*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 fourth 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. Last month, I covered the basics of both cut-induced throw (CIT) and spin-induced throw (SIT). This month, I will look at some interesting game-situation throw-shot examples from SAWS.

Diagram 1 shows an 8-ball example, shooting stripes, where you need to hit a soft stun shot to hold the CB for the 8 next. If you don't adjust your aim for throw with a shot like this, you will push the 11 into the rail and miss the shot, especially on a table with tight pockets. When using soft stun like this, you must aim to overcut the OB. Since soft stun results in maximum throw, and since maximum throw is about 1" per foot, you need to aim the OB 2" to the left to account for the throw to the right. Since your goal is to hold for the 8, ideally you want to hit the 11 as full as possible and still pocket the shot, so you can cheat the pocket and throw the 11 into the rail a little. As demonstrated on SAWS, with soft speed, you can easily hold the CB for the 8. Another play demonstrated on SAWS is to use outside spin to allow a fuller hit, making it even easier to hold for the 8.

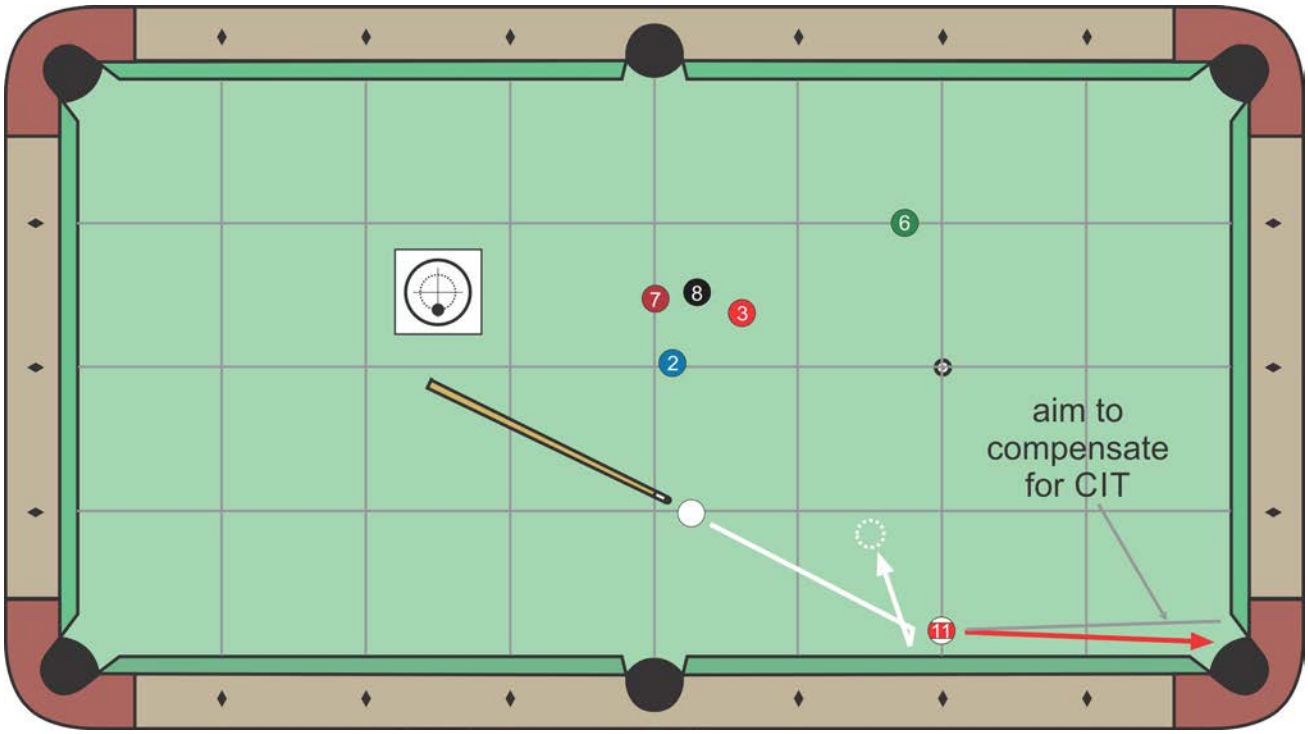

Diagram 1 Adjusting aim for CIT

Diagram 2 shows an example, shooting solids, where you can use throw to your benefit. Even if you just barely miss the 11, it does not appear you can send the 8 into the pocket since the line of centers heads well right of the pocket. However, with about 5 feet of OB travel here, you can easily throw the 8 up to 5 inches

with soft stun, and easily get the 8 to the pocket. If you did not know about throw and how to achieve maximum throw, you would not know how to pocket this ball.

