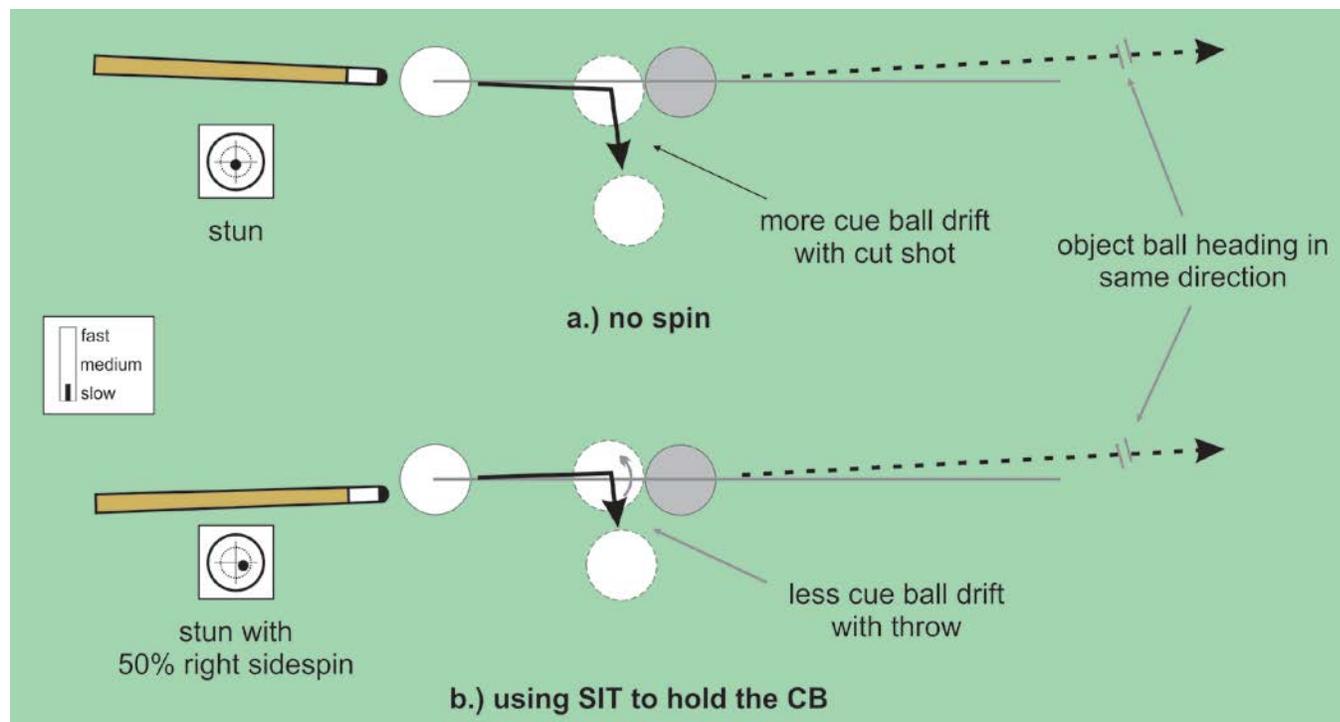


Supporting narrated video (NV) demonstrations, high-speed video (HSV) clips, technical proofs (TP), and all of my past articles can be accessed and viewed online at [billiards.colostate.edu](http://billiards.colostate.edu). The reference numbers used in the articles help you locate the resources on the website.

This is the fourth article in a series dealing with the “[Video Encyclopedia of Eight Ball \(VEEB\)](#),” a five-disc instructional-DVD set I recently created with fellow *Billiards Digest* columnist Bob Jewett. VEEB teaches all of the skills, knowledge and strategy one needs to excel at 8-ball. Topics include offensive and defensive strategy, position play, shot types, safety play, advanced shots, and run-out planning. An outline of the entire VEEB series along with video excerpts from each DVD can be viewed online at: [dr-dave-billiards.com/8-ball](http://dr-dave-billiards.com/8-ball).

This month, we look at how to use throw to help hold and limit cue ball (CB) motion after a shot. Throw is a change in object ball (OB) direction due to sideways friction force between the CB and OB during contact. As described and demonstrated in online video [NV B.86](#), when throw is due to cut angle, it is called cut-induced throw (CIT); and when it is due to sidespin, it is called spin-induced throw (SIT). If you are not very familiar with throw, you should view the video before continuing.

