

“VEPP – Part III: Wagon Wheel Drills”
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ILLUSTRATED PRINCIPLES

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. 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.

This is my third article based on the “[The Video Encyclopedia of Pool Practice \(VEPP\)](#),” a five-disc instructional DVD series I recently created with fellow BD columnist Bob Jewett. VEPP is an organized and methodical training program and pool workout. It teaches you how to develop, assess, and track progress of skills for all aspects of your game. An outline of the entire VEPP series and video excerpts from each DVD can be viewed online at: dr-dave-billiards.com/vepp. In the last couple of articles, I introduced the series and covered some fundamentals and draw shot drills from the first disc. This month, we’ll look at a useful “wagon wheel” drill from Disc II: “[VEPP II – Position Control and English](#).”

“Wagon wheel” drills are very useful to help you practice and develop cue ball (CB) control skills. **Diagram 1** illustrates a common example. The name comes from the fact that, for a given shot, the CB can be controlled to radiate out in a wide range of directions like spokes on a wagon wheel. Ted Brown was the first billiards author to use the “wagon wheel” phrase. The goal of the drill in the diagram is to pocket the object ball (OB) and control the CB direction and speed to gently hit each of the target balls (balls 1 through 11) along the rails. You have CB in hand for each target so you can create different cut angles. One way to practice is take as many attempts as necessary to hit each target. Alternatively, you can score the drill by giving yourself up to three attempts at each target. You get 3 points for success on the 1st attempt; otherwise, you get 2 points for the 2nd or 1 for the 3rd. **NV C.5** demonstrates the entire drill and suggests various techniques and approaches that can help you improve your CB control.

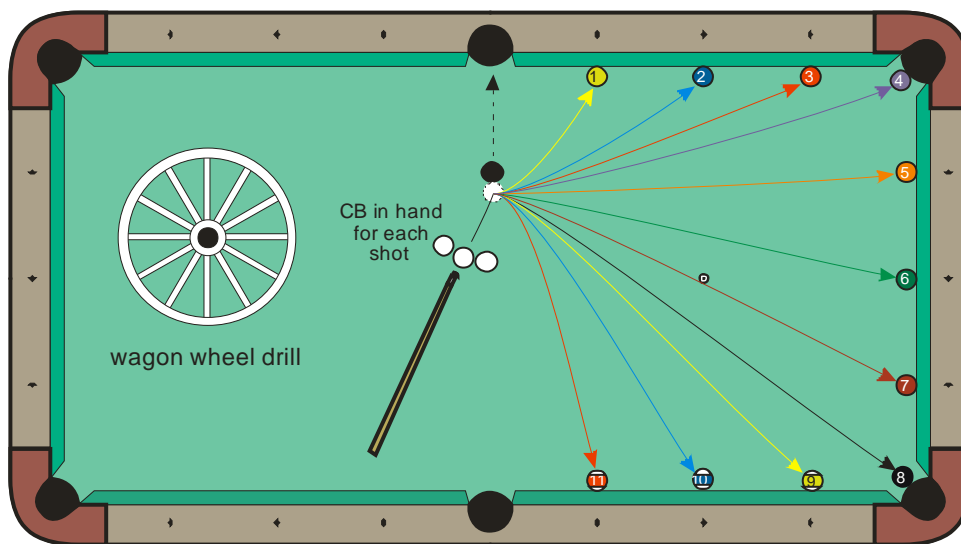


Diagram 1 Wagon wheel drill

With the first two target balls (1 and 2), you need to use a fairly full hit with a rolling CB, varying the cut angle slightly for each ball. There is actually a system you can use to help decide where to place the CB to achieve the desired CB direction. It is called the 3X system and states that for a fairly full hit (> ¾-ball hit), the

CB will deflect at an angle three-times the cut angle (see my [November, 2011 article](#) for more information and examples).

For target balls 3 and 4, you can place the CB so the natural-angle direction heads directly to the target for a rolling-CB shot. Remember the 30° rule? It states that a rolling CB deflects by very close to 30° for a wide range of cut angles between a ¼-ball and ¾-ball hit. As illustrated in **Diagram 2**, if you point one finger of the 30° rule peace sign in the desired target direction, the other finger will indicate the line along which you want to place the CB. If you then pocket the OB with a rolling CB, the CB will head in the desired direction. **NV C.5** demonstrates this technique for both the 3 ball and 4 ball. Changing the CB placement changes the natural angle direction for the shot.