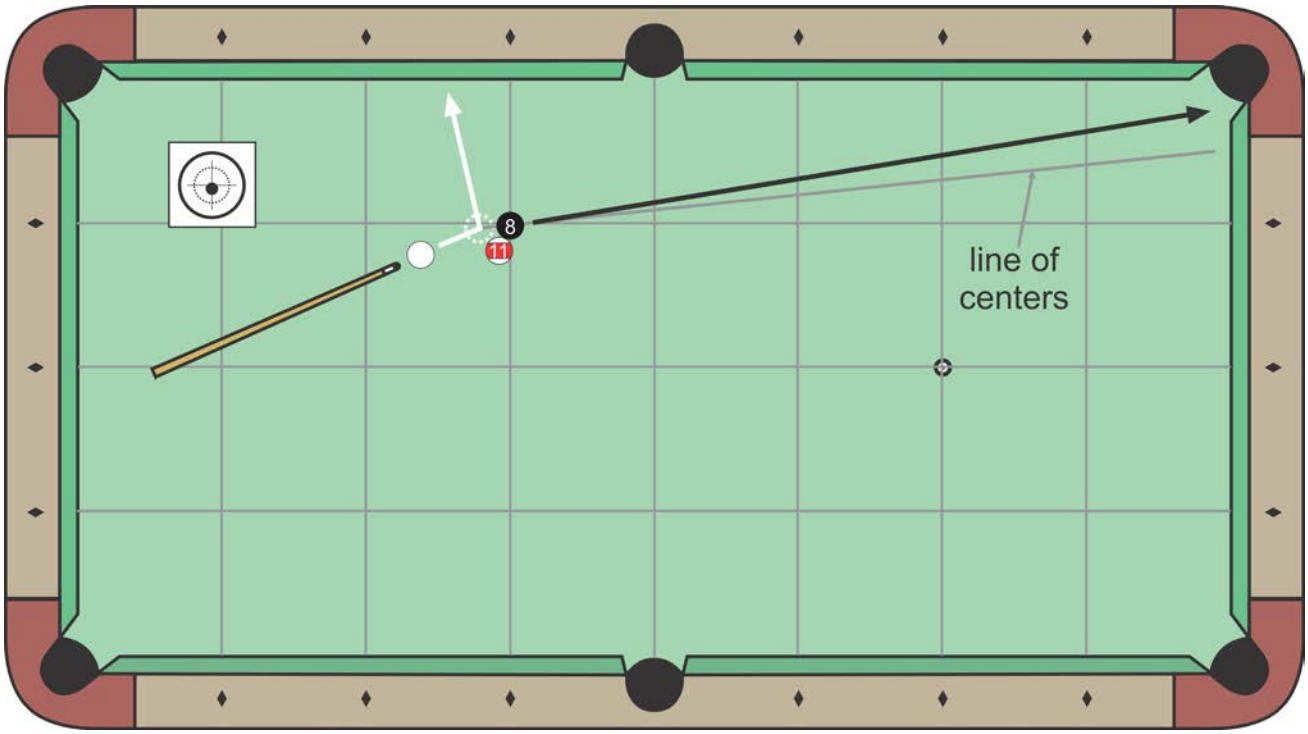

Diagram 2 Using CIT to pocket a ball

Diagram 3 shows another example where you can use throw to your benefit, in this case SIT. Again, if you barely miss the 11, the best angle you can get on the 8 sends it well right of the pocket. But if you use right spin, you can throw the 8 to the left. It turns out that to get maximum SIT, half of maximum spin produces the most throw. You might think twice as much spin would create twice as much throw, but this is not the case since more spin creates greater rubbing speed which reduces the friction between the balls. So to get maximum throw, use slow stun with half of maximum sidespin.

