

BILLIARD STATISTICS

By Bob Mobile

The most important statistic in any game of billiards is a player's AVERAGE BALLS per INNING (Ave B.P.I.). It is this statistic and only this statistic that rates the true ability of a player to run balls, demonstrate pattern strategy and complete shots. The statistics of win versus loss are secondary and it is a player's average B.P.I that must carry the most significant weight in any handicapping system employed. The perfect handicapping system should strive for a near 50-50 chance for either player to prevail.

An INNING is defined as a player's turn at the table where that player attempts to make at least one shot- whether or not the turn ends in a safety. If a player goes to the table and plays only a safety, then that turn at the table is **NOT considered an inning**.

B.P.I. = Total Number of Balls Pocketed / Total number of Innings

Example: A player pocketing 100 balls in 25 innings has an average B.P.I. of 4.0

Once a player's B.P.I. is known, it is possible to calculate the player's probability of pocketing any one shot as follows:

Probability % = B.P.I. / B.P.I + 1

Example: The same player above that has a B.P.I. of 4.0 has a (4.0/5.0) 80% probability of pocketing any one ball.

From the probability of pocketing any one ball, it is also possible to calculate that same player's probability of running any number of balls using the formula:
 Y^x where Y is the percentage of making any one ball raised to the power of the number of balls for which the value of probability is desired.

Example: What is the probability for a player to run 8 balls in succession if the player has an 80% probability of making any one ball?

$Y^x = .8^8 = .1678 = 16.78\%$

OR

$.8 \times .8 \times .8 \times .8 \times .8 \times .8 \times .8 \times .8 = .1678 = 16.78\%$

(The result of multiplying fractions always turns out to be smaller than the smallest fraction in the equation.)

From the above it is interesting to note that as a player with a 9 BPI (90%) attempts to raise their probability of making any one ball by only 9% (to 99%), that same player would be required to raise their BPI by 90 balls to a BPI of 99! Therefore, it would appear that once a player has reached this level, they have also reached the point of diminishing returns. I guess that's one of the problems with being human!