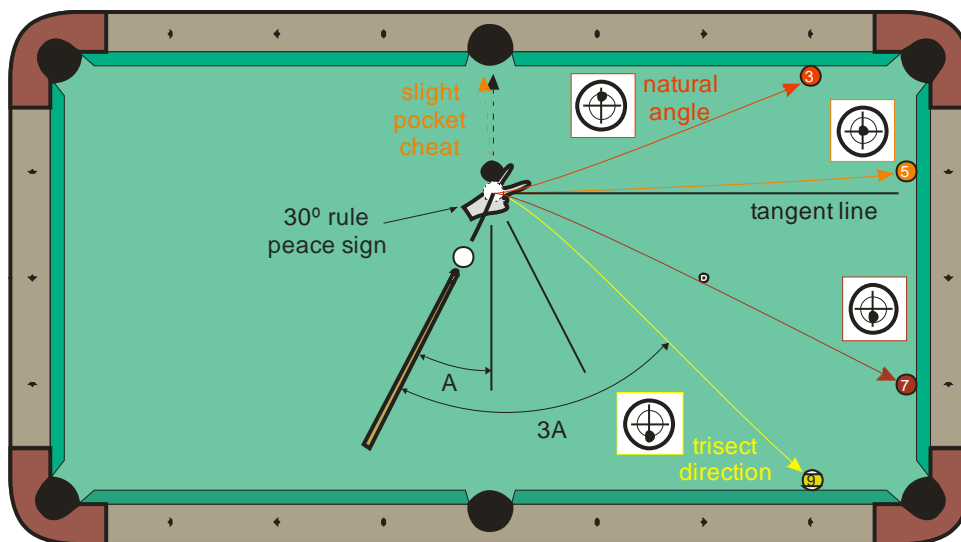


Diagram 2 Useful CB reference directions

The 5-ball target is close to the tangent line, so stun (no top or bottom spin at the OB) can be used with slight pocket cheat to the left (see Diagram 2). You can use whatever cut angle feels most comfortable in terms of shot speed and the difficulty of pocketing the OB. An alternative to the stun shot is to shoot for center pocket and allow the CB to pick up slight forward roll. For balls 6, 7, and 8, we can use the same cut angle and just use an increasing amount of backspin for each ball. Diagram 2 illustrates the 7 ball shot, which requires about half of maximum draw.

For the remaining balls, we can use good-action draw and apply the trisect system to help us choose an appropriate CB position (and cut angle) for each shot. The trisect system predicts that for good-action draw, with cut angles less than about 40°, the final CB direction will be 3-times the cut angle away from the original CB direction (see the [trisect system FAQ page](#) on my website for more information and demonstrations). Diagram 2 illustrates the trisect system applied to the 9 ball shot. Because the cut angle (A) trisects the total angle to the 9 ball (3A), good-action draw will get the job done. **NV C.5** illustrates how the system can also be applied to the 10 ball and 11 ball shots, using different CB positions (cut angles) for each.

The tangent line, natural angle, and trisect references are very useful for predicting and achieving CB direction control. If you are weak in these areas or want additional information and demonstrations, check out the [position control FAQ page](#) on my website.

On the DVD, we show an alternative wagon wheel drill where you use a fixed CB position for each shot (i.e., the cut angle is the same for each shot). This will limit the range of targets you can reach. For example, with a ½-ball hit, the natural-angle and trisect directions would limit you to hitting only balls 3 through 9 (assuming you don't attempt to use an elevated cue and masse effects).

As with all of the drills on VEPP, you should record your scores and track your improvement over time. The "[How to Use VEPP](#)" document on the VEPP website contains some sheets to help with this. Scores are useful for assessment and to provide a challenge. You can also use them to set goals for future improvement.

I hope you enjoy and benefit from my series of articles featuring drills from the "[Video Encyclopedia of Pool Practice \(VEPP\)](#)." Example clips from the second VEPP DVD can be viewed on the [VEPP website](#) or at billiards.colostate.edu under **NV C.5** through **NV C.8**. Next month, we'll look at some additional CB control drills from the second disc.

Good luck with your game,
Dr. Dave



- [NV C.5](#) - Wagon wheel cue ball control drill, from VEPP II
- [NV C.6](#) - Target practice for position control, from VEPP II
- [NV C.7](#) - Center-table position-off-hanger drills, from VEPP II
- [NV C.8](#) - Line-of-balls position control drill, from VEPP II

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](#) on my website.

Dr. Dave is author of the book, DVD, and CD-ROM: "[The Illustrated Principles of Pool and Billiards](#)," and co-author of the DVD Series: "[The Video Encyclopedia of Pool Shots \(VEPS\)](#)" and "[The Video Encyclopedia of Pool Practice \(VEPP\)](#)."