

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.

On the [bank/kick resource page](#) at billiards.colostate.edu, I cover many important and useful diamond systems for aiming all types of kicks and banks. The most basic and important system is the through-diamond rolling-ball 2-to-1 system shown in **Diagram 1**. In recent online videos [NV L.33](#) and [NV L.35](#), I demonstrate the system and show how to make aiming adjustments when necessary. I also show a wide range of game situation examples that demonstrate the usefulness of the improved system. In this column, I summarize some of the important basics.

The 2-to-1 system is easy to understand and apply at the table. If you roll the cue ball (CB) along any 2-to-1 track (2-to-1, 3-to-1.5, 4-to-2, 5-to-2.5, or anything in between), the CB will kick to the corner. As I demonstrate in the videos, the system can also be used to target balls away from the corner or in the open, and it can also be easily modified to account for other shot speeds. The system can also be used for long kicks off a short rail and rolling banks off any rail.

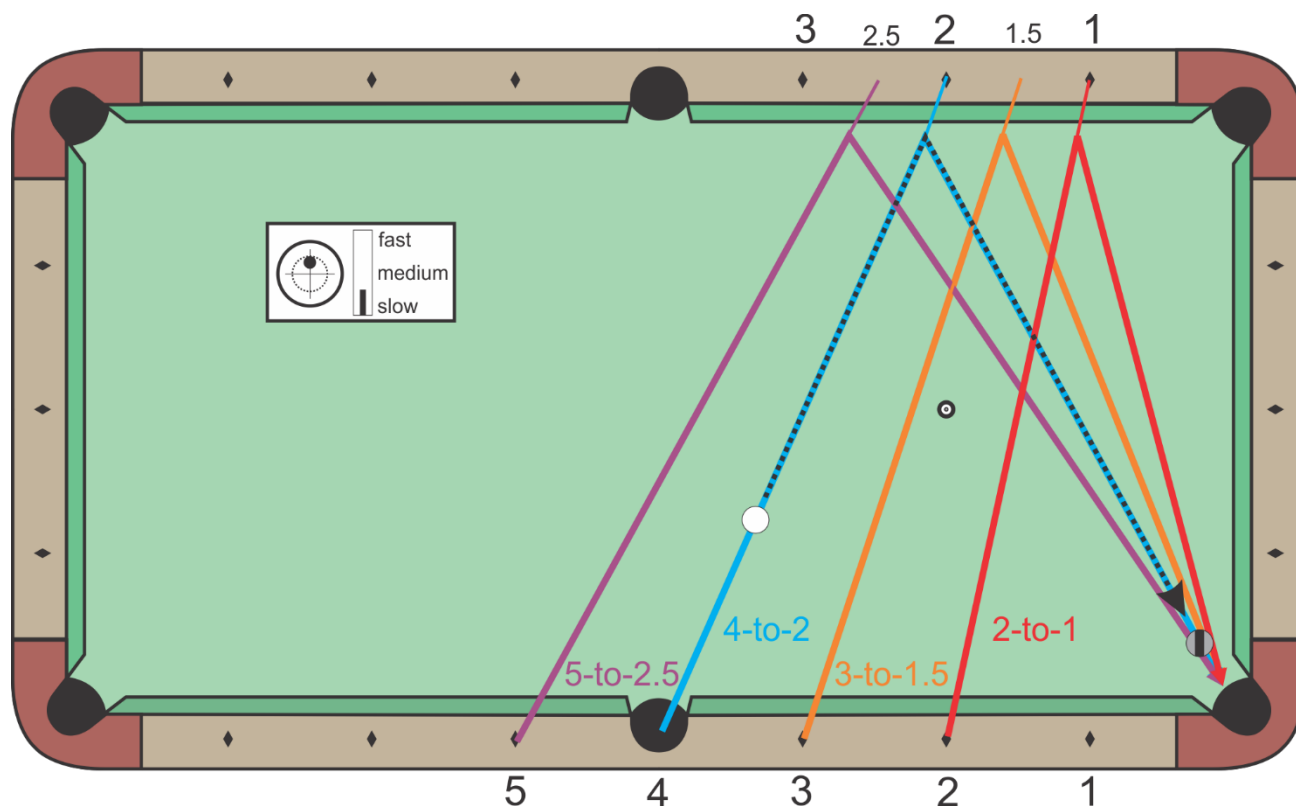


Diagram 1 2-to-1 Rolling Kick System

When shooting from above the 5-to-2.5 line, rolling kicks or banks will go long. As shown in **Image 1** from the second video, if you first observe how long the CB heads on a test shot, you can figure out how much correction is required on the aiming rail, which can be useful to know during a game. As demonstrated in the video, when kicking along the 6-to-3 line, the CB goes long of the target (see “2e” in Image 1). Since everything is 2-to-1, simply adjust your aim up table by half the error (see “e” in Image 1) to get an accurate hit.

