



The Rack

It's more than a torture device.

One way or another, a major change is coming to pool. The advent of the Sardo Tight Rack is forcing players and officials to re-examine what a rack should be and how to deal with a nearly perfect framing of the balls. At least one rule has already changed, although you might not have noticed.

Let's begin by asking a question: Should the rack be tight? The norm for many lazy and/or cheating rackers is to leave a sloppy, loose grouping of balls on the table, resulting in a break that is unpredictable and often ineffective. The rules require — and I think it's only fair — that the balls be racked as tightly as possible, but how tight is that?

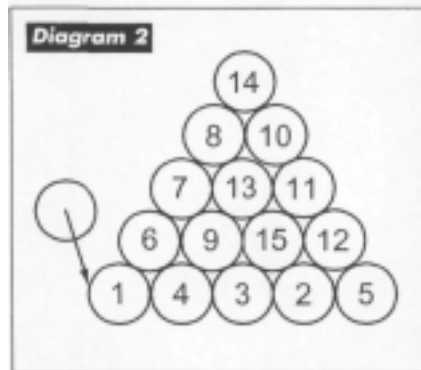
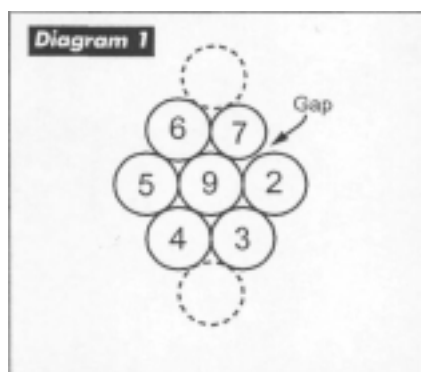
It is not theoretically possible to freeze all the balls in a rack. Here, we're talking about real pool balls that are all slightly different sizes. A new set of good balls will be the same diameter (and round) within one thousandth of an inch. The rules permit five times that deviation in each ball. With real balls, it is usually impossible to get everything frozen. Start with the 9 ball in a 9-ball rack. Assemble the rack by putting the 9 in position, and then freezing the 2 ball to its side. Freeze the 3 ball to those two, and so on around the 9, forming a ring of six balls with the 9 in the middle, as shown in **Diagram 1**. With the addition of each ball, there is no choice about where to put it, since it must be frozen to the two other balls. Suppose the 7 ball is a little small, but all the other balls are perfect. The result is as shown. The 7 can be frozen to the 9 and 2, or the 9 and 6, but it cannot be frozen to all three of its neighbors.

Suppose the 7 was larger than the other balls. Then the hole the 7 is supposed to fit in would be too small, and while you could freeze it to both the 6 and 2 balls, it could not also touch the 9 without forcing some ball away from the 9.

You complete the rack by adding the 1 ball and the 8 ball at top and bottom, and both of those can be frozen easily to the 6-7 and the 3-4, respectively. This means that for any normal set of pool balls, it is possible to rack nine balls with only one gap, and because balls are never exactly the same size, it is almost certain that there will be one gap among the balls around the 9. If there are two gaps, the rack could be better, and it is reasonable to ask the racker to try

again.

In other games, the number of gaps varies. At 6-ball, you can obviously always do a perfect rack: start with a triangle of three balls, and then put the "corners" on — everything can be frozen. At the 15-ball



games, you can work from our 9-ball rack by putting three-ball "corners" against the 8-4-5 and the 8-3-2 sides. With a little thought, it's clear that each set of three balls might require one additional gap, giving three required gaps in any 15-ball rack.

Pat Fleming has pointed out a way to get rid of these "necessary" gaps that uses the fact that most pool balls aren't round. On many sets of old balls, the "eyes" of the balls — where the numbers are — bulge out. In our example above, you might make the 7 ball "wider" by rotating it until its eyes are against the 6 and 2 balls. If that doesn't quite close the gap, you could rotate the eyes on the other balls into service. This is all a little far-fetched, but it's something to keep in mind if you just can't get a normal rack tight.

