

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.

In recent online video [NV L.17](#), I discuss and demonstrate how I do video stroke analysis in our Billiard University (BU) Boot Camps, which we hold four times a year. The video analysis activity is a student favorite since it helps identify key deficiencies that, when corrected, can help bring student games to the next level. You can use our video analysis approach to try to diagnose and fix stroke issues on your own. The video also shows examples of common stroke flaws we routinely see in our Boot Camp students. Some examples from pros are also included. This column summarizes important techniques and advice from the video.

The [video stroke analysis document](#) linked in the YouTube video description illustrates the recommended camera views and describe the shots for the video analysis. As shown in **Diagram 1**, there are 3 shots filmed from 3 different directions. The first shot is straight draw recorded from the side, where the goal is to hit the 1 into the 2 and bring the cue ball (CB) back to the head cushion. You can use any camera to record the shots, including a smartphone on a cheap tripod. The second shot is straight follow filmed from behind, where the goal is to hit the 1 into the 2 and send the CB forward with enough speed to rebound off the end cushion back to the head rail. If you hit this shot nearly perfectly, the 1 will kiss back off the 2 and interfere with the CB; but this is very difficult to do, so consider it a challenge. The third shot is a cut into the bottom-right corner.

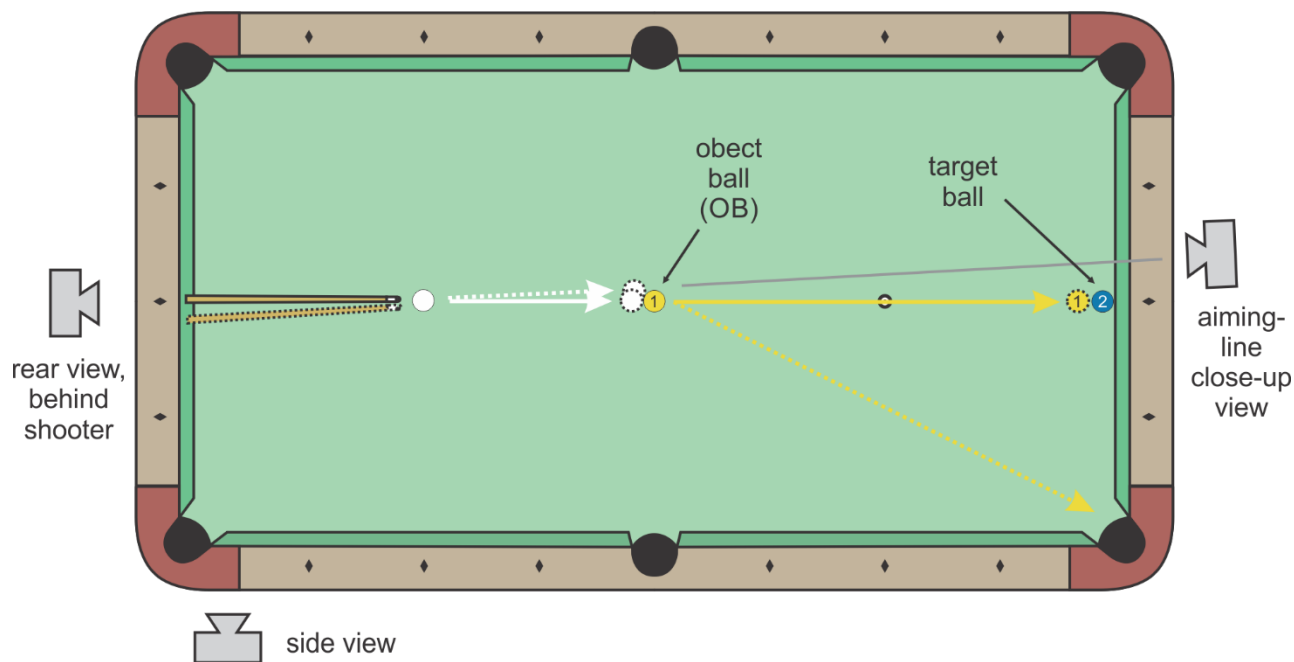


Diagram 1 Ball and camera setup

In the video, we demonstrate technique flaws we often find and fix with our Boot Camp students. If you don't know what to look for in video analysis, the [“best practices” check list document](#) linked in the YouTube video description can be helpful. With the side-view draw shot (see **Image 1**), the main things we look for are:

- Is the tip low enough and close to the CB at address? If not, you won't get enough draw.

