

An Experiment In Curve

by Bob Jewett

DO YOU REMEMBER the last time that the path of an object ball was just barely blocked by another ball? If you could make the object ball curve, even a little, the shot would be simple. Without any curve, you have to worry about cheating the pocket or trying some other difficult shot.

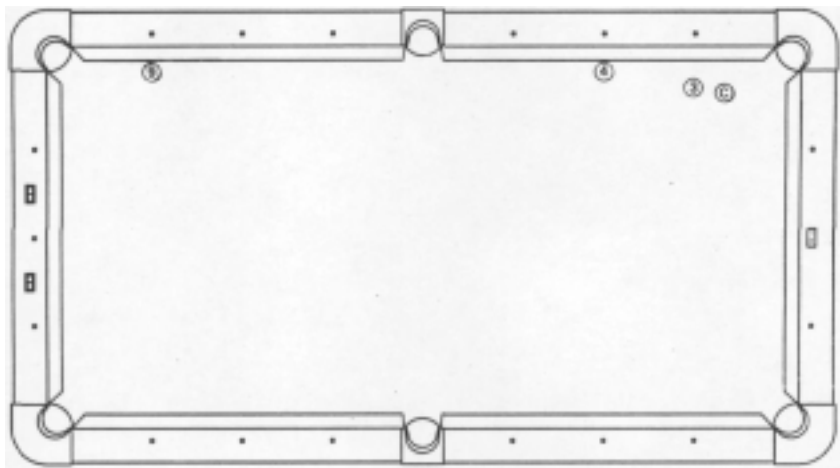
Shown in the diagram is a position from 9-ball. The 4 and 9 are both frozen to the rail and the 3 is exactly one ball off the rail. If the 3 is shot to just miss the 4, and it goes in a straight line, it will also miss the 9 and have no chance of going in the corner pocket. The 3-4-9 combo is possible, but playing rail-first to kick the 3 in the side is at least as likely. If you could make the 3 curve a little to the right, it could clear the 4 and drive the 9 straight into the corner.

To make the 3 curve, you have to get some *masse* on it. To get a feel for how much is needed, remove the cue ball and hit the 3 ball directly using right draw and a slightly elevated cue. Aim to just miss the 4 and shoot just hard enough to make the 9. To get the best slow curve, try using slightly more draw than right — what you might call 5 o'clock English. See how level you can keep your cue stick; it should be no more than 2 inches above the rail.

Before you get any further into the experiment, make sure that there is no significant table roll. If you shoot the 3 without English just hard enough to end even with the 9 ball, it should stay within half an inch of the line of aim. More roll will make the results hard to interpret, so you must level the table or find one that's already true enough.

Now it's time to start the actual experiment. You have to discover the best place for the cue ball and what English, elevation and speed to use. There are at least three plausible (if not necessarily accurate) approaches:

1. To get right *masse* on the object ball, you need to hit down on it so the cue ball makes a slight jump. Place the cue ball as shown and use left draw, with about 30 degrees of elevation.



2. Transferring right English to the 3 will be enough to make it curve. Use center left from the position shown with a level cue.
3. To transfer right *masse* to the object ball, use right *masse* on the cue ball. The cue and the 3 stick together a little at the instant of contact. Any rotation of the cue ball around their common axis (the line joining the centers of the two balls) will be transferred directly to the 3. This is just the opposite of normal transfer of English, which works like gears. Place the cue very close to the 3 and use right English with about 60 degrees of elevation.

Please note that I'm not saying how many of these techniques will work. At least two of them are very questionable. If you don't have immediate success, don't get frustrated. For each way you try, be careful to set up the shot consistently. Make sure the balls are clean because a spot of chalk on a ball can cause very bizarre spin. Adjust your aim, or the position of the cue ball, so the 3 barely misses the 4. Once you get the aim right, take five or 10 shots and note if there is any curve toward the 9. If there is curve, the 3 will hit the 9 — note how full.

Please send me your results in care of *Billiards Digest* at 200 S. Michigan Ave., Suite 1430, Chicago, IL 60604,

or fax (312) 341-1469. For each technique you try, give the position of the cue ball and speed, elevation and English used, and how much, if any, of the 9 you managed to hit. A negative result is still useful, since it shows which technique doesn't work. In a future column, I'll summarize the results. The two readers who send in the most complete results will get a free one-year subscription to this magazine.

One last point: There is a way to shoot the shot without curve. If the cloth has lots of bounce, the 3 can jump over the 4 with a hard, slightly elevated stroke. The cue ball needs to be in a straight line with the 3 and the 9, or it may jump the rail.

(EDITOR'S NOTE: Bob Jewett is still receiving data from the experiment he described in the last issue and wishes to postpone publishing the results until he has all the information. If you performed the experiment and haven't sent in your results, there may still be time for Jewett to use them if you hurry. His discussion of the results is scheduled for a future issue. Thanks to everyone who participated.)

Bob Jewett was 1975 Association of College Unions — International champion and is the author of a book on artistic billiards. Jewett currently resides in Palo Alto, Calif, where he is a research scientist for Hewlett Packard Co.