

The Craps Guide

**A Simple and Effective Guide to PROFITING
(And, Of Course, Having FUN!)
From Craps, Online or Live, Anywhere In the World!**



Hi there! I have always loved the casino and have been an avid player of table games that, on the surface, seem to be purely influenced by chance. Craps is one of those games and I have done very well for myself playing this wonderful casino game. How? Because, even 'randomness' follows certain mathematical rules that can minimize your loses and maximize your wins. I thus decided it was about time to put my expertise into writing. I hope you enjoy reading "The Craps Guide". I guarantee that if you follow the rules laid out in this guide on a consistent basis (ie, don't play it once and decide that it doesn't work!) that you will profit too by playing the fun game of Craps for yourself.

Craps is one of the fastest action games that you will find in the casino and can certainly be a very exciting and emotional game. To succeed, however, you must follow the rules methodically. In other words, if you are losing, don't fall into the trap of "just one more bet..." Likewise, if you are winning, don't keep increasing your stakes because of some gut instinct that you want to "take advantage of your winning streak". Both of these situations are examples of letting your emotions rule you and, even if you occasionally get lucky by gambling on these emotional plays, they will, eventually, result in you losing in a very big way! Playing Craps successfully is a matter of following very simple rules, consistently, and has nothing to do with gut instincts. Yes, there will be days when you lose so be prepared for that. However, statistically, you will win more often in the long run than you lose, if you follow these rules carefully and stick to them!

This brings me to one final point. DO NOT gamble with money you cannot afford to lose. If you do so, it is pretty much guaranteed that you will make mistakes by making emotional decisions, rather than logical ones. These mistakes will cost you your hard earned money. In other words, if you come to the table with money that you are prepared to lose, you will have more fun, be able to follow the rules correctly and will almost certainly profit more. If you come to the table desperate, because you are gambling with your rent or grocery money, you have a gambling addiction problem and you will be out of control at the table and eventually lose everything. If this sounds like you then please, please, SEEK HELP! Help can be found at <http://www.gamblersanonymous.org>. There are also many other organizations out there to help you control your gambling habit before it controls you!

Anyway, here's To Your Good Fortune!

So, What Is "Craps" Anyway?

Casino Craps (or Bank Craps) is an extremely fast paced dice game. It is, perhaps, one of the most exciting games to be found at the casino. Indeed, it is certainly common to hear yelling and shouting at a Craps table. It is played on a purpose-built table and two dice are used. The dice are made using very strict standards and are routinely inspected for any damage. As a matter of course, the dice are replaced with new ones after about eight hours of use, and casinos have implemented rules in the way a player handles them.

The player must handle the dice with one hand only when throwing and the dice must hit the walls on the opposite end of the table. In the event that one or both dice are thrown off the table, they must be inspected (usually by the stickman) before putting them back into play.

The Craps table can accommodate up to about 20 players, who each get a round of throws or at 'shooting' the dice. If you don't want to throw the dice, you can bet on the thrower. Several types of bets can be made on the table action. The casino crew consist of a stickman, boxman and two dealers.

Craps developed from a simplification of the Old English game "Hazard". It's origins are highly complex and may date all the way back to the Crusades before later being influenced by French gamblers. What was to become the modern American version of the game of Craps was brought to New Orleans by Bernard Xavier Philippe de Marigny de Mandeville and the game was first known as "crapaud" (a French word meaning "toad").

Craps is a great casino game and has several advantages over the other casino table games. First, the amount of your bets and where you place them has no effect on other player bets. Thus, you are not pitting your skill against the other players but only against the game itself. Secondly, a bet is not necessarily won or lost on a single throw of the dice. Indeed, there are many value bets where you place the bet once and it will sit on the table until such time as it's conditions are met which may be now or ten throws down the road. Another unique feature of Craps is that you can place a bet under favorable circumstances but, in many cases, remove the bet from the table again if those circumstances change.

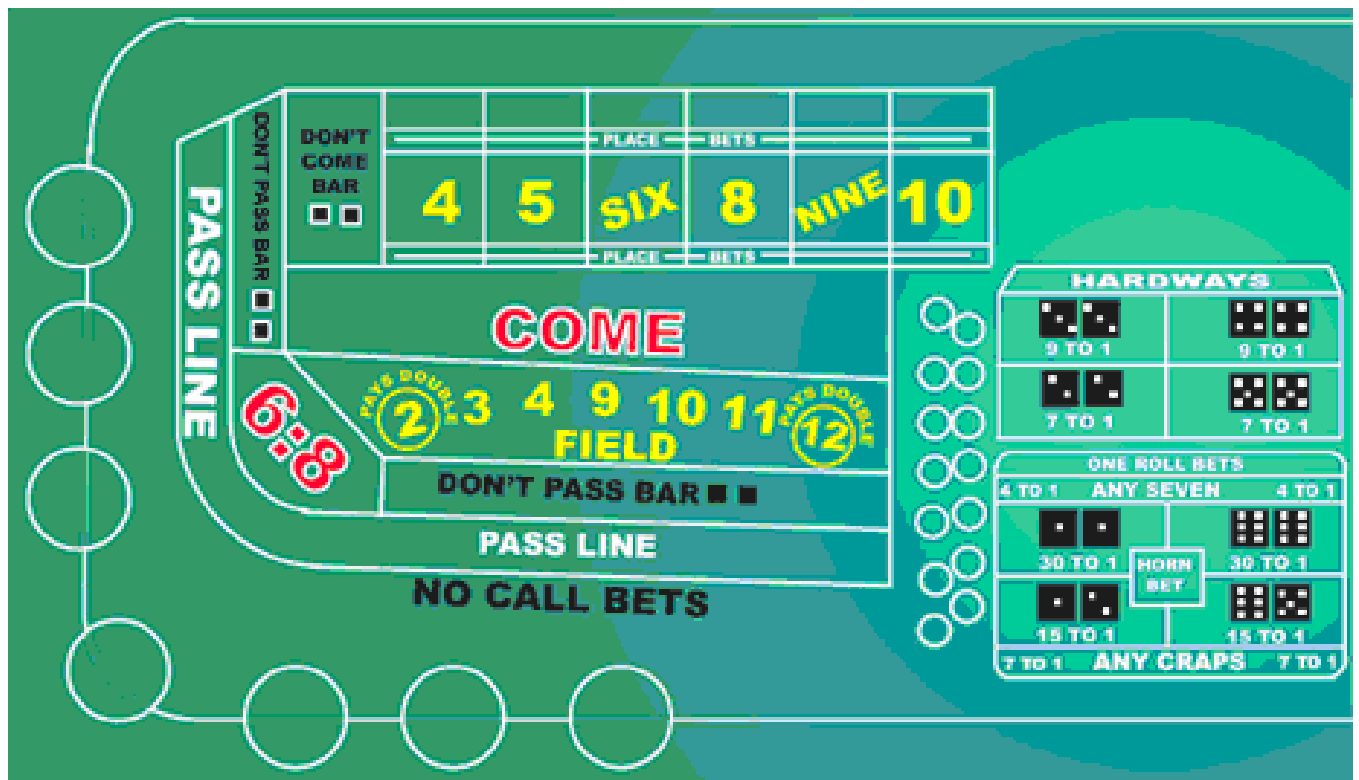
Table Layout

There are three main sections on the Craps table. The first of these is the main play area called the **Line Bet** area. It has the "Pass Line", "No Pass Bar" and so on. A mirror image of this area normally appears at both end of the table so that players can easily reach it.

The second area is the **Single Roll Bets** area that has such bets as "Any Seven", "Horn", "Any Craps" and so on. This is also part of the **Center Bets** area.

Finally, there is the **Multi Roll Bets** or **Hardways** area where the result is normally resolved over the course of several die rolls. This is also in the **Center Bets** part of the Craps table. This area would include bets on rolling a certain number the 'hard way'. For example, if you roll a total of '6' by having two 3's show up, this is called a 'hard' roll. On the other hand, having any other combination, such as 1-5 or 4-2, is called an 'easy' roll. Just to confuse you, Multi Roll Bets can also be found mixed in the middle of the Line Bet area.

Standard Craps Table Layout



The Basics



A live casino Craps table is run by four casino employees. The first is the **Boxman** who guards the chips, supervises the Dealers and handles 'coloring' players (providing players with chips and exchanging small chip denominations for larger denominations in order to preserve the chips at a table). There are also two **Base Dealers** who stand to either side of the Boxman and collect

and pay bets. Finally, the **Stickman** stands directly across the table from the Boxman and takes bets in the center of the table (hard ways, yo, craps, horn etc), announces the results of each roll, collects the dice with an elongated wooden stick, and directs the Base Dealers to pay winners from bets in the center of the table. Each employee makes sure the other is paying out winners correctly. Occasionally, during off-peak times, only one Base Dealer will be attending the table, rendering only half the table open for bettors. Alternatively, one of the two Base Dealers will assume the role of the Stickman.

Players take turns rolling two dice. The player rolling the dice is called the "Shooter." Other players at the table will make bets on the Shooter's dice rolls. The game is played in rounds, with the first roll of a new round called the "come-out roll". The second round resolves with a point being rolled or a seven.

To begin, a player wishing to play as the **Shooter** must bet at least the table minimum on either the "Pass" line or the "Don't Pass" line (pass and don't pass are sometimes called "Win" or "Right" and "Don't Win" or "Wrong" bets for the outcome of a shooter's round). The right to roll the dice is traditionally rotated clockwise around the craps table. A player next in turn to become the Shooter may refuse the dice, but can continue to bet on the Shooter's rolls. In that case, the dice then pass onto the next player willing to become the Shooter.

Once the Shooter is selected, he/she is then presented with multiple dice (typically five) by the Stickman, and must choose two to roll with. The remaining dice are returned to the Stickman's bowl and are not used.

The Dealers will insist that the Shooter roll with one hand and that the dice bounce off the far wall surrounding the table. These requirements are meant to keep the game fair (preventing switching the dice or making a "controlled shot"). If a die leaves the table, the Shooter will usually be asked to select another die from the remaining three but can request using the same die if it passes the Boxman's inspection. This is because many players are superstitious about changing dice in the middle of a play. Regardless, these requirements are used to keep the game as fair as possible (and reduce the chance of loaded dice).

First, the Shooter makes a "**come-out roll**" with the intention of establishing a **Point**. If the Shooter's come-out roll is a 2, 3 or 12, it is called "craps" (the shooter is said to "crap out") and the round ends with players losing their "Pass Line" bets. On the other hand, a come-out roll of 7 or 11 is called a "natural," resulting in a win for "Pass Line" bets. Either way, the come-out roll continues for the same shooter until a point is established. If one of the numbers 4, 5, 6, 8, 9, or 10 are rolled on the come-out, this number becomes the "point" and the come-out roll is now over. The dealers will move an "**On**" **button** to the point number which identifies that point number to all players at the table. The Shooter will now continue rolling until either that point number reappears or a seven is rolled. If the shooter is successful in rolling the point number, the result is a win for the "Pass Line". If the shooter rolls a seven (called a "seven-out"), the "Pass Line" loses. A seven-out ends the round with the dice being passed clockwise to the next player who wishes to become the new shooter.

A player wishing to play Craps without being the shooter should approach the Craps table and first check to see if the dealer's "On" button is on any of the point numbers. If the point number is "Off" then the table is in the come-out round. If the dealer's button is "On", the table is in the point round where some casinos may allow a pass/don't pass bet to be placed, but the player should check with the dealer. All **Single** or **Multi Roll Proposition Bets** may be placed in either of the two rounds. Between dice rolls by the Shooter, there is a period for Dealers to make pay outs and collect losing bets. When the Dealers are finished, players are then allowed to place new bets. The Stickman monitors the action at a table and decides when to give the Shooter the dice, after which no more betting is allowed.

