

Follow and Draw Systems

by BOB JEWETT



WHEN YOU ARE learning pool, after you have control of the object ball direction, the next thing to master is the direction of the cue ball after contact. In a previous column, I called on the Pythagorean theorem to explain why the initial path of the cue ball is at a right angle to the path of the object ball. This column offers some systems for planning how follow and draw will bend the cue ball's path.

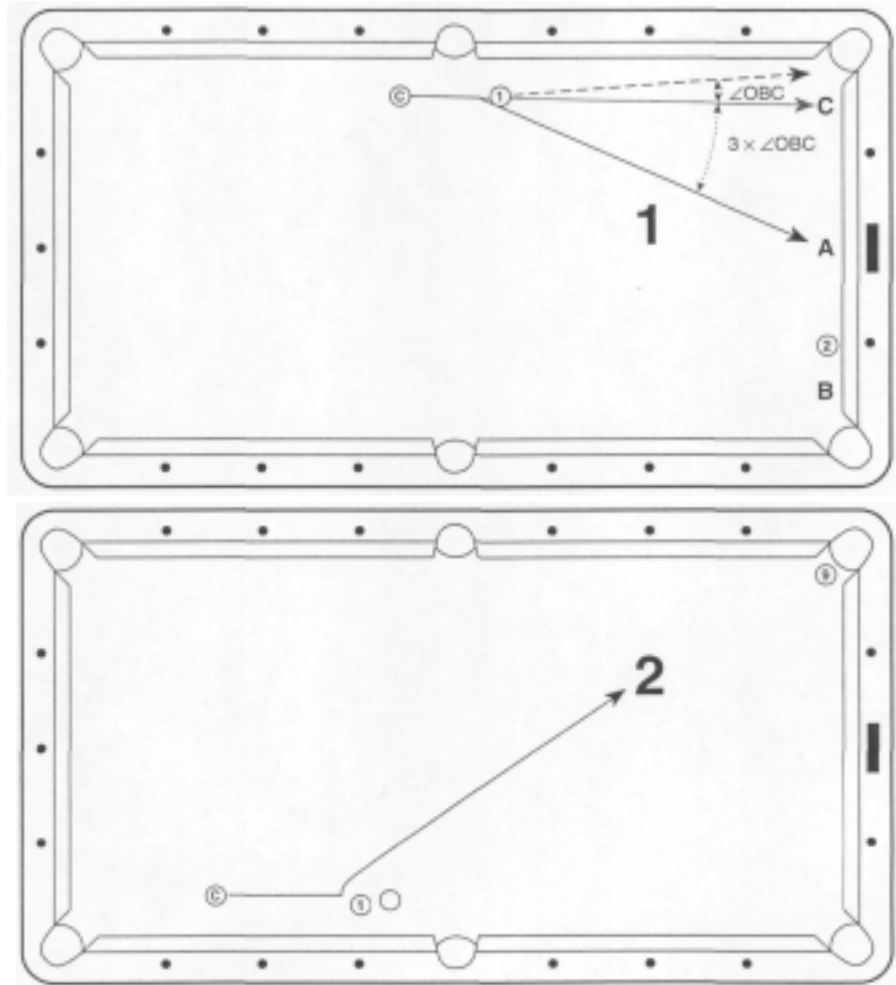
In Shot 1, the plan is to pocket the 1 ball and follow forward for the 2 ball. The problem is to determine whether the cue ball can be taken to the left side of the 2 for an easy shot (A) or if the much more difficult position on the "short side" at B is needed.

The system to use here we'll call the "triple-angle follow system." For nearly full shots like this, take the small angle of the object ball cut ($\angle OBC$), triple it, and the total is how far out the cue ball is deflected ($3 \times \angle OBC$). In Shot 1, the initial cue ball path goes towards C on the end rail. This is half a diamond from the pocket. If the object ball is pocketed, the cue ball will go towards a point three times that distance to the right. For this simple shot, that would be towards point A, one-and-a-half diamonds to the right of the initial cue ball path.

You have to make sure of several things for this system to work well for you. The cut angle must be small. The cue ball must be rolling smoothly on the cloth, which will happen immediately if you hit about one tip above center. The cue ball and the object ball must be the same weight and fairly clean. As with any system, practice!

How accurate is this system? A lot depends on your pocketing accuracy. If you miss the center of the pocket by half a ball, the cue ball will land a ball and a half from the expected point. If the cue ball is heavy, like some tavern balls, it will drive through straighter, and you'll find a smaller number, maybe 2.5 or 2, must be used instead of 3 to get the direction precisely.

A second follow system isn't a system so



much as a guide post. This is the half-ball follow angle, which has been discussed by Robert Byrne in his column and his *Advanced Techniques* book. In Shot 2, the best choice at the 9 ball is to play a carom, sending the cue ball off the 1 to the waiting 9.

Use this technique: Aim for a half ball hit on the 1 ball, with the cue stick directed at the left edge of the 1. Hit the cue ball high and shoot only hard enough to be sure to get to the 9. The most common mistakes are shooting too hard and playing with draw or center.