Until the recent introduction of the Sardo

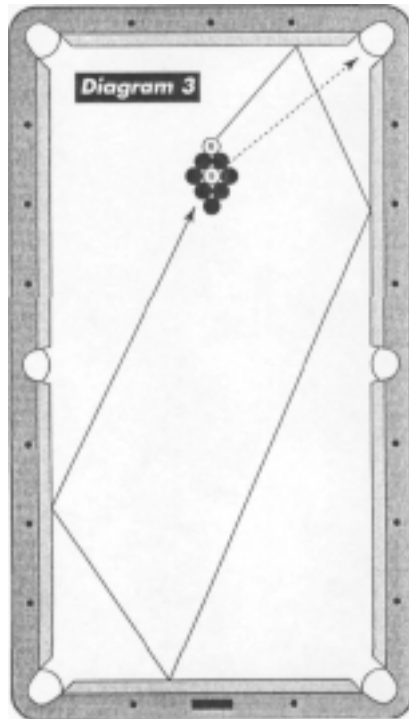
rack, the chance of getting a rack with minimum gaps by using a wooden triangle was nil. On new cloth and with a good set of balls, you can get close, and players often remark on how well the balls break under such conditions. As the cloth wears and gets small craters in the rack area, and especially as the rackers move the rack around and spread out the craters, the chances get slim, and soon Slim leaves town.

Several things help the Sardo rack produce nearly perfect racks. In tournaments, the cloth is marked to show exactly where to put the edges of the rack, so the chance of "crater spreading" is reduced. Compared to the typical wood triangle, it is far more accurate mechanically — just think about how often you have to turn a standard triangle to find the one good corner. Finally, the top part of the rack that comes down to position the balls pushes them gently together, rather than forcing them into specific positions, so any mismatched ball is accommodated as well as possible.

What happens differently with a near-perfect rack? At 14.1, the ideal break is for the two corner balls (the 1 and 5 in **Diagram 2**) to go to cushions and return to the rack with no other ball moving — a perfect rerack. With a good rack, this shot is impossible. As shown, the cue ball will hit the 1 ball into the 4. The 4 will move to the right and it will contact both the 9 and 3. The energy transmitted to the 9 will eventually emerge with the 10, 14 and 11 balls leaving the rack. If you want to do the perfect 14.1 break, just leave gaps between the 4-9, 3-15 and 2-12. If those balls are frozen, extra balls are guaranteed to move.

What happens differently at 9-ball? The first thing that a lot of players noticed with the new Tight Racks is that if you find the correct spot for the cue ball, one of the wing balls (5 or 2 in **Diagram 1**) is almost guaranteed to go in, even with a moderate speed (and well-controlled) break shot. For at least a year, the solution in tournaments has been to move the rack position so that the nine ball rather than the one is on the spot. This makes the wing balls much harder to make, as they must be driven more through the balls behind them.

I noticed a second difference in one of Allison Fisher's matches at the Hopkins' Super Billiards Expo this year. When she broke, the 1 ball reliably found the side



pocket. Try this yourself: break from the side cushion and hit the one ball nearly full. Test two cases, one with the front six balls

all frozen — it's always possible to get this — and one with the one ball slightly separated from the balls behind it. I think you'll find that a millimeter can make all the difference in the world to this shot. What was remarkable was not that Allison played the 1, since that is the most predictable ball to make with the "forward-spotting" rule in force. What caught my eye is that she played the shot at moderate speed and seemed to be playing position on the 2 ball. The routes of the other balls in the rack start to be predictable if the rack is the same every time.

A final difference at 9-ball is that the 9 almost never moves. Although the two balls in front of it will push on it, the two balls behind will take up the energy, just as for the middle ball in a three-ball combination. If the nine isn't kissed — and on many breaks it isn't — it will still be in place when the commotion dies down. This can lead to some interesting shots. At the recent Billiard Congress of America Open 9-Ball Championship at the Riviera Hotel & Casino in Las Vegas, Oliver Ortmann was playing Ernesto Dominguez, and he needed two more games for the match. On his break, the 9 stayed at home, as expected, and the back ball, shown as the 6 in Diagram 3, came four cushions directly at

the 9. In a minor miracle, the 6 hit the 9 just right to send it into the corner pocket. Tough luck for Dominguez; if any ball had touched either the 6 or 9, Ortmann wouldn't be "on the hill." Ortmann broke again, and as if it were on tracks, the 6 came around four cushions, hit the waiting 9 ball, and the match was over.

If we are going to accept tight racks at 9-ball, how should the rules change? Here's one possibility for your consideration: After the break, all balls that were made will spot, and the breaker gets the next shot. A 50-mph break will no longer be useful, but the knowledge and skill to play specific position on the 1 ball will be essential. The 1 ball could go back on the spot, since it would actually be a disadvantage to make a ball on the break. I think it would be a better sort of 9-ball.

If you would like to see what a very tight rack at 9 ball plays like, send me email (jewett@netcom.com) and I will send back a "PRN" attachment that will let you make your own racking template. You will need a computer printer and a paper-hole punch.

Bob Jewett is an Advanced-level Billiard Congress of America Certified instructor and was the National Collegiate Champion in 1975.