Types of Craps Bets

As mentioned earlier, there are three types of bets that can be made in Craps. These are **Line Bets**, **Single Roll Propositions/Bets** and **Multi Roll Propositions/Bets**. Let's cover those in more detail below.



"Line" Bets

Pass Line (A)

This is the fundamental bet in Craps. A Pass Line bet is won immediately if the come-out roll is a 7 or 11. If the come-out roll is 2, 3 or 12, the bet loses (known as "crapping out"). If the roll is any other value, it establishes a point. If that point is rolled again before a seven, the bet wins. If, with a point established, a seven is rolled before the point is re-rolled, the bet loses ("seven out"). A pass line win pays Even Money (1-1)



Don't Pass Line (B)

A Don't Pass Line bet is a bet for the shooter to NOT make their point number (Shooter "crapping out" or "seven out") and is almost the opposite of the Pass Line bet. It loses if the come-out roll is 7 or 11 and wins if the come-out roll is 2 or 3. A 12 will normally draw (this depends on the casino — in some places a 12 will win and a 2 will draw); either way a player cannot lose if 12 is rolled. A draw (the word "BAR," printed on the Craps layout, means "Standoff") on 12 is done to ensure the casino maintains a house edge regardless of whether players are betting Pass or Don't Pass. If a point is established and that point is rolled again, the Don't Pass bet loses. If a 7 is rolled instead of the point being re-rolled, the Don't Pass bet wins. Betting on Don't Pass is often called "playing the dark side," and it is considered by some players to be in poor taste, or even taboo, because it goes directly against conventional play.

Pass Odds (C)

If a 4, 5, 6, 8, 9, or 10 is thrown on the come-out roll (i.e., if a point is set), most casinos allow Pass Line bettors to take odds by placing from one to five times (and at some casinos, up to 100 times) the Pass Line bet behind the pass line. This additional bet wins if the point is rolled again before a 7 is rolled (the point is made) and pays at the true odds of 2-to-1 if 4 or 10 is the point, 3-to-2 if 5 or 9 is the point, and 6-to-5 if 6 or 8 is the point.

Don't Pass Odds (D)

If a player is playing Don't Pass instead of Pass, they may also lay odds by placing chips behind the Don't Pass line. If a 7 comes instead of the point coming, the odds pay at true odds of 1-to-2 if 4 or 10 is the point, 2-to-3 if 5 or 9 is the point, 5-to-6 if 6 or 8 is the point.

As Pass/Don't Pass Odds bets are paid at true odds, in contrast with the Pass Line which is always even money, playing Pass Odds on a minimum Pass Line bet lessens the house advantage. **A maximum odds bet** on a **minimum Pass Line** bet gives the **lowest house edge** available in the casino.

Come (E)

A Come bet is played in two rounds and is played similar to a Pass Line bet. If a 7 or 11 is rolled on the first round, it wins. If a 2, 3 or 12 is rolled, it loses. If instead the roll is 4, 5, 6, 8, 9, 10 then the come bet will be moved by the base dealer onto a box representing the number the shooter threw. This number becomes the Come Bet Point and the player is allowed to add odds to the bet. The dealer will place the odds on top of the Come bet, but slightly off center in order to differentiate between the original bet and the odds. The second round wins if the shooter rolls the Come bet before a seven. If the seven comes before the number (the Come-bet), the bet loses. On a come-out roll for the Pass Line the Come Bet is in play, but traditionally the odds are not working unless the player indicates otherwise to the dealer.

Come wagers can only be made after a point has been established. On a Come Out Roll the Come bet is placed on the Pass line as they are an identical bet.

Because of the Come Bet, if the Shooter makes their point, a player can find themselves in the situation where they have a Come bet (possibly with odds on it) and the next roll is a come-out roll. In this situation odds bets on the come wagers are presumed to be not working for the come-out roll. That means that if the Shooter rolls a 7 on the come-out roll, any players with active Come bets waiting for a come-point lose their initial wager but will have their odds money returned to them. If the come-point is rolled the odds do not win but the Come bet does and the odds are returned. The player can tell the dealer that they want their odds working, such that if the shooter rolls a number that matches the come point, the odds bet will win along with the Come bet, and if a seven is rolled both lose.

Don't Come (F)

Like a Come Bet, a Don't Come bet is played in two rounds. If a 2 or 3 is rolled in the first round, it wins. If a 7 or 11 is rolled, it loses. If a 12 is rolled, it is a standoff and the player has the option to revoke their bet. If instead the roll is 4, 5, 6, 8, 9, 10 then the Don't Come bet will be moved by the base dealer onto a box representing the number the shooter threw. The second round wins if the shooter rolls a seven before the Don't Come point.

Don't Come wagers can only be made after the come-out roll when a point has already been established. Odds can also be placed on a Don't come-bet just like a Pass Line bet. In this case the dealer (not the player) places the odds bet on top of the bet in the box, because of limited space, slightly offset to signify that it is an odds bet and not part of the original Don't Come bet.

“Single Roll” Bets/Propositions

Single-roll bets or proposition bets are resolved in one dice roll by the Shooter. Only the Stickman can place these bets for players, and they are located at the center of most Craps tables.

2/Snake Eyes/Aces (G)

Wins if Shooter rolls a 2.

3/Ace-Deuce (H)

Wins if the Shooter rolls a 3.

Yo/5-6 (I)

Wins if the Shooter rolls 11.

12/Boxcars/Midnight/Cornrows (J)

Wins if Shooter rolls a 12.

2 or 12/Hi-Lo (K)

Wins if Shooter rolls a 2 or 12. The Stickman places this bet on the line dividing the 2 and 12 bets.

Any Craps/Three-Way (L)

Wins if the Shooter rolls 2, 3 or 12.

C & E (M)

A combined bet, a player is betting half their bet on Craps and the other half on Yo (11). One of the two bets will always lose, the other may win.

Any Seven (N)

Wins if the shooter rolls a 7. This bet is also nicknamed Big Red, since the 7 on its betting space on the layout is usually large and red.

Field (O)

This bet is a wager that one of the numbers 2, 3, 4, 9, 10, 11, or 12 will appear on the next roll of the dice. This bet typically pays 2:1 or 3:1 if 2 or 12 is rolled, and 1:1 if 3, 4, 9, 10 or 11 is rolled. Unlike the other proposition bets which are handled by the Dealers or Stickman, the Field bet is placed directly by the player.



Horn (P)

This is a bet that involves betting on 1 unit each for 2, 3, 11 and 12 at the same time for the next roll. The bet is actually four separate bets, and pays off depending on which number is actually rolled, minus three units for the other three losing bets.

Whirl/World (Q)

This is a five-unit bet that is a combination of a Horn and Any-Seven bet, with the idea that if a seven is rolled the bet is a push, because the money won on the seven is lost on the Horn portions of the bet.

On The Hop (R)

This is a single roll bet on any particular combination of the two dice on the next roll. For example, if you bet on "5 and 1" on the hop, you are betting that the next roll will have a 5 on one die and a 1 on the other die. The bet pays 15:1 (just like a bet on 3 or 11) except for doubles (i.e. 3 and 3 on the hop) which pay 30:1 (just like a bet on 12, which is the same as 6 and 6 on the hop). The true odds are 17:1 and 35:1, resulting in a house edge of 11.11% and 13.89% respectively. When presented, Hop Bets are located at the center of the craps layout with the other proposition bets. If Hop Bets are not on the craps layout, they still may be bet on by players.

"Multi Roll" Bets/Propositions

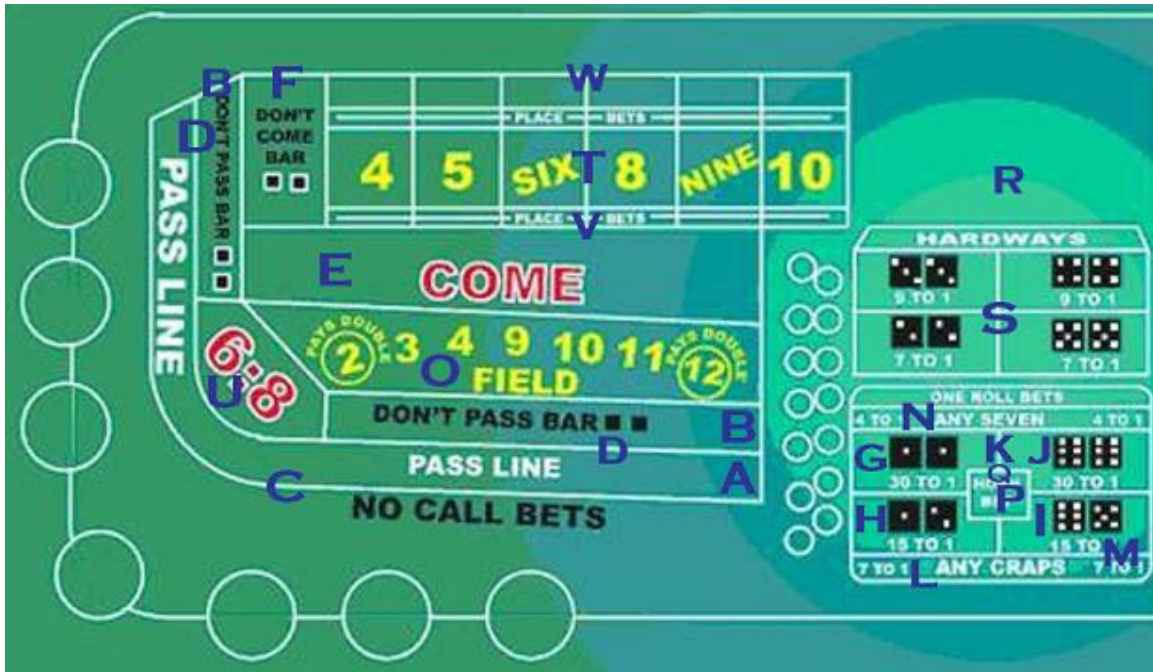
These are bets that may not be settled on the first roll and may need any number of subsequent rolls before an outcome is determined. These bets are normally considered "not working" in the new come-out roll until the next point is established, unless the player calls the bet as "working." Casino rules vary on this; some of these bets may not be callable, while others may be considered "working" during the come-out. If a non-working point number placed, bought or laid becomes the new point as the result of a come-out, the bet is usually refunded, or can be moved to another number for free.

Hard Way (S)

A bet that the Shooter will throw a 4, 6, 8 or 10 the "hard way", before he throws a seven or the corresponding "easy way". A hard way is when both dice show identical values, also known as "doubles," so 2-2 is a Hard Way 4.

Easy Way (T)

Opposite of Hard Way is a bet that the Shooter will throw a specific Easy Way (either 4, 6, 8 or 10), before he or she throws a seven. An Easy Way is a value that does not have two dice identical, so 3-1 is an Easy Way 4. These are rarely available as bets except by placing on a point number (which pays off on Easy or Hard rolls of that number).



Big 6/Big 8 (U)

A player can choose either the 6 or 8 being rolled before the shooter throws a seven. These wagers are usually avoided by experienced craps players since they pay Even Money (1:1) while a player can make Place Bets on the 6 or the 8, which pay more (7:6) and is exactly the same bet! Some casinos do not even offer the Big 6 & 8. The bets are located in the corners behind the Pass Line, and bets may be placed directly by players.

