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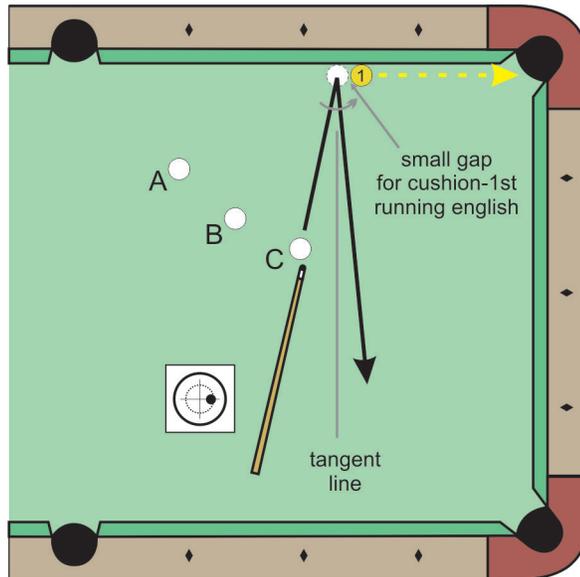
*Supporting narrated video (NV) demonstrations, high-speed video (HSV) clips, technical proofs (TP), and all of my past articles can be accessed and viewed online at [billiards.colostate.edu](http://billiards.colostate.edu). The reference numbers used in the articles help you locate the resources on the website. If you have a slow or inconvenient Internet connection, you might want to view the resources from a CD-ROM or DVD. Details can be found online at: [dr-dave-billiards.com](http://dr-dave-billiards.com).*

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This is the sixth article in a series dealing with “[How to Aim Pool Shots \(HAPS\)](#),” a three-disc instructional-DVD set I recently created with fellow *Billiards Digest* columnist Bob Jewett. HAPS covers cut-shot aiming systems, how to adjust for cut-induced throw, how to aim without guessing when using sidespin (english), and how to aim specialty shots including caroms, kisses, combos, rail cut shots, and elevated-cue shots. Also included are numerous simplified and effective systems for aiming kick and bank shots. An outline of the entire HAPS series along with video excerpts from each DVD can be viewed online at: [dr-dave-billiards.com/aiming](http://dr-dave-billiards.com/aiming).

This month, we will look at the intricacies of how to aim rail cut shots, where the object ball (OB) is frozen to a rail cushion. **Diagram 1** shows a rail cut shot with three different cue ball (CB) positions. With a small-to-medium cut angle like from CB position **A**, you should aim the shot as normal, as if the cushion were not there. If hitting a stun shot with no sidespin (e.g., to have the CB head across table along the tangent line), to have the OB head straight down the rail you would need to aim to overcut the ball slightly to compensate for throw, as presented in detail on Disc I of HAPS. With a slight overcut, the CB hits the cushion slightly before the OB and hits the OB while it is compressing the cushion. Even with steeper angles like from CB position **B**, you can still aim the shot as normal, ignoring the cushion. For example, if using gearing outside english (described in my January '15 article), there would be no throw so you would aim to hit the OB along the line of centers to the pocket. In that case, the CB would ideally hit the OB and cushion at the same time. If using more sidespin than the gearing amount, you would need to aim to hit the OB slightly before the cushion to send the OB straight down the rail as a result of spin-induced throw (SIT).

