
Supporting narrated video (NV) demonstrations, high-speed video (HSV) clips, and technical proofs (TP), and all of my past articles, can be accessed and viewed online at billiards.colostate.edu. The reference numbers used in my articles will 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.

This is my third article in a series dealing with the important topics of aiming, alignment, and sighting. In the last two months, we focused on aiming concepts and visual alignment issues. This month, we'll investigate sighting, which concerns where you should align your vision and focus to best visualize and achieve the desired aiming line for different types of shots.

Last month, I introduced the concept of “vision center” to describe the head and eye alignment, relative to the cue, that allows you to see a center-ball, straight-in shot as straight, with the tip appearing to be at the center of the cue ball (CB). The implication was you always want your vision center to be over the cue with a center-ball hit. This makes sense for a straight-in shot, but it might not be the best approach for all people and all shots.

Diagram 1 illustrates various options for sighting a pool shot. In Diagram 1a, the vision center (VC) is aligned along the cue, through the CB center to the center of the required ghost-ball (GB) position. This is the most conventional sighting method and seems to make the most sense. It is certainly the only reasonable option with a straight-in shot. However, with a cut shot, the GB center can be difficult for some people to visualize, especially with thinner cuts where it is well beyond the edge of the OB. For information and advice on how to develop ghost-ball visualization skills, see the [“aiming–ghost-ball” FAQ page](#) on my website.

Diagram 1b shows an approach where the sighting line is through the contact point (CP) on both the CB and OB. In **NV B.3**, Mike Page makes an argument that this sighting option is a reasonable choice, especially for thin cuts. By the way, Mike's video provides an excellent introduction and overview of aiming and sighting concepts. If you haven't seen it yet, you might want to take a few minutes to check it out.



normal video

[NV B.3](#) – Mike Page's aiming video (part 1, part 2)

Diagram 1c shows a sighting approach where you align the inside eye (i.e., the eye on the cut side of the shot) with the inside edge of the CB so you can more clearly visualize the ball-hit fraction (i.e., amount of ball "overlap") required for the desired angle of cut. This is the approach suggested by Gene Albrecht on his “Perfect Aim” DVD. He makes the argument that the inside eye is probably more instrumental in visualizing the amount of ball overlap, so this type of alignment might help some people. For most adults, the eye separation (pupil-to-pupil) distance is just a little larger than the diameter of the CB; so with this approach the cue will always be fairly close to being centered between the eyes. However, because of this pupil-to-pupil distance, there will typically be a slight head shift to the left for cuts to the right, relative to a centered alignment over the cue, and a slight head shift to the right for cuts to the left.

Diagram 1d shows a final sighting approach where the VC is aligned with the center of the CB and the desired CP on the OB. This approach certainly isn't recommended, but some people might do this subconsciously if they tend to focus on the OB CP when aiming and sighting. As Mike Page points out in NV B.3, any sighting line that is not parallel to the desired aiming line of the shot (i.e., the line of the cue) is problematic and should probably be avoided. Note that in Diagrams 1a-1c, the sighting line is in fact parallel to the aiming line for all three alignments.

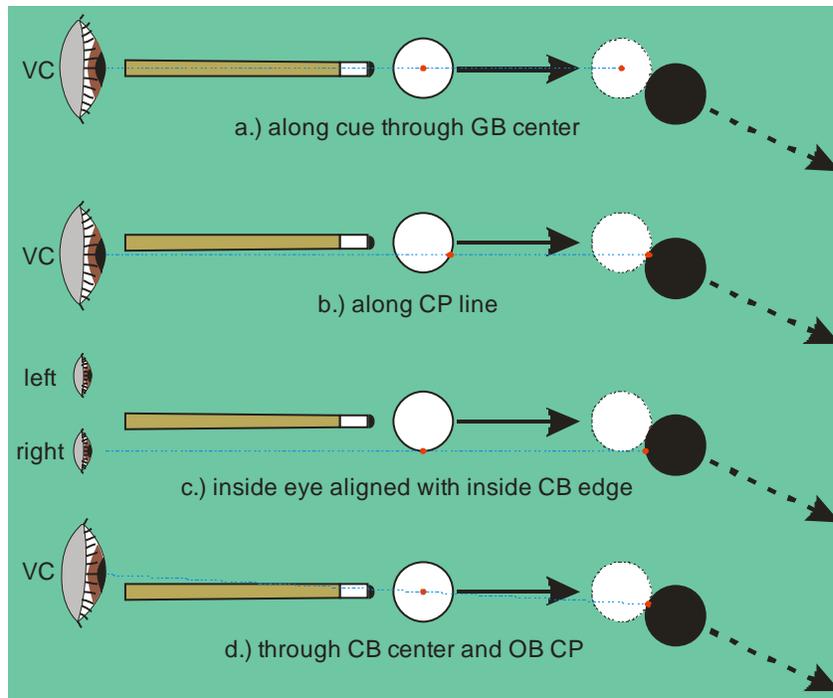


Diagram 1 Shot sighting options

Regardless of how you align and sight, it is of utmost importance to align and sight consistently. That way your brain is seeing the same picture for the same type of shot every time. This ensures that you learn to see shots, and how they vary, always from the same perspective. I personally think the best sighting choice for most people is the centered alignment shown in Diagram 1a. (Note that when using English, the cue isn't usually aligned with the aiming line of the shot because of the need to compensate for squirt. In this case, I think the best sighting line is along the desired aiming line of the shot, which is the desired CB direction, as opposed to the squirt-compensated line of the cue.)