Place/Buy (V)

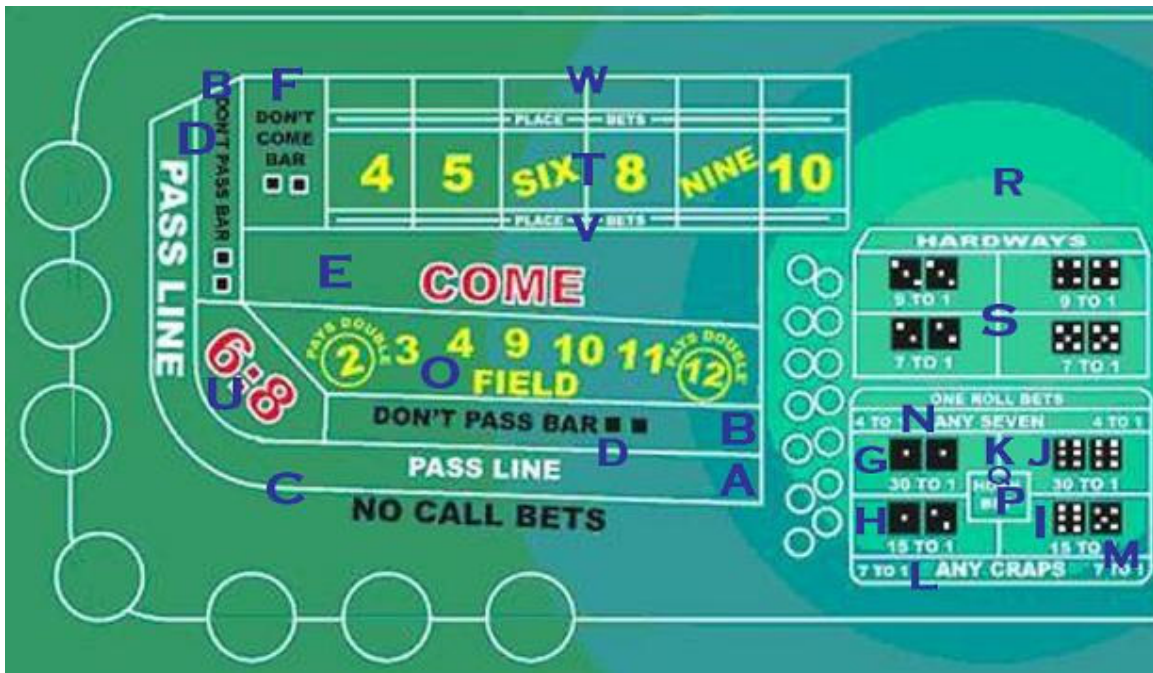
Players can Buy or Place any point number (4, 5, 6, 8, 9, 10) by placing their wager in the Come Area and telling the dealer, "place the 6" or "buy the 8". Both Place and Buy bets are bets that the number bet on will be rolled before a 7 is rolled. These bets are considered working bets, and will continue to be paid out each time a shooter rolls the Place or Buy point number.

Place bets are paid at odds slightly worse than the true odds, while Buy bets are paid at true odds, but a 5% commission is charged. Traditionally, the Buy bet commission is paid no matter what, but in recent years a number of casinos have changed their policy to charge the commission only when the Buy bet wins. Some casinos charge the commission as a one-time fee to Buy the number; payouts are then always at true odds. Most casinos usually charge only \$1 for a \$25 green-chip bet (4% commission), or \$2 for \$50 (two green chips),

reducing the house advantage a bit more. Where commission is charged only on wins, the commission is often deducted from the winning payoff—a winning \$25 buy bet on the 10 would pay \$49, for instance. The house edges stated in the table in a few pages assume the commission is charged on all bets. They are reduced by at least a factor of two if commission is charged on winning bets only. Rarely casinos offer the Place bet to lose. This bet is the opposite of the Place bet and wins if a 7 is rolled before the specific point number. The Place bet to lose typically carries a lower house edge than a Place bet.

Lay (W)

A Lay bet is the opposite of a Buy/Place bet, where a player bets on a 7 to roll before the number appears. The Lay Bets pay true odds, but a 5% commission is charged. In some casinos the commission is only charged if the bet wins. Like the Buy bet the commission is adjusted to suit the betting unit such that fraction of a dollar payouts are not needed.



Casino's Edge/House Advantage

So, how does the casino/gambling establishment make money? Obviously, the casinos must have the upper hand somehow in Craps or they wouldn't offer to take all of the bets from all those different players/gamblers! This may sound counterintuitive but the casinos make their money, not when Craps players lose their bets, but rather, when they win. How can this be? Simply put, the casinos (legally!) short-change players every time they win. Here is an example of how it is done.

Let us look at a pretty simple example to start with. A fairly common bet that people make is on 'Snake Eyes' where you are hoping that the next dice roll will come up 1-1. On the face of it, this seems like a great deal. After all, you get paid odds of 30:1 if you win! In other words, if you gamble \$5, for instance, you will get your \$5 back plus another \$150 in winnings. Woo Hoo! However, let's see if that is really as good a deal as it sounds. Well, if a dice has six sides, each number has a 1 in 6 chance of showing up. The real odds of seeing two 'Aces' or 1's appear is 1 in 6 multiplied by 1 in 6 which equals 1 in 36. The real odds that should be paid out are thus 35:1 (not 30:1 as the casino actually pays out). If you were being paid out on true odds, you should receive another \$25 of winnings on that \$5 bet. That \$25 is actually kept by the casino and that is how they make their money. In the case of the Snake Eyes, the House Advantage is 13.89% which means that for every \$100 that players spend on Snake Eyes bets, the casino expects to make \$13.89. Easy Money!

Now, a slightly less obvious example is the most common bet made on the Craps table which is called the "Pass Line" bet. The reason that this is so common a bet is that every new Shooter must make either a "Pass Line" or "Don't Pass Line" bet before they can throw the dice. On the face of it, it looks like you have about a 50:50 chance of making or losing this bet. However, in reality, there are, on average, 251 losing combinations versus only 244 winning combinations. This slight discrepancy means that the house expects to make about \$1.41 from every \$100 that players gamble on this "Pass Line" bet. Now, EVERY Craps bet ends up losing a little of the money it should pay you if it wins. You either don't get paid the true odds or, in certain cases, you do get the true odds but also have to pay a commission for making that bet. Either way, this amounts to a small profit to the house on every bet and thus... the house wins!

Below (and on the next page) is a table showing the various bets that can be made on a Craps table along with the actual odds of winning the bet, the odds paid out by the casino and the house edge that results. Some casinos change the payout odds slightly so please check with your local casino. However, the listed payout odds are the most common that will be found throughout casinos in North America.

<i>Bet</i>	<i>Actual Odds</i>	<i>Odds Paid</i>	<i>House Edge</i>
Pass / Come	251:244	1:1	1.41%
Don't Pass / Don't Come (Bar 12)	1031:949	1:1	1.36%
Pass Odds / Come Odds	Same as paid (after Pass/Don't Pass bet)	2:1 on 4 or 10 3:2 on 5 or 9 6:5 on 6 or 8	0%
Don't Pass Odds / Don't Come Odds	Same as paid (after Pass/Don't Pass bet)	1:2 against 4 or 10 2:3 against 5 or 9 5:6 against 6 or 8	0%
Yo (11)	17:1	15:1	11.11%
3	17:1	15:1	11.11%
2	35:1	30:1	13.89%
12	35:1	30:1	13.89%
Hi-Lo	17:1	15:1	11.11%
Craps	8:1	7:1	11.11%

<i>Bet</i>	<i>Actual Odds</i>	<i>Odds Paid</i>	<i>House Edge</i>
C & E	5:1	3:1 on craps 7:1 on 11	11.11%
Any 7	5:1	4:1	16.67%
Field	5:4	1:1 on 3,4,9,10 or 11 2:1 on 2 and 12	5.56%
Field	5:4	1:1 on 3,4,9,10 or 11 2:1 on 2, 3:1 on 12	2.78%
The Horn	5:1	27:4 on 2 or 12 3:1 on 3 or 11	12.50%
Whirl/World	2:1	26:5 on 2 or 12 11:5 on 3 or 11 0:1 (push) on 7	13.33%
Hard way 4 / Hard way 10	8:1	7:1	11.11%
Hard way 6 / Hard way 8	10:1	9:1	9.09%
Big 6	6:5	1:1	9.09%
Big 8	6:5	1:1	9.09%
Place 4 / Place 10	2:1	9:5	6.67%

<i>Bet</i>	<i>Actual Odds</i>	<i>Odds Paid</i>	<i>House Edge</i>
Place 5 / Place 9	3:2	7:5	4%
Place 6 / Place 8	6:5	7:6	1.52%
Buy 4 / Buy 10	2:1	2:1 + 5% commission	4.76% (1.67% Win Only)
Buy 5 / Buy 9	3:2	3:2 + 5% commission	4.76%
Buy 6 / Buy 8	6:5	6:5 + 5% commission	4.76%
Lay 4 / Lay 10	1:2	1:2 + 5% commission	2.44%
Lay 5 / Lay 9	2:3	2:3 + 5% commission	3.23%
Lay 6 / Lay 8	5:6	5:6 + 5% commission	4.00%

It doesn't matter how you slice it or what number(s) you bet on, the casino will ALWAYS take a little share out of every winning bet. Thus, the casino is safe in the knowledge that, as long as you and other players keep throwing money at them, they WILL make out like bandits in the end! In other words, if you keep placing bets then you will eventually hand over all of your money to them. Likewise, all the other players will be doing the same. This may seem a bit of a bleak outlook but there are several things that can be done to help reduce the house advantage. Likewise, there are betting strategies to help overturn the house advantage and actually make a profit.

Common Craps Betting Systems & Misconceptions

As you are probably aware, there have been numerous betting systems developed and promoted for the express purpose of trying to “beat the odds” in the game of Craps. In fact, many of these systems have been around for hundreds of years.

One of the more famous ‘systems’ is the notorious Martingale system. The way this is ‘supposed’ to work is that you bet a ‘unit’ (for example, a \$1) on any Even Money bet. ie one that has a 1-1 payout. If you win, you get your ‘unit’ back and win another so you have made 1 ‘unit’ profit. If you lose, you double your stake so that you either win 4 units (thus paying you back your total stake of 3 ‘units’ plus an extra ‘unit’) or lose and double up again. This, in theory, continues until you eventually win. The idea is that if you win at any point, you have recovered all of your lost money in addition to a ‘unit’ of profit. Although this sounds bulletproof, there are serious flaws that make it unworkable in reality. To start, it does not take a very long losing run to reach the ‘house limit’. This is the maximum that you are allowed to gamble on any single bet in the casino where you are playing. For example, many casinos have a limit of \$300, \$500 or \$1000 per bet. Let us assume a best case scenario of \$1000. How many losing bets can you sustain before you reach this limit? Well, starting up with a single \$1 and doubling up with each loss, your final bet would have been \$512 after just 10 loses. You cannot double again as this would be \$1024. As you have already spent a total of \$1023 at this point, you now have no way of ever recovering your investment! OK, let’s imagine that the house limit does not exist. Is it really practical to invest \$1024 to try to make a \$1 profit? You can do better by leaving your money in a really low interest bank account! However, the Martingale system also has another serious problem. It assumes that you have an infinite source of money. For example, with 20 loses (which is improbable but not outside the realm of possibility as many professional gamblers can tell you about ‘freak’ losing streaks), you are gambling \$524,288 on your next bet, to win a SINGLE DOLLAR! Eeeeeek! Obviously, the Martingale ‘system’ is not the best way to go for a profitable Craps strategy!