With steep-angle rail cut shots like from CB position **C**, the shot is much easier if you aim for a cushion-first hit with running or inside english (in this case, right sidespin). With this approach, you don't need to hit the shot as hard as with a straight thin-cut hit. Also, the sidespin helps send the CB toward the OB as it rebounds off the cushion, making the shot much easier. In online video **NV E.6**, we demonstrate how to use a combination of backhand english (BHE) and front-hand english (FHE) to help aim the shot (described in my December '14 article). Here, with the fairly short distance and medium speed, I use mostly BHE with a small amount of FHE, as covered on Disc I of HAPS. I first aim center-ball to send the CB just in front of the OB on the cushion. Then I pivot to apply nearly maximum right english. Then I stroke straight along the pivoted line. The CB heads off the cushion and OB fairly close to the tangent line because the english “takes” on the cushion mostly before the CB hits the OB. If the CB were to hit the OB first instead, before interacting with the cushion, the sidespin would send the CB much farther down table, possibly risking a scratch or even going long of the corner. With really steep angles, it is possible to aim for the thin cut with no sidespin, but this approach is much more difficult. It requires more speed, and the margin for error is much smaller than with the cushion-first running-english shot. Try out both approaches and see which is more successful and consistent for you.

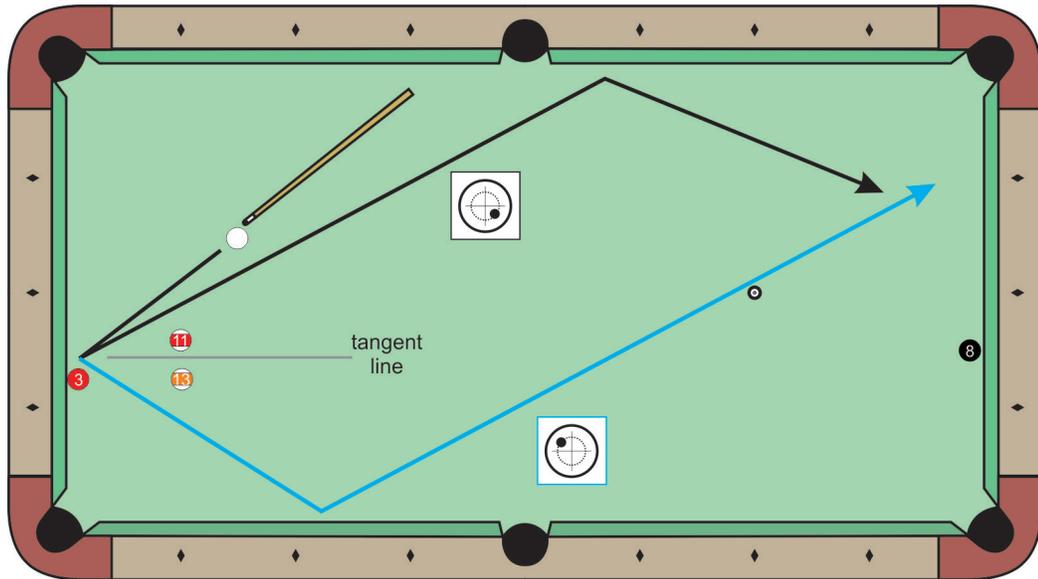


**Diagram 1 Rail cut shot aiming**

**Diagram 2** shows two options involving CB control with a rail cut shot from a game of 8 ball. Sometimes we need sidespin to “take” on the cushion after the CB hits the OB. The two CB paths shown in the diagram are examples. For the black path, you must hit the ball first just before hitting the cushion (or while the CB is just beginning to contact and compress the cushion) with bottom-right (outside or reverse) english. The ball-first hit allows the right sidespin to “take” off the cushion, causing the CB to rebound to the right to avoid the obstacle balls and head up table for a shot at the 8. Depending on the amount of sidespin, this might drive the OB into the cushion slightly, sending the OB off the cushion and to the outside of the pocket slightly, but if the OB is close enough to the pocket, and/or if the pocket isn’t very “tight,” the ball will still be pocketed. Again, the ball-first hit allows the sidespin to significantly change the rebound angle off the cushion. If the CB were to hit and interact with the cushion before hitting the OB, the CB would head very close to the tangent-line direction instead and collide with the obstacle balls (the 11 and 13).