**Diagram 1** shows how to use sidespin to help limit CB motion after a shot. In **Diagram 1a**, pure stun is used, with no sidespin. This shot results in a certain amount of CB drift to the right (down in the diagram). In **Diagram 1b**, SIT is used to help hold the CB to a shorter travel distance. The OB is assumed to head in the same direction and speed as with the first shot. SIT allows you to hit the OB on the left side a little (creating a small cut angle to the right), and still have the OB ball head to the left as shown. Friction between the balls throws the OB to the left and throws the CB an equal and opposite amount to the right, but the cut angle reduces the net CB speed resulting in less travel distance than in **Diagram 1a**. Online analysis [TP A.29](#) shows all of the math and physics behind the effect. The reduction in CB drift might not be very large (e.g., an inch or less), but sometimes even a half CB rotation can mean the difference between a win and a loss.

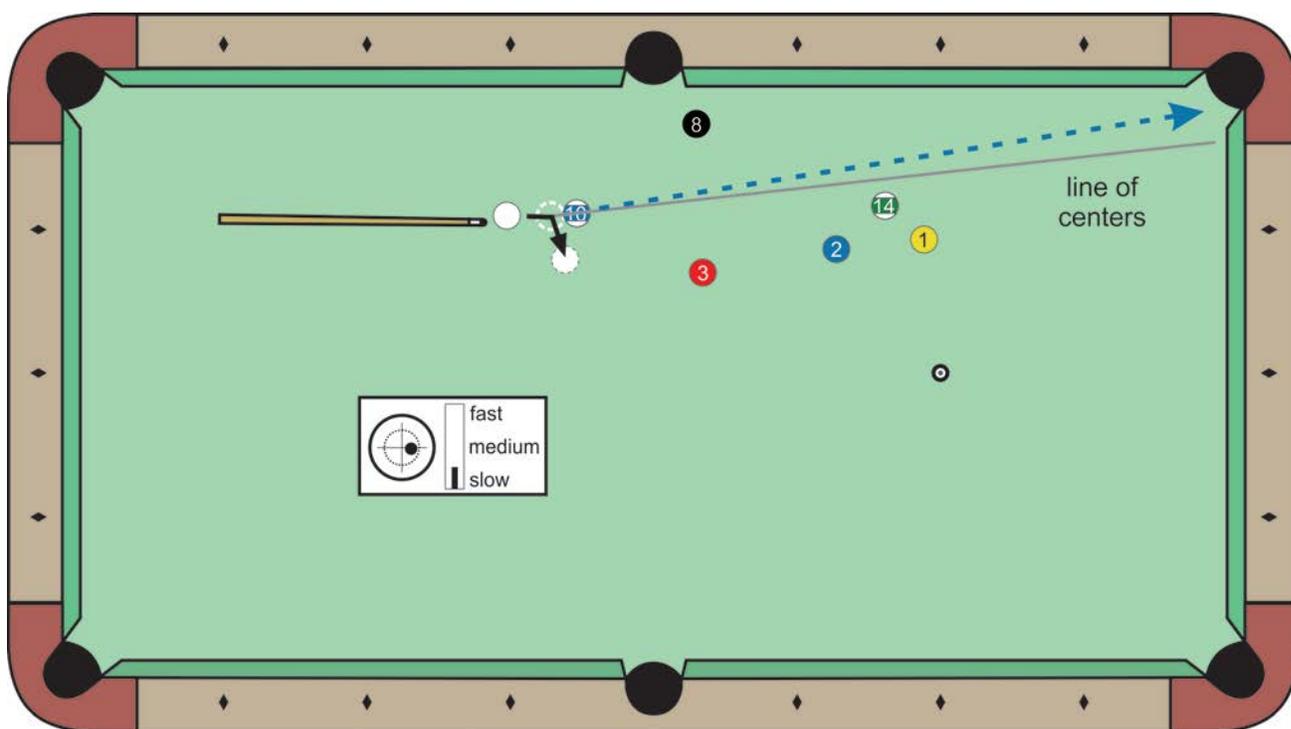


**Diagram 1 Comparison of cue-ball hold with and without throw**

As pointed out at the bottom of [TP A.29](#), it is theoretically possible (neglecting swerve) to hold the CB and create an OB angle at any CB-OB distance. However, in the real world, there is a practical limit to the CB-OB distances over which this works. The analysis in [TP A.29](#) ignores the effects of swerve. Swerve changes the effective cut angle of the shot, making it more difficult to hold the CB. And at larger distances, swerve becomes more of a factor. You might think you can eliminate the effects of swerve by using faster speed, but the problem is the amount of SIT is less at faster speeds. Also, stun (for maximum throw) is more difficult to control at larger distances. Also, it is much more difficult to judge squirt and swerve and be accurate with the hit at larger distances.