Another very famous system is by a French mathematician by the name of Jean Le Rond d'Alembert who lived his life in the 18th Century. The way you play this system is pretty simple. Just like the Martingale system, you bet on Even Money plays such as 'Pass Line' or 'Big 6'. You start with a single unit bet. If you win, that's the end of the sequence. If you lose, you add another betting 'unit' and do it again. You keep adding a 'unit' as long as you are losing. When you win, you take a 'unit' away each time and bet again. You keep doing this until you are in profit by 1 'unit'. The way this theory goes is that sometimes you win and sometimes you lose but it all balances out in the end and, at some point, you will eventually reach a point of profit, just by chance alone. Certainly, this "d'Alembert" system doesn't rapidly reach the house limit like the poor Martingale system does. It even sounds logical in theory. However, the big 'hiccup' is that, although the payout odds are 1-1, the probability of winning an Even Money bet is not 50% as those odds would imply. On the best Craps bets, the odds of winning an Even Money bet are actually only 49.32%. Thus, on average, you will win 49.32% of the time and lose 50.68% of the time. This will steadily eat away at your bankroll so that, on average, you will lose \$1.36 for every \$100 you stake. Oh well, a nice try but still another loser!

The "Fibonacci" system is another rapidly progressing system developed by an Italian mathematician called Leonardo Pisan. It follows a betting sequence where each bet, in the case of a loss is equal to the sum of the previous 2 bets. For example 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144 and so on. When you win, you cross off the last two numbers and continue betting. When you reach a profit point, the sequence ends and you begin again. Although not as extreme as the Martingale system, the "Fibonacci" system will still rapidly spiral out of control in the event of a few loses and thus, again, either hit the house limit or bankrupt you! Oh, well, scratch another flawed system!

Of the classic systems, the "La Bouchere" system (also known as "Split Martingale", "Cross-Out" or the "Cancellation" system) is very popular. Like many other 'classic' systems, it is aimed at Even Money bets. The way it works is that you decide how much profit you wish to make and write down a sequence of numbers that adds up to this desired profit. Your bet consists of adding up the first and the last numbers and betting this number of 'units'. If you win, delete these numbers from the list. If you lose, add your loss to the end of the list. When your list is empty, you have made your desired profit. Pretty simple huh? Just like many other systems, this sounds shiny and happy in principle. After all, you can just keep playing until the list is empty, can't you?

Well, sorry to rain on your parade again but, no, actually that house advantage hits you again to ensure that, just like the "d'Alembert" system, your list gets longer and longer since you are losing an average of \$1.36 for every \$100 spent. ♪♪ 'Boom! Boom! Boom! ... Another One Bites The Dust...' ♪♪ Who knew 'Queen' would be a rock anthem for the vast majority of Craps players out there?

OK, most people have tried these systems and come away completely depressed and, in all likelihood, absolutely dead broke! Thus, people being people, they get creative and come up with all manner of strange creations to convince themselves that they can "beat the odds". One of my personal favorites is "The 'Unbeatable' Iron Cross" which is one of the oldest and most popular Craps betting strategies. Many Craps players implement it into their repertoire because it 'wins most of the time'. Indeed, it only loses if a 'seven' is rolled on the dice and 'wins' about 83% of the time! The way it works is that you wait for a player to 'make their point' and then 4 bets are placed simultaneously. The first is a 'Field' bet which covers the numbers 2-3-4-9-10-11-12 and is a bet that one of these numbers will appear. The 'Field' bet pays Even Money (or 2:1 if a 2 or 12 is rolled). A 'Place' bet is also made on each of the three numbers 5-6-8. If a 5 is rolled the payout odds are 7:5 and if a 6 or an 8 is rolled the payout odds are 7:6. If you lose an individual bet then you replace that bet until the player 'makes their point'. Then, you just let the rest of the bets ride until you win or a 'seven' is rolled and all of the remaining bets are wiped out. So, the "Iron Cross" sounds pretty simple in principle. After all, what could be wrong with winning 83% of the time? Well, the main problem is that the system mixes in two different bets that have mid-range house edges. The "Field" bet has a house edge of 5.56% and the "Place 5" bet has a house edge of 4.00%. The only decent bets in the mix are the "Place 6/8" which have a house edge of only 1.52%. Thus, while it is true that most bets win, statistically the house still has an edge of 3.87%. In other words, for every \$100 that you bet on the "Iron Cross", you only expect to earn back \$96.13. The weird thing is that if you only bet on the "Place 6/8" parts of the bet, you would end up getting more money back in the long run than you would by covering the 11 different numbers in the "Iron Cross". This sounds completely counterintuitive and is why most players get caught in the 'sucker plays' by making bets based upon what 'seems' logical, rather than reality.

Another approach is called "Dice Setting" where you practice throwing dice in such a manner that they do not tumble randomly. Unlike other systems, this one is certainly plausible. However, this requires many years of practice so is not really practical for discussion here.

So, given that all of the more common Craps 'systems' ultimately result in you getting poorer and the casino getting richer, it is easy to see why there are a lot of common misconceptions about Craps.

The first misconception that people will tell you is that "it is impossible to overcome the house edge". Sadly, many experienced mathematicians will also tell you this (erroneous!) 'fact'. The basic misconception stems from the fact that the house takes a cut from 0.68% (using 'odds' bets) - 16.67% ('Any Seven' bet) from every winning bet. The argument goes "It doesn't matter whether your bets are large or small, they are still taking the same cut so you will still, ultimately lose the same percentage". Certainly, this is true if you are always making equal bets (level stakes) on each bet and not following a strategy of betting at the ideal time. Likewise, it is also true of any system that involves infinitely progressing bets. At some point, these systems will either hit the house limit, you will lose all your money or both! However, it IS possible to overcome this casino edge as long as you take it into account with all of your calculations. Craps also has an advantage in that bets can be removed from the table if they are starting to look like a bad idea. In other words, if this house advantage is figured as part of the costs of your bets then it can be overcome. The main problem is that most systems pretend this casino edge doesn't exist and then they get bitten by it creeping up on them!

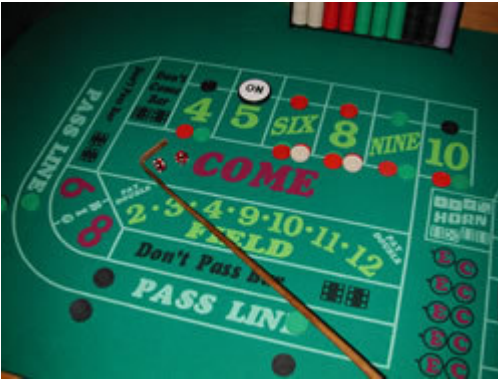
Yet another "fact" that you'll very often hear is that it is 'impossible' to use any mathematical system to beat Craps. The argument for this is that every throw is a completely independent event. Since the Craps dice have no 'memory', you cannot use past events to predict how they will land this time. As it turns out, as with many misconceptions, there is a certain amount of truth to this statement about being unable to use past results to predict where the dice will land. In fact, it is COMPLETELY IMPOSSIBLE to use any mathematical model to predict where the dice will land on the next throw! Huh? Yes, you heard correctly that it is 100% IMPOSSIBLE to predict where the dice will land on the next throw at the Craps table! OK, you're probably wondering why you are bothering to read this book at the moment aren't you? Well, this is the part where these people claiming that a mathematical model cannot help are operating under a misconception. Although, it is impossible to predict how any particular throw will land, it IS possible to accurately predict how likely the dice are to land on any particular number within a certain number of bets. In other words, we don't know when a bet will win for us but we do know how likely it is to do so during a certain period of time.

Let us demonstrate with an example. We will assume that you are making the worst Craps bet you can make by betting on 'Any Seven'. Now, there are 36 total combinations that can be rolled on two dice. Of those, there are 6 combinations that would win the 'Any Seven' bet for you (1-6, 2-5, 3-4, 4-3, 5-2 and 6-1) and 30 combinations that would lose. Thus, on any given throw of the dice, you can expect to win 6/36 bets (around 16.67%) and lose around 30/36 (83.33%). Since the payout odds are 4:1 on this bet, it should be immediately obvious on any given throw that that you have a 16.67% chance of winning four times the amount bet and an 83.33% chance of losing it. The net result is that, on average, over each 100 throws, you would expect to lose \$83.33 and win \$66.67 for a net loss of \$16.66 which is, of course, the house advantage (allowing for rounding errors). However, what are the odds of losing two bets in a row? Well, if 83.33% of the time we expect to lose a single bet then 83.33% of 83.33% is the probability of losing two bets in a row. This amounts to a 69.43% chance of losing both bets. Likewise, there is a 57.86% chance of losing 3 bets in a row, 48.22% chance of losing four bets in a row and so on. OK, that's all very well but how does this help us? Well, if we only have a 48.22% chance of losing 4 bets in a row, what does this mean? Well, put simply, it means that 51.78% of the time, we would expect to WIN at least one of those 4 bets! Indeed, if we continue this sequence, we find that by the time we reach the possibility of 26 losses in a row, the expected chance of a win occurring is over 99.13%! As mentioned, this is assuming that you bet on the absolutely worst bet that you can make on the Craps table in terms of the payout that you receive in return for the risk that you make. If we look at the other end of the spectrum and **consider the best bet** (a "Don't Pass" bet followed by 'taking odds'), the win percentage is 49.66% and the lose percentage is 50.34%. **You will now have a winning bet 99.18% of the time within 7 die rolls!**

Now, knowing these probabilities, the problem at hand becomes the considerably simpler task of devising a betting strategy that will produce a profit. In other words, the task is to devise a strategy that earns you more money than you spend. The way to figure out whether a betting strategy is profitable is to first determine the expected 'win'. In other words, multiply the average profit from any bet in the sequence by the expected win percentage. Next, determine the expected 'loss' when the betting strategy does not produce any profit. This is equal to the total of all the bets in the sequence added together and multiplied by the losing percentage. Obviously, if the total expected 'wins' is more than the total expected 'losses' then we have a system that, over many bets, is a winner!

OK! Enough Already! How Do We Win?

So, we've established that, even though it's not possible to accurately predict the outcome of any given throw of the dice in Craps, it IS possible to accurately predict the likelihood of an outcome showing up within a certain number of throws.



Given this, what strategy can we follow to ensure a profit overall? Well, the first thing we want to do is build our strategy around the bets with the lowest house margin since whatever strategy we use has to overcome this margin before a profit can be realized. Obviously, the higher the casino edge, the more of an uphill battle we have on our hands.

The strongest bet on the table is the "Don't Pass" bet which has a house edge of only 1.36%. You are gambling that the shooter will 'crap out' or fail to make their point by instead rolling a 'seven'. Likewise, once a 'point' has been established by the Shooter, the "Don't Come" bet is essentially the same bet and can be made at any time that a point is established. In either case, by taking 'odds' that the point rolled will not appear again before the next 'seven', this house edge is lowered down to just 0.68% with either the "Don't Pass" or "Don't Come" bets. The "Don't Pass" bet can be removed from the table before being resolved which means that, if things are looking unfavorable, you can take back your 'at risk' money. The "Don't Come", however, remain on the table until resolved.

