke off 2 rails to the center string
- “**fast**” – ¾ stroke off 3 rails to the foot string

A good way to control your speed is to vary your stroke length. For example, I can achieve my “slow” speed fairly consistently by using only ¼ of my full bridge length during the backstroke. And for the “fast” speed, I use ¾ of my bridge length for the stroke.

One of the best things about the SAWS system is that it can be individualized for any bridge length, any grip hand position, any cue, and any speed definitions, as long as everything is consistent. Your BHE/FHE percentages will be probably be different than mine, but they will be your numbers and they will work for you.

At each CB position, you need to find the percentages of BHE vs. FHE required to pocket the CB cleanly. If you don’t know what values to start with, you can use the example numbers in my calibration document. To keep things simple and consistent, use pure right sidespin (with no top or bottom) for every shot, and hit close to the miscue limit for maximum spin. The system will work for any amount of sidespin, but for best accuracy with the calibration, it is best to use maximum spin.

If you use too much BHE, you will overcorrect for CB deflection, and the CB will go too far to your right with right sidespin. If you don’t use enough BHE, you will not correct enough for CB deflection, and the CB will go too far to your left with right sidespin. Adjust the BHE/FHE percentages until you pocket the CB cleanly. If the CB goes to your right, use less BHE; and if the CB goes left, use more. If you want to get really accurate values, it can help to focus on the pocket center donut, or have a friend watch from above, to notice where the CB enters the pocket.

After you find the required BHE/FHE percentages for each shot speed and each shot distance, the entire calibration table will be completed. You should also repeat the entire process again for left sidespin instead. This will give you more practice with the pivots and make sure you are pivoting the same way both right and left. If you pivot properly in both directions, the BHE/FHE percentages should be the same on both sides.

I hope you have good success with the drill. If not, work with it some more until you can pocket the CB cleanly at every distance and with every speed consistently, with both right and left sidespin. Then you will be

ready to use the SAWS system to pocket a wide range of shots using sidespin. And the best part is that no thinking or judgement is required, and you don't need solid intuition built up by years of successful practice and experience. You can start using the system effectively immediately. Just pivot with the right percentages of BHE and FHE for the shot at hand, with the desired amount of sidespin, and the CB will automatically go where you want. And even if you choose to not use SAWS at all, the calibration drill is still useful to help you experience and learn the effects of squirt, swerve, and net CB deflection.

Next month, I will show some examples of applying the SAWS system to a wide range of game-situation examples so you can see how easy, useful, and effective it can be.

I hope you are enjoying and benefiting from my series of articles dealing with the "System for Aiming With Sidespin" (SAWS). If you want to learn more, visit DrDaveBilliards.com/saws. Also check out online video [NV J.9](#) that shows examples of the SAWS system being applied to a wide range of interesting game-situation examples.

Good luck with your game,
Dr. Dave



[NV J.9](#) – "Got English?" – How to Aim Using Sidespin, With Game-Situation Examples

PS:

- I know other authors and I tend to use lots of terminology, and I know not all readers are totally familiar with these terms. If you ever come across a word or phrase you do not fully understand, please refer to the [online glossary](#) at billiards.colostate.edu.

Dr. Dave is a PBI Advanced Instructor, Dean of the Billiard University, and author of the book: [The Illustrated Principles of Pool and Billiards](#) and numerous instructional DVD series, all available at: DrDaveBilliards.com.