For your practice, set the 1 a ball's width off the rail and place the cue ball one-and-

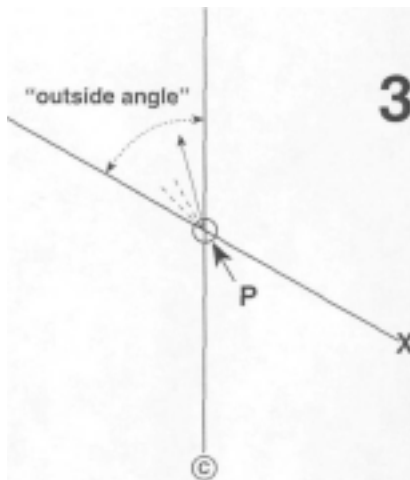
a-half ball's width off, so you will be driving the cue ball parallel to the long rail. Move the 1 ball forward and back until the carom seems automatic. Note carefully the angle of deflection of the cue ball. In theory it will be close to 37 degrees, but this will change if the cue ball is not the same weight as the object ball.

The real importance of this shot comes from the stability of the deflection angle. While the object ball can be hit between three- and one-quarters full (about 15 to 45 degrees of cut), the cue ball path will change by only a few degrees. While there may not always be a 9 ball waiting for you at the half-ball follow angle, there will

often be position or an easy safety.

Suppose the needed angle is not quite 37 degrees. To make the cue ball go straighter through, hit either more or less ball; how much requires judgment gained from practice. Try Shot 2 with the cue ball closer to the rail than for the ideal angle.

There are two ways to make the cue ball go wider. A little draw, or even center ball will bring the cue ball out some, but this is hard to control. It is easier to hit the cue ball harder so it slides some to the left before taking a path parallel to the soft shot. Try Shot 2 with the 1 ball a diamond farther down the table.



Knowledge of the half-ball follow angle is essential for position play. Practice this shot until the information is etched into your brain.

Minor adjustments in either direction can be achieved by adding side spin to the follow. Begin in the ideal position and see what left and right do.

There is a draw system that is a lot like the follow system; in fact, it is based on nearly identical physics. Suppose you have a situation like Shot 3. You want to draw the cue ball off the object ball towards point X. There are two equivalent aiming systems; see which is most accurate for you.

For the first system, take the "outside angle" between the two starting lines of the shot. Divide it in two, and in two again. Drive the object ball along the line

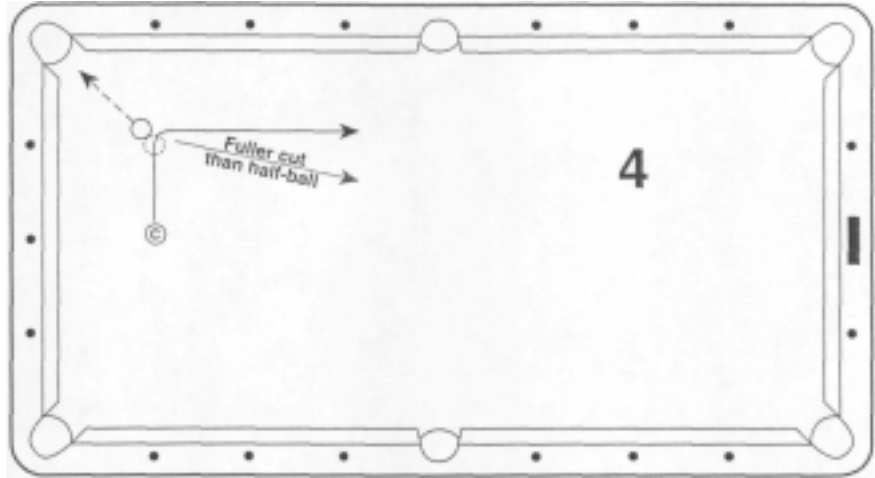
closest to the path that goes straight-ahead, and the cue ball will draw back towards X.

The second way to aim is to shoot towards point P on the object ball, which is midway between the two major lines. Note that this is not where you will hit the object ball; the contact point will be the same as in the first method.

The second aiming system, also known as the "bisector point" system, is at least 80 years old; it is in *Daly's Billiard Book*, but is explained better in Willie Hoppe's *Billiards As It Should Be Played*.

This draw system requires very lively draw and is best if the cue ball is close to the object ball. The cut angle must not be too wide. If you can't pull the cue ball back as much as expected, you will need to adjust the system by shooting somewhat fuller.

There is a draw half-ball shot that is similar to the follow half-ball shot. In Diagram 4, a half-ball shot with draw pockets the object ball and bends the cue ball back as it goes up the table. For a typical amount of draw, the final path is at a right angle to the initial line of the cue stick. Of all the systems mentioned, this one is the



most difficult to control, but it does provide a reference point.

For example, if you have a fuller-than-half-ball shot, you'll know you can bring the cue ball back behind the right-angle path.

These systems all require either full follow or full draw. Of course, you can obtain any angle in between by using spin be-

tween these two extremes, but there is no good system for these gray areas. Learn to rely on your feel and use the systems to know where the boundaries are.

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