A very close second are the "Pass" and "Come" bets which have a casino advantage of 1.41%. Again, by taking 'odds' that the same point will appear again before the next 'seven', the house edge can be lowered down to 0.705%. These bets stay on the table until resolved.

The next strongest bets are to either "Place 6" or "Place 8" which means that you are expecting a 6 or 8 to appear before a seven is rolled. These bets can be made at any time (whether during the come-on throw or the 'point' rounds of play) and both bets have a house advantage of only 1.52%. These bets can be removed if unfavorable.

Next on the roster are the "Lay 4" or "Lay 10" bets. These are bets that 'seven' will appear before a 4 or 10 is rolled. Like the "Place" bets, they can be played at any time. They also pay out true odds. However, you must pay a 5% commission to make either of these two bets so the effective house edge is 2.44%. If you only pay commission on a win as some casinos allow, the edge is lowered down to 1.22%. You can remove this bet as and when the probabilities no longer look right.

"Lay 5" or "Lay 9" work in exactly the same way except the edge is 3.23% after the commission is added in (1.615% if the commission is only paid on winning bets). Again, a removable bet if it starts to look like a poor idea.

Finally, there are a few marginal bets that have a 4.00% house margin. This is larger than would be practical for most purposes. The only reason to mention them are that they may be useful as part of a strategy that is based upon the lower margin bets. These four bets are "Lay 6" or "Lay 8" and "Place 5" or "Place 9". You can also remove these four bets from the table whenever you wish. Again, if the casino only charges a commission on winning bets then the house margin is lowered to 2.00% on the "Lay 6" or "Lay 8" bets.

All other bets have a far too high edge to consider betting upon. One exception worth noting is that, on most Craps tables, playing a "Field" bet has a 5.56% edge if they payout 2:1 on the number 12 appearing. However, some tables pay out 3:1 on 'boxcars' or '12' appearing. In this case, the house advantage drops back down to a much more reasonable 2.78%. This is mostly academic but does make it a viable bet if your casino has this 3:1 rule for 'Field' bets. Certainly, unlike the other bets that DID have low casino edges, the 'Field' bet is resolved in a single roll. This makes it weaker in terms of being able to plan a strategy based upon multiple rolls. For our purposes, therefore, we will assume that the 'Field' bet is not workable in terms of planning our strategy. This simplifies things, regardless of where in the world you are choosing to play Craps.

In order to establish the optimum betting conditions for each of the low house margin bets that we discussed above, we are going to have to do a bit of math. (EEEEK!) We will track each possible dice throw and how it affects whether the bet is a good proposition or if it is now more likely to lose than win. If you are not interested in the actual math then feel free to just ignore it and skip the text between the **RED** and **GREEN** dashed lines (- - - - - / - - - - -) to see our suggested betting strategy. On the other hand, if you are curious about the math that makes these strategies work then please read on.

WARNING – MATH FOLLOWS! - - - - -

The first thing we need to do in our analysis is to figure out the actual probabilities of any number showing up on any given throw of the dice. The first column is the sum of the “Dice Throw”. The second column shows how each die can land to make up this number. “Total Combos” is the probability of this combination appearing. “Average Appearance” is how often we would see it if it appeared exactly as chance would dictate. Of course, this never happens in reality. There is a mathematical law called “Uneven Distribution” that notes that results tend to ‘clump up’ in ‘random’ systems. That’s why the last 2 columns.

<i>Dice Throw</i>	<i>Possible Dice Combinations</i>	<i>Total Combos</i>	<i>Average Appearance</i>	<i>Under Appearance</i>	<i>Over Appearance</i>
2	1-1	1 / 36	1 in 36	0 in 36	1 in 18
3	1-2, 2-1	2 / 36	1 in 18	0 in 18	1 in 9
4	1-3, 2-2, 3-1	3 / 36	1 in 12	0 in 12	1 in 6
5	1-4, 2-3, 3-2, 4-1	4 / 36	1 in 9	0 in 9	1 in 4
6	1-5, 2-4, 3-3, 4-2, 5-1	5 / 36	1 in 7.2	0 in 8	1 in 3
7	1-6, 2-5, 3-4, 4-3, 5-2, 6-1	6 / 36	1 in 6	0 in 6	1 in 3
8	2-6, 3-5, 4-4, 5-3, 6-2	5 / 36	1 in 7.2	0 in 8	1 in 3
9	3-6, 4-5, 5-4, 6-3	4 / 36	1 in 9	0 in 9	1 in 4
10	4-6, 5-5, 6-4	3 / 36	1 in 12	0 in 12	1 in 6
11	5-6, 6-5	2 / 36	1 in 18	0 in 18	1 in 9
12	6-6	1 / 36	1 in 36	0 in 36	1 in 18

OK, let's analyze the **"Don't Pass"** bet. Of course, this bet can only be made during the come-on roll. It wins if 2 or 3 is rolled on the initial roll and loses if a 7 or 11 is rolled. If 12 is rolled, you neither win nor lose but, instead, get your stake back as if you had never bet. Otherwise, whatever the 'point' roll, you win if a 7 appears before that 'point' number appears again.

During the initial roll, there are 3 combinations that will win the bet, 8 combinations that will lose the bet, 1 that will return your stake (as if you never made the bet) and 24 'point' combinations that are, as yet, undecided (ie 35 possible combinations on the initial come-out throw, not the usual 36). There is thus an 8.57% chance of winning, 22.86% chance of losing and 68.57% is undetermined.

If 4 or 10 is the 'point', any given roll has 6 combinations that will win, 3 combinations that will lose and 27 combinations that are still undecided. Thus, each successive roll will be a win 16.67% of the time, lose 8.33% of the time and still be undecided 75% of the time.

If 5 or 9 is the 'point', any given roll has 6 combinations that will win, 4 combinations that will lose and 26 combinations that are still undecided. Thus, each successive roll will be a win 16.67% of the time, lose 11.11% of the time and still be undecided 72.22% of the time.

Finally, if 6 or 8 is the 'point', any given roll has 6 combinations that will win, 5 combinations that will lose and 25 combinations that are still undecided. Thus, each successive roll will be a win 16.67% of the time, lose 13.89% of the time and still be undecided 69.44% of the time.

OK, let's tabulate all of those figures on the next page so we can see how strong the "Don't Pass" bet is after each throw. Since we can pull the bet at any time it appears weak, this may be relevant information.

(Incidentally, the "Don't Come" bet has exactly the same probability tables as the "Don't Pass" bet. The only difference is that it can only be played when there is a 'point' established and cannot be removed)

"Don't Pass/Come" Come On Roll ----->						8.57%	22.86%	68.57%
Point = 4 / 10			Point = 5 / 9			Point = 6 / 8		
Win	Lose	Undet.	Win	Lose	Undet.	Win	Lose	Undet.
20.00	28.57	51.43	20.00	30.48	49.52	20.00	32.38	47.62
28.57	32.85	38.57	28.25	35.98	35.76	27.94	38.99	33.06
35.00	36.06	28.93	34.21	39.95	25.83	33.45	43.58	22.96
39.82	38.47	21.70	38.52	42.82	18.65	37.28	46.77	15.94
43.44	40.28	16.27	41.63	44.89	13.47	39.94	48.98	11.07
46.15	41.64	12.20	43.88	46.39	9.73	41.79	50.52	7.69
48.18	42.66	9.15	45.50	47.47	7.03	43.07	51.59	5.34
49.71	43.42	6.86	46.67	48.25	5.07	43.96	52.33	3.71
50.85	43.99	5.15	47.52	48.81	3.66	44.58	52.85	2.57
51.71	44.42	3.86	48.14	49.22	2.65	45.01	53.21	1.79
52.32	44.74	2.90	48.58	49.51	1.91	45.31	53.46	1.24
52.83	44.98	2.17	48.90	49.72	1.38	45.52	53.63	0.86
53.19	45.16	1.63	49.13	49.87	1.00	45.66	53.75	0.60
54.46	45.3	1.22	49.30	49.98	0.72	45.76	53.83	0.42
53.61	45.4	0.92	49.42	50.06	0.52	45.83	53.89	0.29

OK, the long and short of this table is that, initially, the "Don't Pass" bet has a considerably greater chance of losing than winning. Indeed, this is also true if 6 or 8 is thrown as the 'point'. However, if 4 or 10 is the 'point', we see a different story. The more throws of the dice, the more and more likely you will win! Because the "Don't Come" bet can't be removed, you would not normally prefer to gamble on the "Don't Pass" rather than the "Don't Come" bet.

Strong Strategy: Make a "Don't Pass" bet during the come-on roll. If the point is 4 or 10 then take "Don't Pass Odds". If the 'point' is 6 or 8, remove the "Don't Pass" bet. Let any remaining "Don't Pass" related bets resolve.

Let's analyze the **"Pass"** bet next. Like "Don't Pass", this bet can only be made during the come-on roll. The "Pass" bet wins if 7 or 11 is rolled on the initial roll and loses if a 2,3 or 12 is rolled (you 'crap out'). Otherwise, whatever the 'point' roll, you win if that 'point' number appears again before seeing a 'seven'.

During the initial roll, there are 8 combinations that will win the bet, 4 combinations that will lose the bet and 24 'point' combinations that are, as yet, undecided. There is thus a 22.22% chance of winning, 11.11% chance of losing and 66.67% is undetermined.

If 4 or 10 is the 'point', any given roll has 3 combinations that will win, 6 combinations that will lose and 27 combinations that are still undecided. Thus, each successive roll will be a win 8.33% of the time, lose 16.67% of the time and still be undecided 75% of the time.

If 5 or 9 is the 'point', any given roll has 4 combinations that will win, 6 combinations that will lose and 26 combinations that are still undecided. Thus, each successive roll will be a win 11.11% of the time, lose 16.67% of the time and still be undecided 72.22% of the time.

Finally, if 6 or 8 is the 'point', any given roll has 5 combinations that will win, 6 combinations that will lose and 25 combinations that are still undecided. Thus, each successive roll will be a win 13.89% of the time, lose 16.67% of the time and still be undecided 69.44% of the time.

OK, let's tabulate all of those figures on the next page so we can see how strong the "Pass" bet is after each throw. Although the "Pass" bet cannot be removed from the table, this may be relevant information to determine the expected trends.

(Incidentally, the "Come" bet has exactly the same probability tables as the "Pass" bet. The only difference is that it can only be played when there is a 'point' established but otherwise would be a similarly good or bad bet in the same situations as the "Pass" bet)

"Pass/Come" Come On Roll ----->						22.22%	11.11%	66.67%
Point = 4 / 10			Point = 5 / 9			Point = 6 / 8		
Win	Lose	Undet.	Win	Lose	Undet.	Win	Lose	Undet.
27.76	22.22	50.00	29.63	22.22	48.15	31.48	22.22	46.30
31.93	30.56	37.50	34.98	30.25	34.77	37.91	29.94	32.15
35.05	36.81	28.13	38.84	36.05	25.11	42.38	35.30	22.32
37.39	41.50	21.09	41.63	40.23	18.14	45.48	39.02	15.50
39.15	45.02	15.82	43.64	43.25	13.10	47.63	41.60	10.76
40.47	47.66	11.87	45.10	45.43	9.46	49.13	43.39	7.47
41.46	49.64	8.90	46.15	47.01	6.83	50.17	44.64	5.19
42.20	51.12	6.67	46.91	48.15	4.93	50.89	45.51	3.60
42.76	52.23	5.01	47.46	48.97	3.56	51.39	46.11	2.50
43.18	53.06	3.75	47.86	49.56	2.57	51.74	46.53	1.74
43.49	53.69	2.82	48.15	49.99	1.86	51.98	46.82	1.21
43.72	54.16	2.11	48.36	50.30	1.34	52.15	47.02	0.84
43.9	54.51	1.58	48.51	50.52	0.97	52.27	47.16	0.58
44.03	54.77	1.19	48.62	50.68	0.70	52.35	47.26	0.40
44.13	54.97	0.89	48.70	50.80	0.51	52.41	47.33	0.28

This table shows that, initially, the "Pass" bet has a considerably greater chance of winning than losing. If 4,5,9,10 is thrown as the 'point' the win odds dwindle after the 3rd or 4th throw after the 'point'. However, if 6 or 8 is the 'point', we see that the win percentage never fades off. In fact, it settles at around 52½%! The "Come" bet shares the same strengths so is equally viable.