- Is the forearm perpendicular to the cue at CB address? If your grip is too far forward, you won't have room for a complete follow through. If your grip is too far back, the tip might rise during the stroke into the CB.
- Is the cue as level as possible? If not, even a tiny amount of unintentional sidespin will cause CB swerve, sending the 1 offline.
- Is the backstroke slow and is the transition from the back to forward stroke relaxed and non-rushed? If not, you will have poor accuracy and consistency.
- Is the cue accelerated smoothly resulting in follow through? Stroke deceleration will result in poor speed control and consistency, and less draw.
- Does the grip remain relaxed during the entire stroke? Tightening your grip during the stroke will cause the tip to drop, which can result in a scoop shot. Tightening your entire arm during the stroke will cause the cue to rise, which usually results in less draw. Jerking the cue back after the hit can result in less draw since it involves tension.
- Does the head and body remain still during and after the shot? If not, it is unlikely your stroke will be straight.
- Does shoulder motion and elbow drop occur before CB contact? Dropping your elbow before hitting the CB will cause the tip to rise, resulting in less draw. There is nothing wrong with collapsing your shoulder and dropping your elbow after the hit, assuming your timing is consistent and not early.

The video shows examples of good strokes, including one from world-class pro Aloysius Yapp.



Image 1 Draw shot side view

With the rear-view fast follow shot (see **Image 2**), the main things we look for are:

- Is the forearm vertical at CB address? Having your elbow out with a pre-stroke “chicken wing” will make it difficult to stroke straight.
- Does the arm “chicken wing” out during the stroke? Moving your shoulder and elbow during the stroke into the ball can cause major problems with everything.
- Is there unnecessary slop in the grip? Having a gap between the cue and the web of your hand can affect stroke and tip contact point accuracy, especially if you tighten your grip at all during the stroke.
- Does the grip tighten during the stroke? This will cause the tip to lower, resulting in less follow distance.

- Does the wrist turn during the stroke? If so, it is unlikely the stroke will be straight.



Image 2 Follow shot rear view

With the front-view cut shot (see **Image 3**), the main things we look for are:

- Is there a methodical and purposeful pre-shot routine?
- Is the face square to the shot with the eyes level? Many students have their face non-square, with their nose pointing away from the shot. This can cause shot line perception errors, especially if the face angle is not consistent. Not having your eyes level can also cause shot line perception errors.
- Is the player's vision center aligned properly? Not having your [personal vision center](#) aligned properly relative to the cue causes shot-line perception errors. Having your vision center too far to your left usually results in the CB going right. And having your vision center too far to your right usually results in the CB going left. For more information and help, see the videos and other resources at the link in the YouTube video description.
- Does the player "aim while standing?" Aiming when down in your stance, instead of while standing above the shot line, is usually not very effective.
- Does the player drop their head straight down into the stance? Not dropping the "shot picture" straight down into your stance usually results in bad alignment and aim. Focusing on the CB during the drop (instead of the OB) makes it much harder to arrive at the correct aim and alignment in the stance.
- Is there a good eye pattern? Having a rushed eye pattern with no settled focus on the OB before the stroke can hurt accuracy and consistency. Focusing on the CB before and during the final stroke is usually less effective than OB focus for most people. Moving your eyes during or right after the hit to see where the OB is going can often result in pre-hit stroke steer.

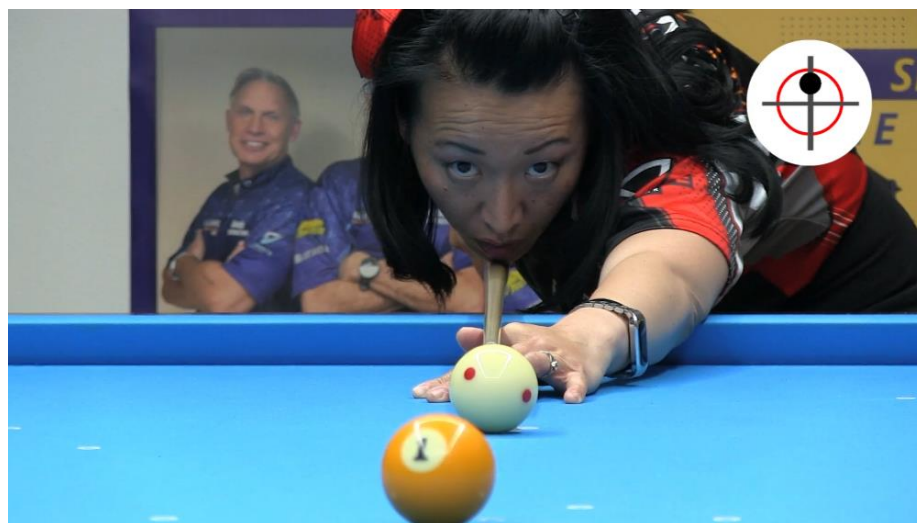


Image 3 Cut shot front view

I want to thank pro players Aloysius Yapp and Sharik Sayed for letting us use their shot clips in our video. We hope this video helps you do your own stroke video analysis and find possible flaws in your mechanics that might be hurting your game. Lots of help with improving your fundamentals can be found via the [online tutorial](#) linked in the YouTube video description. And if you want to raise your game to the next level, consider joining us for an upcoming [BU Boot Camp](#).

Good luck with your game,
Dr. Dave



NV L.17 – Stroke Video Analysis ... How to Find and Fix Technique Flaws

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.