Bob Jewett has a good test to explore the ability to use sidespin to hold the CB at: [www.sbilliards.com/Misc/throwtest.gif](http://www.sbilliards.com/Misc/throwtest.gif). Give the experiment a try if you're still not convinced. At small distances with slow-speed stun, with about 50% english, the effect of throw is irrefutable and dramatic. In fact, with a small enough cut angle and the right amounts of speed and spin, the CB can actually be made to move in the same direction as the OB (e.g., to the right, with a cut to the right). An example can be viewed in the first shot of online video [NV B.21](#).

**Diagram 2** shows a good example where throw-assisted hold is called for. We are shooting stripes and need to pocket the 10 while holding the CB for a shot at the 14 next to continue the run-out. As demonstrated in online video [NV G.5](#), even at less than pocket speed, with as little angle to the pocket as possible, we can't hold the CB for the 14 using pure stun. However, with about half of maximum right sidespin and stun, at pocket speed, we can easily hold the CB. As described above, SIT allows us to hit the 10 thicker, resulting in less CB motion.



**[Diagram 2](#) Example of using SIT to hold the CB for the next shot**

Demonstrations of the shots in this article can be viewed in online video [NV G.5](#), and the VEEB-II DVD includes many more game-situation examples dealing with position play, combination shots, carom shots, kiss shots, cluster shots, kick and bank shots, and throw shots. As always, you should check out the videos and try the shots yourself the next time you're at a table. Reading is good, and watching is better, but trying is best.

I hope you enjoy my series of articles dealing with the "Video Encyclopedia of Eight Ball (VEEB)." If you want to view video excerpts from the entire DVD set, check out online videos [NV G.1](#) through [NV G.11](#). Enjoy!

Good luck with your game,  
Dr. Dave



normal video

- [NV B.21](#) – Straight shot squirt, swerve, and throw
- [NV B.86](#) – Cut-induced throw (CIT) and spin-induced throw (SIT), from VEPS IV
- [NV G.1](#) – Video Encyclopedia of Eight Ball (VEEB) Overview
- [NV G.2](#) – How to Deal With Pocket Blockers in 8-ball, from Disc I of VEEB
- [NV G.3](#) – How to Select Key Balls in 8-ball, from Disc I of VEEB
- [NV G.4](#) – How to Use Cue Ball Drag to Enhance Sidespin in 8-ball, from Disc II of VEEB
- [NV G.5](#) – How to Use Spin-Induced Throw to Hold the Cue Ball in 8-ball, from Disc II of VEEB
- [NV G.6](#) – How to Come Into the Line of Blockers When Playing Safeties, from Disc III of VEEB
- [NV G.7](#) – Various Straight-In Shot Options in 8-ball, from Disc III of VEEB
- [NV G.8](#) – How to Deal with an End-Game Ball Tied Up with the 8-ball, from Disc IV of VEEB
- [NV G.9](#) – 2nd-Ball 8-ball Break, from Disc IV of VEEB
- [NV G.10](#) – Rack 8 Run-Out Example from Disc V of VEEB
- [NV G.11](#) – Rack 9 Run-Out Example from Disc V of VEEB



technical proof

- [TP A.29](#) – Using throw to limit cue ball motion

PS:

- I am happy to announce that my entire collection of instructional DVDs (23 total to date) is now available for streaming via YouTube. For more info, see: [dr-dave-billiards.com/stream.html](http://dr-dave-billiards.com/stream.html).
- 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 don't fully understand, please refer to the [online glossary](http://billiards.colostate.edu) at [billiards.colostate.edu](http://billiards.colostate.edu).

*Dr. Dave is author of “[The Illustrated Principles of Pool and Billiards](#)” book and DVD, and co-author of the Video Encyclopedias of “[Pool Shots \(VEPS\)](#),” “[Pool Practice \(VEPP\)](#),” and “[Eight Ball \(VEEB\)](#),” and the “[How to Aim Pool Shots \(HAPS\)](#)” and “[Billiard University \(BU\)](#)” instructional DVD series, all available at: [dr-dave-billiards.com](http://dr-dave-billiards.com).*