Strategy: Make a "Pass" bet during the come-on roll. If the point is 6 or 8 then take "Pass Odds" and wait for it to resolve. If, on the other hand, the 'point' is 4,5,9 or 10 then just wait for the "Pass" bet to resolve.

Although the next possible bets with low house edges are "Place 6" or "Place 8", we are going to mostly ignore them. Why? Well, the edge on these bets is 1.52%. From analyzing the "Pass" bet we have already determined a better way of placing those same bets with ZERO house edge! Essentially, when you take "Pass Odds" and 8 is the 'point' number, it is the same as saying "Place 8". However, if you bet "Pass Odds" when the 'point' number is 6, it is still a **good value bet to "Place 8" if 'seven' has appeared at least once within the last three throws and '8' has not within the last eight throws.** This is because of a mathematical concept called "Uneven Distribution" that affects random, chaotic and chance based systems. Likewise, if the 'point' is 8 and you "Pass Odds" then a **"Place 6" bet is good value if '6' has not appeared within the last eight throws and 'seven' has appeared at least once within the last three throws.**

For similar reasons, we are going to skip the "Lay 4" and "Lay 10" bets. In this case, from analyzing the "Don't Pass" bet we have already determined a better way of placing those same bets with ZERO house edge! Essentially, when you take "Don't Pass Odds" if 4 is the 'point' number, it is the same as saying "Lay 4". However, if you bet "Don't Pass Odds" on a 'point' number of 4, it is still a **good value bet to also "Lay 10" if '10' has appeared at least once within the last four six throws and 'seven' has not.** Again, "Uneven Distribution" leads us to this conclusion. Likewise, if the 'point' is 10 and you "Don't Pass Odds" then a **"Lay 4" bet is good value if '4' has appeared at least once within the last six throws and 'seven' has not.**

OK, next, we need to analyze the bets "Lay 5" and "Lay 9" where we are betting that a 'seven' will appear before the 5 or 9. With any throw of the dice, there are 6 winning combinations, 4 losing combinations and 26 undetermined combinations. It should be immediately obvious that any given throw of the dice has a 16.67% chance of winning, an 11.11% chance of losing and a 72.22% chance of being undetermined. However, as the winning chance is always double that of the losing chance, the odds of winning this bet over any sequence of throws is 60% and you will only lose 40% of the time. In other words, the undetermined results are really irrelevant to the winning or losing of the "Lay 5" or "Lay 9" bets. It is only the final throw of the dice that we need to consider. OK, if they win 60% of the time, why don't we just bet on them every time? Well, although the odds are paid fairly (3:2), the commission is what causes the 3.23% house edge. The way around this is again through "Uneven Distribution" but, even then this is still a marginal bet.

If we consider the other marginal bets based upon the house edge, we must immediately eliminate the "Place 5" and "Place 9" bets. Hopefully, the reason for this should be obvious. A "Lay 5" bet wins 60% of the time and loses 40%. A "Place 5" bet is exactly the opposite and will lose 60% of the time and only win 40% of the time. Likewise, the "Place 9" bet is the opposite of the "Lay 9". There is NO manipulation of the odds that can hide that 20% difference!

Finally, let's analyze the "Lay 6" and "Lay 8" bets where we are betting that a 'seven' will appear before the 6 or 8. With any throw of the dice, there are 6 winning combinations, 5 losing combinations and 25 undetermined combinations. As with the "Lay 5" and "Lay 9", the undetermined results are really irrelevant to the winning or losing the bet. It is only the final throw of the dice that we need to consider. In this case, either bet would win 54.55% of the time and lose 45.45% of the time. The true odds of 5:6 are paid out but, again, the commission causes the house edge of 4.00%. The bet can, again, be made viable through "Uneven Distribution" but, even then this is still a marginal bet.

So, that pretty much covers the math. Hello? Are you still awake?

You are? THEN LET'S GO MAKE SOME MONEY!

-----**-You're Safe, The Math Lesson Is Over!**



OK, you've now read the math above (or, perhaps, you had your eyes glaze over as you tried to read it!) and learned the best strategies for each of the low house margin bets. Alternatively, you don't care about the math and just want us to (quoting the famous movie "Jerry Maguire") "Show You The Money!"

Either way, what is the best way to combine these bets into a workable betting system? The answer to that comes down to whether you want a really simple system that lets you make short term gains by minimizing your losses or, alternatively, a more complex system that genuinely overcomes the house edge over time. The following is the simplest method that appeared by analyzing the various probabilities. It has the advantage that it is easy to remember so that it can be operated at both online casinos and, of course, you can enjoy playing it physically in the fast action of a live casino too!

Now, it is important to note that you should thoroughly memorize EVERY strategy before attempting to play it with real money. Practice, practice, practice so it becomes second nature to you. In other words, you need to become familiar with how to effectively apply each strategy, otherwise you WILL make mistakes when you start gambling for real. A good place to practice online is at "Bodog". The reason for this is that you don't have to go through any complicated sign up process. Instead, you can link directly to their website and just start a practice game (ie, no real money required!). In Appendix A, you can find various online casinos, in addition to Bodog, offering strong sign up incentives such as welcome bonuses and free play for new players. The link if you would like to practice Craps is found at:-

<http://casino.bodoglife.com/free-craps.jsp>



Strategy For Successful "Don't Pass Odds" Craps Betting

Ideally, you should be playing at a casino that allows you to place '2x odds'. This is probably the most common 'Odds' rule found at most casinos around the world. For example, if you are in downtown Las Vegas (not the 'strip'), there are many casinos offering 10x odds. Casino Royale, which IS located on the strip, offers an amazing 100x on odds bets! Occasionally, you will find that a local casino limits you to only 1x on 'Odds' bets. What this means is that, if you bet \$5 on a "Pass" bet, you can place an "Odds" bet of \$10 in a '2x' casino but only \$5 in a '1x' casino. However, EVERY casino pro-rates the allowable 'Odds' bets on "Don't Pass" bets. This is x1.2 on a '6' or '8', x1.5 on a '5' or '9' and x2 on '4' or '10'. The basic strategy below assumes the standard of a casino offering 2x Odds bets. Even though this strategy will make you a profit, you WILL ensure a higher rate of return if a higher 'Odds' multiplier exists and, of course, you feel comfortable making larger bets. Just ensure that if you make larger 'Odds' bets that you increase all of them by the same ratio. In the event that you are at a casino which only offers x1 odds, you would start off with \$10 "Pass/Don't Pass" bets but keep the 'Odds' bet at the same level.

Anyway, here is the basic strategy:-

- 1) Start with a 'multiplier' of x1.** You will be using this multiplier to take advantage of the fact that the majority of your bets will be at 'True Odds'. In other words, the casino will have ZERO house advantage on most of the bets you place. You will always multiply the dollar amounts mentioned in the steps below by the current value of the 'multiplier'.
- 2) Place a \$5 "Pass" AND a \$5 "Don't Pass" bet when the Shooter is making their come-on roll (\$10 bets at a x1 'Odds' casino).** Huh? What's the point of that? Well, in order to be able to place 'Odds' bets with ZERO MARGIN, you have to make it past the Shooter's 'come-on/come-out' throw. What this seemingly nonsensical strategy does is act as a 'hedge' so that you can freely place these 'Odds' bets later. On an initial throw of 7 or 11, the "Pass" bet wins and the "Don't Pass" loses so you break even. Likewise, on a 2 or 3, the reverse will be true so you again break even. If the Shooter makes a 'point' then any possible result after that will likewise cause these two bets to cancel out. Finally, an initial roll of '12', which happens only 1 in 36 times, loses you the \$5 "Pass" bet. Thus, the house margin has been all but eliminated as all remaining bets will be placed at 'True Odds'. ie, without any casino or house edge.

- 3) If the point is '6' or '8', take a \$12 "Don't Pass" 'Odds' bet. If the point is '5' or '9' take a \$15 "Don't Pass" 'Odds' bet. If the point is '4' or '10' take a \$20 "Don't Pass" 'Odds' bet and wait it out until a result is established.** In a x1 'Odds' casino, these dollar amounts on the 'Odds' bets will be identical because you started with a higher initial stake to counterbalance the lower available 'Odds'. Once you have made it past the 'come-on' roll, you have a better than 50% chance of profiting from ANY "Don't Pass" 'Odds' bet. In other words, you tend to win the bet more often than you lose.
- 4) If you 'won' the 'Odds' bet by having a 'seven-out' then decrease the 'multiplier' by 1 (to a minimum of 1). If you 'lost' the bet by having the Shooter make their 'point' or by an initial roll of '12' in the come-out round, increase the 'multiplier' by 1 (to a maximum of 3). If you lose after the multiplier is x3, reset it back to 'x1'.** The observant among you will notice that this method of increasing/decreasing the stakes appears to be a variant of the D'Alembert system that we rejected earlier in this book. You are probably asking yourself 'what has changed' to make this a viable betting strategy now? Well, two things actually. First, your significant bets are now being placed with ZERO HOUSE MARGIN so you are paid out fairly. Secondly, the 'Odds' bets have a greater than 50% chance of winning so your bets do not spiral out of control (and this is helped by the limit of x3). The 'multiplier' tends to go up and down but mostly settle back to a 'multiplier' of '1'.
- 5) If you've either made your desired profit or you've had a bad day and lost more than you are willing, STOP betting! Otherwise, go back to Step 2 and keep going.** Simply put, decide ahead of time how much you are willing to lose since there will always be the occasional bad day where YOU WILL LOSE. Equally important is to decide how much you want to win for the day and quit once you reach this point. Otherwise, what tends to happen is that you try to capitalize on your 'winning streak' and end up losing some of your profits. Even worse is when you try to 'make up for your loss' by throwing more money away. This is gambling at it's worst and, have no doubt, the fact that you are reading this book confirms that YOU are a gambler and are susceptible to this flawed line of reasoning. A general rule of thumb is to make the amount that you want to win equal to about two or three times the amount that you are willing to lose. For instance, if you are willing to lose \$200, set your win threshold to somewhere between \$400-600.

WARNING – MATH FOLLOWS! - - - - -

OK, let's see how this plays out by covering all of the possibilities and the expected payouts on each facet of this betting strategy. To start, we'll look at what happens on the initial throw of the dice. Then we will cover what happens if the 'point' is 6 or 8, then 5 or 9 and finally 4 or 10.