If the OB were farther from the pocket or if the pockets were really “tight,” it would be important to send the OB straight down the rail. To accomplish this with a ball-first hit, more sidespin (more than the “gearing” amount) would be needed to help throw the OB to the left some to counteract the undercut aim (although, the extra spin would also change the CB direction). Alternatively, one could attempt to hit the ball and cushion at the same time with “gearing” outside english (described in my January ’15 article and covered on Disc I of HAPS). This would send the OB along the line of centers straight down the rail with no throw. The ball-to-ball contact would occur before the CB interacts with the cushion, and the spin would still “take” as desired. The risk with this approach is that if you hit the cushion in front of the ball, with the english taking before the CB hits the OB, the CB would come off in the tangent-line direction instead, colliding with the obstacle balls.

An alternative to using ball-first reverse english with the shot in Diagram 2 is to use running or inside english instead, as shown with the blue path. As before, if the cushion were hit too early, all of the sidespin would “take” before the CB hits the OB and the CB would come off close to the tangent line into the obstacle balls. To avoid the obstacle balls and get up table for the 8, the CB must hit the OB before or during cushion compression. The sidespin must interact with the cushion after the OB is gone for the rebound angle to lengthen past the tangent line. The blue path in the diagram shows what happens with a ball-first hit with running english. Again, with the ball-first hit, the OB gets thrown into the cushion slightly and rebounds off the rail a small amount, but it can still be pocketed. To send the OB straight down the rail instead, you would need to hit the cushion a hair before the OB. This would over cut the ball slightly away from the rail due to the compression of the cushion, but the left spin would throw the ball back toward the rail, back on line. And again, as long as the OB is hit before the CB interacts with the cushion too much, the english will still change the rebound angle off the rail.



**Diagram 2 Rail cut shot CB control**

In summary, with rail cut shots, running english with a cushion-first hit can be used to help pocket the ball when the angle is steep. And at all angles, reverse or running english can be used to move the CB off the tangent line path only if the ball is hit before or during cushion compression. These two principles can make rail cut shots easier and more effective. If you want more information or want to see super-slow-motion videos of a range of different types of rail cut shots, see the “[rail cut shots](#)” resource page in the FAQ section at [billiards.colostate.edu](#).

Demonstrations of all of the shots in this article can be viewed in online video **NV E.6**. As always, you should check out the video and try the shots yourself the next time you are at a table. Reading is good, and watching is better, but trying is best. Also, if you want to refer to any of my past articles mentioned above, they are all available at [billiards.colostate.edu](#).

I hope you are enjoying my series of articles dealing with the “How to Aim Pool Shots (HAPS)” DVD collection. If you want to view video excerpts from the entire DVD set, check out online videos **NV E.1** through **NV E.8**. Enjoy!

Good luck with your game,  
Dr. Dave



- [NV E.1](#) – Fractional-Ball Aiming, from HAPS I
- [NV E.2](#) – Back-Hand (BHE) and Front-Hand English (FHE), from HAPS I
- [NV E.3](#) – Using "Gearing" Outside English to Eliminate Throw, from HAPS I
- [NV E.4](#) – Carom-Shot Trisect-Draw System, from HAPS II
- [NV E.5](#) – Combination Shot Throw Adjustment, from HAPS II
- [NV E.6](#) – Rail Cut Shot Aiming, w/ and w/o Sidespin, from HAPS II
- [NV E.7](#) – Mirror Kick-Shot Aiming System, from HAPS III
- [NV E.8](#) – 1/3-More-Than-Twice Bank-Shot Aiming System, from HAPS III

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 don't fully understand, please refer to the [online glossary](#) at [billiards.colostate.edu](#).

*Dr. Dave is author of "[The Illustrated Principles of Pool and Billiards](#)" book and DVD, and co-author of the "[Video Encyclopedia of Pool Shots \(VEPS\)](#)," "[Video Encyclopedia of Pool Practice \(VEPP\)](#)," "[How to Aim Pool Shots \(HAPS\)](#)," and "[Billiard University \(BU\)](#)" instructional DVD series.*