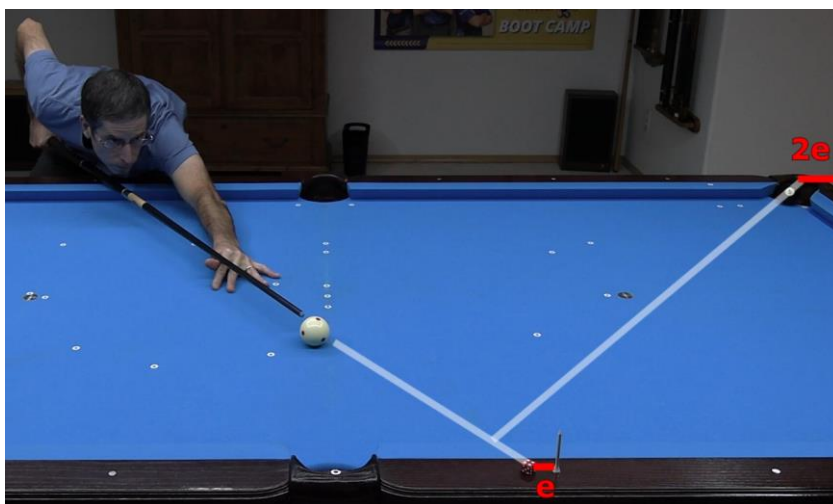


Image 1 Aim correction on 6-to-3 track

My table plays close to what should be expected on most tables under typical conditions. Although larger adjustments would be required on Diamond brand tables that typically bank very short, based on the info and demos at the link in the YouTube video description. But, as players, we always need to be able to adjust to table and environmental conditions. That's why it is important to do test shots like these on an unfamiliar table, so you will know how much to adjust relative to system aims.

Before continuing, I want to stress the importance of being extremely careful to hit the CB on the vertical centerline when using the 2-to-1 system. If you have even a hair of running spin, you will miss the target long. And if you have even a hair of reverse spin, you will miss the target short.

As I demonstrate in the videos, when the CB is between two reference lines, you can simply adjust relative to the lines. In **Image 2**, the CB is exactly between the 4-to-2 and 5-to-2.5 lines, so the required aim point is right in middle. If the CB is not exactly between the lines, you can do a 2-to-1 pivot relative to the closest line to find the required line of aim. Doing a parallel-shift relative to the reference lines, as some people suggest, is not very accurate, especially when the CB is far from a line. As I demonstrate for the shot in Image 2, a parallel-shift from the 4-to-2 line to the CB sends the ball well short of the target, and a parallel-shift from the 5-to-2.5 line goes well long.



Image 2 Aiming between the lines

To be accurate with the system, you always need to do a 2-to-1 pivot relative to the system reference lines. For example, **Image 3** shows a 2-to-1 pivot from the 4-to-2 line. The cue cross-over point on the near rail must always move twice as far as the aim point on the kicking rail, until the line is over the CB position.



Image 3 2-to-1 pivot between references lines

The rail-tip aim adjustment on each track (for example, the adjustment “e” in Image 1) needs to be used properly for it to be helpful at different CB positions. For example, in **Image 4**, the CB is on the 6-to-3 line, but if you just move the tip on the rail the amount we found earlier and aim at that spot, the CB will come up well short. When I found the aim adjustment, I had the cue over diamond 6, so you first need to pivot the cue to the adjusted tip position, keeping the cue over diamond 6 (see the red line in Image 4). Then, you need to do a 2-to-1 pivot to the CB to find the correct line of aim (see the white line in Image 4). Again, after you pivot, make sure the amount you moved the butt (“2x” in Image 4) is twice as much as the amount you moved the tip (“x” in Image 4). As demonstrated in the video, if the CB is farther away from the kicking rail, the process is the same, but the aim point will be slightly different. I know this shift-and-pivot technique sounds a little complicated at first; but, after a little practice, it is fast and easy to do. It is also very accurate for all CB positions. The process will become much clearer after you watch and try the examples in the video.



Image 4 Shift-and-pivot aim correction

One alternative to using the system and corrections presented above is to just practice kicks so much that you develop a feel for how much to adjust your aim for different angles and CB positions. But that could take a long time, and it still might not be as effective, especially when playing on an unfamiliar table.

I hope the videos help you become effective with the 2-to-1 rolling-ball kicking and banking system, including how to accurately make aiming adjustments, when required. Be sure to try everything at the table one step at a time if you want to start using this modified system during play.

Good luck with your game,
Dr. Dave



[NV L.33](#) – The DIAMOND SYSTEM You Must Know ... And How to Make it Better
[NV L.35](#) – Kicking System Aim Corrections and Parallel Shift Clarifications

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 Master 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.