If the first throw is 7 or 11 there are 8 possible combinations where you will break even. Likewise, with a 2 or a 3, there are 3 combinations that will cause you break even. Finally, on a 12, there is a single combination where you lose \$5. All remaining combinations result in the Shooter having a 'point' of either 4, 5, 6, 8, 9 or 10. There are 36 possible combinations. Thus, it should be obvious that the chance of 7 or 11 appearing is $(8/36) \times 100 = 22.22\%$ of the time. Likewise, the chance of a 'point' of 6 or 8 showing up is $(10/36) \times 100 = 27.78\%$ and so on.

OK, but what are the percentages for winning or losing once we have established the 'point'? Well, with the example of 6 or 8, there are 5 combinations where a 'point' will be made and 6 combinations where the Shooter will 'Seven Out'. Thus, the point is made $(5/11) \times 100 = 45.45\%$ of the time and a 'seven out' $(6/11) \times 100 = 54.55\%$. Since a point of 6 or 8 only occurs 27.78% of the time, the overall expected percentages are 6/8 'point' made occurs $27.78\% \times 45.45\% = 12.63\%$. Likewise, after a 6 or 8 'point', the Shooter will 'seven out' 15.15% of the time.

OK, how do we figure our win or loss? Well, it seems obvious you'll break even if a 7 or 11 appears on the initial roll (22.22% of the time), you'll also break even if a 2 or 3 appears (8.33% of the time) and lose \$5 if a 12 appears (2.78% of the time). What about the bets with 'Odds'? The \$20 "Don't Pass" 'Odds' bet on 4/10, for instance, will win you \$10 which, when added to the \$5 win from the "Don't Pass" bet and the \$5 loss from the "Pass" bet, gives you a net win of \$10 if you 'seven out' after rolling a 4 or 10 as the point. Likewise, if you instead see that 4 or 10 appear, before the '7', you will lose the \$5 on the "Don't Pass" bet, win the \$5 "Pass bet" and lose the \$20 from the 'Odds' bet. The net loss is, therefore, \$20 in this case.

Let's table that out below (the percentages in the right column total 100%)

On First Throw
 7/11 (22.22% of time) = Break Even
 2/3 (8.33%) = Break Even
 12 (2.78%) = Lose \$5

Point is 6/8 (27.78%) – Make Point (12.63%) = Lose \$12
 'Seven Out' (15.15%) = Win \$10

Point is 5/9 (22.22%) – Make Point (8.89%) = Lose \$15
 'Seven Out' (13.33%) = Win \$10

Point is 4/10 (16.67%) – Make Point (5.56%) = Lose \$20
 'Seven Out' (11.11%) = Win \$10

That's all very well but how can we figure out, from that mass of numbers, whether the strategy would make or lose money in the long run? The first thing we need to figure out is the average amount that you bet in any given round. It should be apparent that, whether you break even (2,3,7,11), lose (12) or move onto the point round (4-5-6-8-9-10) on the first throw, you have invested \$10. If a 6 or 8 is the point (which occurs 27.78% of the time) you invest an extra \$12. On 5 or 9 (which occurs 22.22% of the time), you invest an extra \$15. Finally, on a 4 or 10 (which occurs 16.67% of the time), you invest an extra \$20.

$$\begin{aligned}
 \text{Average Spend therefore} &= \$10 + (27.78\% \times \$12) + (22.22\% \times \$15) \\
 &\quad + (16.67\% \times \$20) \\
 &= \$10.00 + \$3.33 + \$3.33 + \$3.33 \\
 &= \mathbf{\$20.00 \text{ (Allowing for 'Rounding' Errors)}}
 \end{aligned}$$

So, how do we figure out whether we make or lose money overall on each bet? Well, now we know each of the possible combinations, how much each combination will win or lose and how often each possibility occurs, we have all the information required to figure it out. All you need is a calculator with a "Memory" or a series of "M" buttons (MC/MR/M+/M-). To convert percentages into probabilities, just divide them by 100. Start by ensuring that your calculator memory is empty by hitting the "Memory Clear" or "MC" button. After this, type into your calculator '2.78 ÷ 100 x 5 ='. Then hit 'M-' or 'MS' since this was a \$5 loss. Next type '12.63 ÷ 100 x 12 =' and hit 'M-' (another loss). Next type '15.15 ÷ 100 x 10 =' and hit 'M+' (a win). Next type '8.89 ÷ 100 x 15 =' and hit 'M-' (a loss). Next type '13.33 ÷ 100 x 10 =' and hit 'M+' (win). Next up is '5.56 ÷ 100 x 20 =' and hit 'M-' (lose). Finally, type '11.11 ÷ 100 x 10 =' and hit 'M+' (win). At this point, we have tabulated the expected profit or loss from each of the possibilities. Each time we typed 'M+', we were recording a win and each time we typed 'M-', we were recording a loss. Thus, if we have a positive total, we have won more than we lost. Likewise, if we have a negative total, we have lost more than we won. If you go ahead and hit the "Memory Recall" or "MR" button, you will note that total is **-0.1411**. As might be expected, it's negative. In other words, our net expectation is that, on average, we expect to lose approximately 14 cents, every time we bet. This is NOT unexpected. After all, each of our 'Odds' bets pay out true odds which means that their losses and wins cancel out. However, there is still the approximately 2.78% of the time that we lose \$5 (without a corresponding win) on the initial throw of the dice and this is where the **0.1411 Loss** comes from. What does this loss actually mean? Well, if we divide the \$0.1411 loss by the \$20 average stake, we get 0.007055 which is the ratio of the average loss relative to the average stake. By multiplying this by 100, we find that the house margin is now approximately 0.71%. Although still a loss, this is pretty good. After all, the lowest bet on the Craps table has a house advantage of 1.36% and we have just about knocked it in half by taking advantage of the Free 'Odds' bets! Regardless, a loss is still a loss and, if we make level stakes bets all of the time, we will still eventually lose our money.

The next thing we thus need to do is to bet in such a fashion as to maximize the impact of the 'wins' while minimizing the impact of the 'losses'. If we rearrange the probability table from a couple of pages ago, we note that for any sequence of bets, we expect the following outcomes.

Break Even = 22.22% + 8.33% = 30.55%

Lose = 2.78% + 12.63% + 8.89% + 5.56% = 29.86% of the time

Average Loss = ((2.78% x \$5) + (12.63% x \$12) + (8.89% x \$15) + (5.56% x \$20)) ÷ 29.86% = (\$0.14 + \$1.52 + \$1.33 + \$1.11) ÷ 29.86% = \$4.10 ÷ 29.86% = \$13.73

Win = 15.15% + 13.33% + 11.11% = 39.59% of the time

Average Win = ((15.15% x \$10) + (13.33% x \$10) + (11.11% x \$10)) ÷ 39.59% = (\$1.52 + \$1.33 + \$1.11) ÷ 39.59% = \$3.96 ÷ 39.59% = \$10.00

So, what do we do to maximize a 'win'. Well, simply put, nothing! After all, you have just added some extra money to the pot so take it with a smile and be happy! OK, what about minimizing the 'losses'? Well, this is the reason for adjusting the amount of the bet after a 'loss'. The table below shows you how that works in terms of ensuring that the wins tend to eliminate the losses over the short term. Since "Break Even" results neither aid nor harm us, this gives us a 57.01% win and a 42.99% lose percentage, on average.

"Pass" / "Don't Pass" Bet	% Won At Least 1 Bet	Win Bet Profit?	% Lost All Bets	"Lose" Loss?
\$5 (x1)	57.01%	\$10.00	42.99%	-\$13.73
\$10 (x2)	81.52%	\$6.27	18.48%	-\$41.19
\$25 (x5)	92.05%	\$8.81	7.95%	-\$109.84
\$55 (x11)	96.58%	\$0.16	3.42%	-\$260.87
\$135 (x27)	98.53%	\$9.13	1.47%	-\$631.58



Obviously, if we follow such a strategy of increasing the multiplier to cover the loss and resetting back to a x1 multiplier on a win, we end up putting a disproportionate amount of money at risk versus the potential gain. However, if we make the multiplier go up on a loss and down on a win, we are able to win some money as we move down the chart and some as we move back up again. Our bets can thus be proportionally smaller.

"Pass" / "Don't Pass"	% Won At Least 1	Win Bet Profit?		% Lost All Bets	"Lose" Loss?
\$5 (x1)	57.01%	\$10.00	< \$10.00	42.99%	-\$13.73
\$10 (x2)	81.52%	> \$6.27	< \$20.00	18.48%	-\$41.19
\$20 (x4)	92.05%	> -\$1.19	< \$40.00	7.95%	-\$96.11
\$40 (x8)	96.58%	> -\$16.11	< \$80.00	3.42%	-\$205.95
\$80 (x16)	98.53%	> -\$45.95	-----	1.47%	\$425.63

Now, although this strategy works if you have a large working budget, it is still very volatile. Thus a small run of 'bad luck' can quickly wipe out your bankroll. Extending the principle shown in the previous table, the optimum strategy is to obviously increase and decrease the bets in smaller increments. Since the odds of winning any particular bet are greater than the odds of losing, the tendency is for you to make most of your bets near the top of the table. Up to the third line (x3), you will notice that moving up or down the table will still make you money with a win. However, from line four (x4), even a 'win' after the previous 'win' will result in you losing money. Thus, on those occasions that statistical chance goes 'against the odds', YOU WILL LOSE. This is why it is extremely important to set limits on both your maximum win and maximum loss! The limit that helps to preserve the most of your bankroll is thus a x3 multiplier. After this, you are better off cutting your losses and starting again from a multiplier of x1.

"Pass" / "Don't Pass"	% Won At Least 1	Win Bet Profit?		% Lost All Bets	"Lose" Loss?
\$5 (x1)	57.01%	\$10.00	< \$10.00	42.99%	-\$13.73
\$10 (x2)	81.52%	> \$6.27	< \$20.00	18.48%	-\$41.19
\$15 (x3)	92.05%	> -\$11.19	< \$30.00	7.95%	-\$82.38
\$20 (x4)	96.58%	> -\$42.38	< \$40.00	3.42%	-\$137.30
\$25 (x5)	98.53%	> -\$87.30	< \$50.00	1.47%	-\$205.95
\$30 (x6)	99.37%	> -\$145.95	< \$60.00	0.63%	-\$288.33
\$35 (x7)	99.73%	> -\$218.33	< \$70.00	0.27%	-\$384.44
\$40 (x8)	99.88%	> -\$304.44	-----	0.12%	-\$494.28

-----You're Safe, The Math Lesson Is Over!

Simple Strategy For Successful "Pass Odds" Craps Betting

Just like the previous "Don't Pass Odds" strategy, the assumption is that you are at a casino offering x2 'Odds' bets. In the event that you are at a casino which only offers x1 odds, you would start off with \$10 "Pass/Don't Pass" bets but keep the 'Odds' bet at the same level.