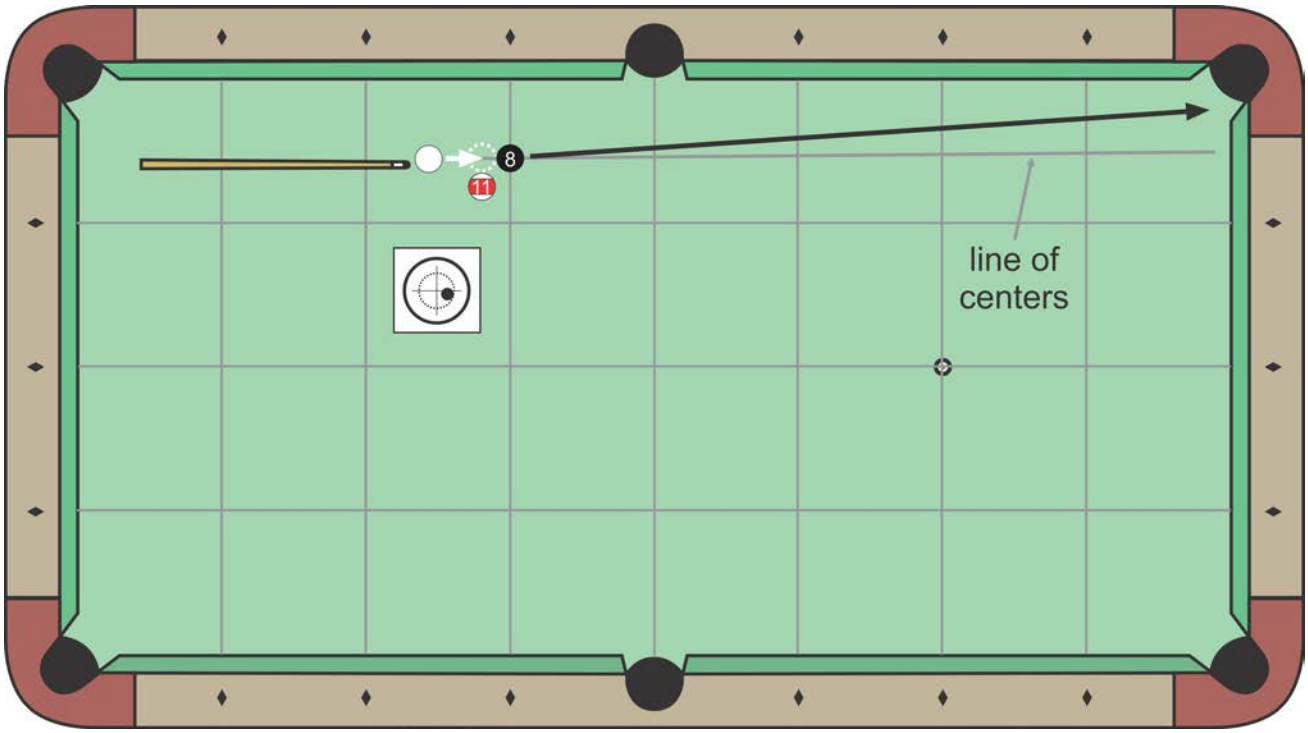

Diagram 3 **Using SIT to pocket a ball**

Diagram 4 shows a combination example, shooting solids, where you can use throw to pocket the 5. The balls are frozen with the line of centers pointing well left of the pocket. You need to throw the 5 a fairly large amount to hit the center of the pocket. To get maximum throw here, you need to aim the center of the 3 at the edge of the 5 to create a center-to-edge (CTE) half-ball hit and use pocket speed. The 3 will throw the 5 to the right into the pocket.