Diagram 2 illustrates one potential problem with a non-centered alignment (e.g., along the CP-to-CP line). As I illustrated in [last month's article](#), sighting along a line offset from the cue can skew your perception of both cue direction and center-ball alignment. Diagram 2a shows the correct alignment, while 2b shows how this can appear to the shooter because of the offset VC. The perspective created with the VC to the right of the cue causes the line of the cue to be perceived angled to the right slightly, with the tip appearing to be left of center. As a result, as shown in Diagram 2c, the cue will typically be angled to the left slightly with the tip to the right of center (see last month's article for more information). (And to make matters worse, the off-center tip position creates a small amount of unintentional English that results in slight squirt, swerve, and throw effects.) Note that with the cue in the position shown in Diagram 2c, it can be perceived by the off-center sighting to being aligned properly, but it isn't! As shown on the right side of Diagram 2c, the resulting CP and cut angle will be off slightly (see the purple graphics).

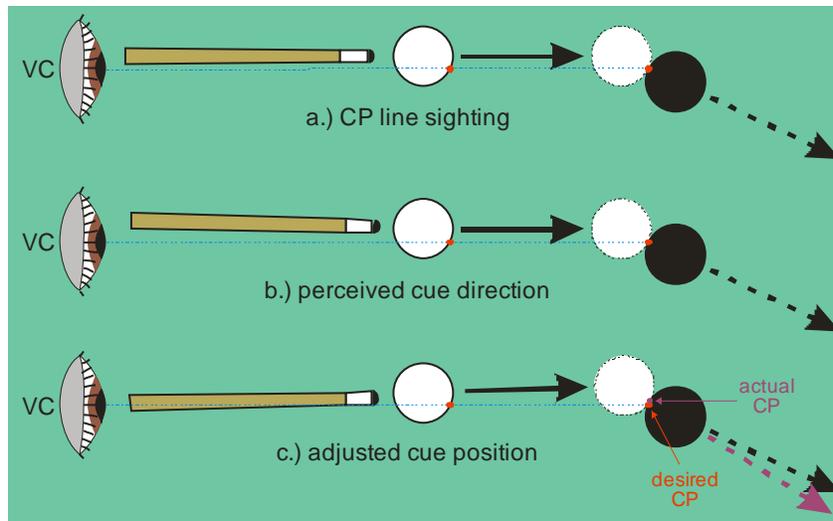


Diagram 2 Perception errors with off-center alignment

The perception issues pointed out in Diagram 2 for the CP sighting line (Diagram 1b) also apply to the other non-centered sightings (e.g., Diagrams 1c and 1d). In fact, with the sighting shown in Diagram 1d, both the aiming line and the line of the cue will likely be perceived incorrectly because the VC is aligned with neither. This is not an issue with the centered alignment shown in Diagram 1a. However, the centered alignment does require accurate visualization of the GB, which can be an issue for some.

A couple of years ago, I decided to take a poll on the AZB online pool forum to find out what different people think about sighting. Here is the question that was posed (with background information):

For a typical center-ball-hit cut shot, how should you align your "vision center?"

Participants – about 130 pool enthusiasts, players, and instructors – were asked to select one of the answers below. The percentage results are listed next to each response:

- a.) *along the cue through the center of the CB (conventional wisdom). [42%]*
- b.) *along the contact-point-to-contact-point line (as suggested in Mike Pages' aiming videos). [20%]*
- c.) *with the inside eye aligned with the CB's inside edge (as suggested in Gene Albrecht's "Perfect Aim" DVD). [11%]*
- d.) *it doesn't matter as long as you are consistent with your alignment and sighting. [55%]*

The poll results indicate that a centered alignment ("a") is generally preferred over a non-centered alignment ("b" or "c"). But, apparently, most people (55%) thought the choice doesn't really matter, as long as you are consistent. I personally prefer a centered alignment, and I've made a fairly strong case for this over the last two months, but with enough practice and consistency (in both alignment and sighting), it seems reasonable that the brain can learn to adjust and compensate for any alignment-related perception issues.

I hope you enjoyed and benefited from my series of articles dealing with aiming, alignment, and sighting. For more information and resources related to these topics, see the ["aiming"](#) and ["eyes and vision"](#) FAQ pages on my website. Next month, we'll look at cue tip contact point heights recommended for different types of shots.

Good luck with your game,
Dr. Dave

PS:

- I know other authors and I tend to use lots of terminology (e.g., squirt, throw, stun, ball-hit fraction, etc.), 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](#) on my website.
- I want to thank Jim Valasina. He graciously proof-reads my articles every month to help find errors and make suggestions. My article quality is better as a result of his efforts. Thanks again Jim!

Dr. Dave is author of the book, DVD, and CD-ROM: "[The Illustrated Principles of Pool and Billiards](#)," the DVD Series: "[The Video Encyclopedia of Pool Shots](#)," and the DVD: "[High-speed Video Magic](#)."