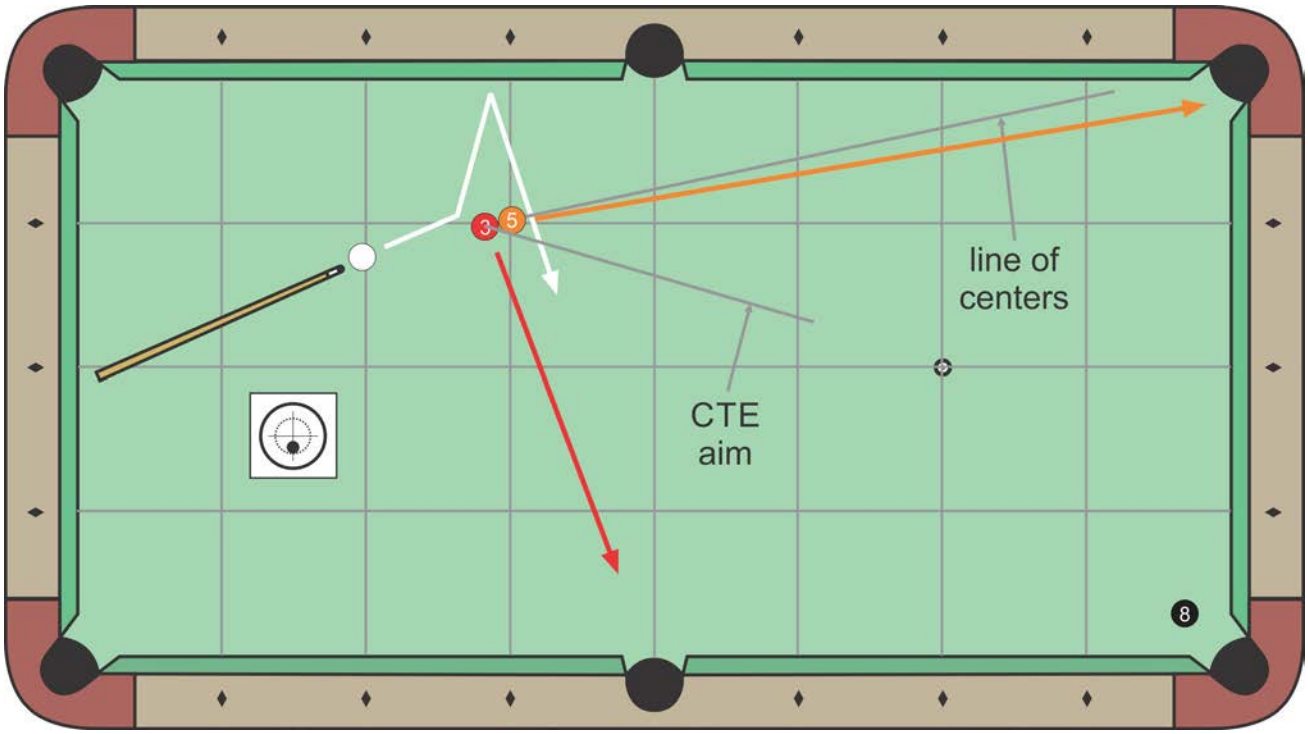

Diagram 4 **Using CIT with a frozen combo**

SAWS contains many more game-situation examples involving both CIT and SIT. Throw is a complicated topic if you want to learn all the subtleties, but the most important points to remember are:

1. **Wipe chalk marks off the CB** every chance you get (before the break and with ball in hand) to prevent cling/skid/kick.
2. **On most shots, you can ignore throw**, especially on short shots on tables with big pockets.
3. To adjust your aim to compensate for CIT, aim to **overcut the shot slightly** (i.e., hit a little thinner, or hit a little less of the ball), **or use gearing outside english**.
4. The shots you must absolutely change your aim to compensate for throw are **slow stun shots** close to and thinner than about a 1/2-ball hit, **slow roll shots**, and shots with an amount of sidespin much different than the gearing outside amount.
5. The **40% rule** can be used to judge the amount of **gearing outside spin**. If the amount of spin is greater than this, throw will be in the SIT direction; if the amount of spin is less than this, throw will be in the CIT direction; and if the amount of spin is the gearing amount, there will be no throw.
6. You must adjust for throw when aiming **frozen or small-gap combination shots**.
7. **Maximum throw** is generally about 1 inch per foot of OB travel, or 1/2 a ball per diamond on a 9' table.
8. **CIT** is largest for **slow-speed stun** shots close to about a **1/2-ball hit**.
9. To get maximum **SIT** with a straight shot, use stun, slow speed, and about **50% of maximum sidespin**.
10. Throw is smaller with **follow and draw shots** (about 1/2 with maximum backspin or full-roll topspin). Although, with a soft draw shot, much of the backspin is lost due to drag on the way to the OB which can result in a large amount of throw.

For more information and demonstrations related to all of these topics, see SAWS and the illustrations, videos, and links on the throw tutorial page at ***billiards.colostate.edu***.

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


normal video

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 PBIA 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****.*