Here is the basic "Pass Odds" strategy:-

- 1) Start with a 'multiplier' of x1.** Just like the previous strategy, you will be using this multiplier to take advantage of the fact that the majority of your bets will be at 'True Odds'.
- 2) Place a \$5 "Pass" AND a \$5 "Don't Pass" bet when the Shooter is making their come-on roll (\$10 bets at a x1 'Odds' casino).** Again, this acts as a 'hedge' for you.
- 3) Regardless of the 'point' established, take a \$10 "Pass Odds" bet. Wait it out until a result is established.** Unlike the previous strategy where you had a better than 50% chance of winning any given bet, you tend to lose more bets than you win. However, when you DO win, you earn more money than the "Don't Pass Odds" strategy. Indeed, as the odds paid out are 'True Odds', you win as often as in the previous strategy.
- 4) If you 'won' the 'Odds' bet by having the Shooter make their 'point' then decrease the 'multiplier' by 2 (to a minimum of 1). If you 'lost' the bet by having a 'seven-out' or by an initial roll of '12' in the come-out round, increase the 'multiplier' by 1 (to a maximum of 5). If you lose after the multiplier is x5, reset it back to 'x1'.** If you look at the math on the next few pages, the payout on any win will cover all of your losses until you have had 5 losses in a row. Thus, after 5 losses, give it up as a bad run so you do not lose too much money. Likewise, when you win, the reason that you decrease the multiplier by 2 is that it requires more than one throw and less than two for the odds to be in favor of winning. Thus you are more likely to profit if you move back two steps and then need to begin increasing the multiplier again.
- 5) If you've either made your desired profit or you've had a bad day and lost more than you are willing, STOP betting! Otherwise, go back to Step 2 and keep going.** Again, plan for a bad day of betting as well as planning for a good day. Don't play emotionally and STICK TO THE RULES!

WARNING – MATH FOLLOWS!-----

Just like last time, let's see how this plays out by covering all of the possibilities and the expected payouts on each facet of this betting strategy. To start, we'll look at what happens on the initial throw of the dice. Then we will cover what happens if the 'point' is 6 or 8, then 5 or 9 and finally 4 or 10.

If the first throw is 7 or 11 there are 8 possible combinations where you will break even. Likewise, with a 2 or a 3, there are 3 combinations that will cause you break even. Finally, on a 12, there is a single combination where you lose \$5. All remaining combinations result in the Shooter having a 'point' of either 4, 5, 6, 8, 9 or 10. There are 36 possible combinations. Thus, it should be obvious that the chance of 7 or 11 appearing is $(8/36) \times 100 = 22.22\%$ of the time. Likewise, the chance of a 'point' of 6 or 8 showing up is $(10/36) \times 100 = 27.78\%$ and so on.

OK, but what are the percentages for winning or losing once we have established the 'point'? Well, with the example of 6 or 8, there are 5 combinations where a 'point' will be made and 6 combinations where the Shooter will 'Seven Out'. Thus, the point is made $(5/11) \times 100 = 45.45\%$ of the time and a 'seven out' $(6/11) \times 100 = 54.55\%$. Since a point of 6 or 8 only occurs 27.78% of the time, the overall expected percentages are 6/8 'point' made occurs $27.78\% \times 45.45\% = 12.63\%$. Likewise, after a 6 or 8 'point', the Shooter will 'seven out' 15.15% of the time.

OK, how do we figure our win or loss? Well, it seems obvious you'll break even if a 7 or 11 appears on the initial roll (22.22% of the time), you'll also break even if a 2 or 3 appears (8.33% of the time) and lose \$5 if a 12 appears (2.78% of the time). What about the bets with 'Odds'? The \$10 "Pass Odds" bet on 4/10, for instance, will win you \$20 which, when added to the \$5 win from the "Don't Pass" bet and the \$5 loss from the "Pass" bet, gives you a net win of \$20 if the 'point' is throw again before the Shooter 'sevens out'. Likewise, if they DO 'seven out', you will lose the \$5 on the "Don't Pass" bet, win the \$5 "Pass bet" and lose the \$10 from the 'Odds' bet. The net loss is, therefore, \$10 in this case.

Let's table that out below (the percentages in the right column total 100%)

On First Throw
 7/11 (22.22% of time) = Break Even
 2/3 (8.33%) = Break Even
 12 (2.78%) = Lose \$5

Point is 6/8 (27.78%) – Make Point (12.63%) = Win \$12
 'Seven Out' (15.15%) = Lose \$10

Point is 5/9 (22.22%) – Make Point (8.89%) = Win \$15
 'Seven Out' (13.33%) = Lose \$10

Point is 4/10 (16.67%) – Make Point (5.56%) = Win \$20
 'Seven Out' (11.11%) = Lose \$10

That's all very well but how can we figure out, from that mass of numbers, whether the strategy would make or lose money in the long run? The first thing we need to figure out is the average amount that you bet in any given round. It should be apparent that, whether you break even (2,3,7,11), lose (12) or move onto the point round (4-5-6-8-9-10) on the first throw, you have invested \$10. If a 6 or 8 is the point (which occurs 27.78% of the time) you invest an extra \$10. On 5 or 9 (which occurs 22.22% of the time), you, again, invest an extra \$10. Finally, on a 4 or 10 (which occurs 16.67% of the time), you also invest an extra \$10.

$$\begin{aligned}
 \text{Average Spend therefore} &= \$10 + (27.78\% \times \$10) + (22.22\% \times \$10) \\
 &\quad + (16.67\% \times \$10) \\
 &= \$10.00 + \$2.78 + \$2.22 + \$1.67 \\
 &= \mathbf{\$16.67}
 \end{aligned}$$

If we do the same math as we did in the "Don't Pass" strategy, we find that the expected loss is **-0.1369**. Again, that's about 14 cents per bet as we would expect. Now, if we divide the \$0.1369 loss by the \$16.67 average stake, we get 0.0082123 which is the ratio of the average loss relative to the average stake. By multiplying this by 100, we find that the house margin is now approximately 0.82%.

Again, let us rearrange the probability table. This time, we note that for any sequence of bets, we expect the following outcomes.

$$\text{Break Even} = 22.22\% + 8.33\% = 30.55\%$$

$$\text{Win} = 12.63\% + 8.89\% + 5.56\% = 27.08\% \text{ of the time}$$

$$\begin{aligned}
 \text{Average Win} &= ((12.63\% \times \$12) + (8.89\% \times \$15) + (5.56\% \times \$20)) \div \\
 &\quad 27.08\% = (\$1.52 + \$1.33 + \$1.11) \div 27.08\% = \$3.96 \div 27.08\% \\
 &= \mathbf{\$14.62}
 \end{aligned}$$

$$\text{Lose} = 2.78\% + 15.15\% + 13.33\% + 11.11\% = 42.37\% \text{ of the time}$$

$$\begin{aligned}
 \text{Average Loss} &= ((2.78\% \times \$5) + (15.15\% \times \$10) + (13.33\% \times \$10) + \\
 &\quad (11.11\% \times \$10)) \div 42.37\% = (\$0.14 + \$1.52 + \$1.33 + \$1.11) \div \\
 &\quad 42.37\% = \$4.10 \div 42.37\% = \mathbf{\$9.68}
 \end{aligned}$$

Since "Break Even" results neither aid nor harm us, this gives us a 38.99% win and a 61.01% lose percentage, on average. Any workable betting strategy thus has to overcome the fact that, on any given bet, you will have a greater loss than a win percentage. However, on those occasions that you do win, you tend to win much more due to the better payouts odds than was seen in the "Don't Pass Odds" strategy. Additionally, since you are spending less money on each bet, your funds can survive a longer losing run in order to make a profit.

Let's table it out again. First, we will look at the minimum bets necessary to ensure a profit with any given win in the sequence.

"Pass" / "Don't Pass" Bet	% Won At Least 1 Bet	Win Bet Profit?	% Lost All Bets	"Lose" Loss?
\$5 (x1)	38.99%	\$14.62	61.01%	-\$9.68
\$5 (x1)	62.78%	\$4.94	37.22%	-\$19.36
\$10 (x2)	77.29%	\$9.88	22.71%	-\$38.72
\$15 (x3)	86.15%	\$5.14	13.85%	-\$67.76
\$25 (x5)	91.55%	\$5.34	8.45%	-\$116.16
\$40 (x8)	94.84%	\$0.80	5.16%	-\$193.60
\$70 (x14)	96.85%	\$11.08	3.15%	-\$329.12
\$115 (x23)	98.08%	\$7.14	1.92%	-\$551.76
\$190 (x38)	98.83%	\$3.80	1.17%	-\$919.60
\$315 (X63)	99.29%	\$1.46	0.71%	-\$1529.44

Again, although a slower initial progression than the "Don't Pass Odds" strategy, we still end up putting a disproportionate amount of money at risk versus the potential gain. Let's thus look at a table which uses smaller increments of the multiplier, as we did with the previous strategy.

"Pass" / "Don't Pass"	% Won At Least 1	Win Bet Profit?		% Lost All Bets	"Lose" Loss?
\$5 (x1)	38.99%	\$14.62	< \$14.62	61.01%	-\$9.68
\$10 (x2)	62.78%	> \$19.56	< \$29.24	37.22%	-\$29.04
\$15 (x3)	77.29%	> \$14.82	< \$43.86	22.71%	-\$58.08
\$20 (x4)	86.15%	> \$0.40	< \$58.48	13.85%	-\$96.80
\$25 (x5)	91.55%	> -\$23.70	< \$73.10	8.45%	-\$145.20
\$30 (x6)	94.84%	> -\$57.48	< \$87.72	5.16%	-\$203.28
\$35 (x7)	96.85%	> -\$100.94	< \$102.34	3.15%	-\$271.04
\$40 (x8)	98.08%	> -\$154.08	< \$116.96	1.92%	-\$348.48
\$45 (x9)	98.83%	> -\$216.90	< \$131.58	1.17%	-\$435.60
\$50 (x10)	99.29%	> -\$289.40	-----	0.71%	-\$532.40

From this, we find that we should move down the table, with each loss, until the multiplier is x5. Then reset to x1. On a win, reduce the multiplier x2.

-----**-You're Safe, The Math Lesson Is Over!**

OK, you've now pretty much mastered two strategies for continually profiting from the great game of Craps. At this point, a lot of people ask "Is it possible to profit from the other types of bet on the Craps table?" or "Is it possible to combine these strategies?" Well, this is a pretty complicated answer.

Certainly, there is no simple strategy that will produce consistent profits with the other Craps bets. The basic problem is that there is no other option to take an 'Odds' bet that has zero house margin. As a result, every other bet will, over time, consistently lose a little money unless a strategy is developed to know **when the optimal time to place a bet** is.

Remember near the beginning of this book when we noted that it was 100% IMPOSSIBLE to predict what would happen on the next throw of the dice? Well, this hasn't changed in the last twenty pages or so! As a result, there is no point in even looking at bets that are resolved in a single throw of the dice. There is just no way to reliably predict their outcome. Instead, we must only consider the remaining, low house margin, bets that are resolved over a series of bets. Thus, although **we do not know the likelihood of any particular throw** of the dice being a winner or a loser, **we do know the likely outcome of the series as a whole.**

The bets that we have left to consider are the Lay 4/5/6/8/9/10 bets where we are predicting that these numbers will not appear before we see the next 'seven'. Likewise, we have the Place 5/6/8/9 bets where we are instead gambling that we will see one of these numbers before the next 'seven' appears. Finally, are the Buy 4/10 bets which basically work the same as the Place bets. The basic difference is that a 'Buy' bet pays out true odds but you have to pay a commission whereas a 'Place' bet pays out slightly lower odds but no commission needs to be paid. On the whole, the 'Buy 4/10' bets have a lower house margin and are thus preferable to the 'Place 4/10' bets.

So, can we make a profit from these 12 bets? The answer is YES...but it will require a bit of work on your part.

Do you remember earlier in this book when we talked about the concept of "Uneven Distribution"? This is a fairly complex branch of mathematics that is literally the science of chaos or 'random systems'. Certainly, Craps qualifies as a random system so "Uneven Distribution" mathematics is highly appropriate as a predictive tool for these twelve possible bets. Cutting out all of the scientific explanation which would bore most people to death, the law of "Uneven Distribution" basically says the following.

"Random events do not spread themselves out exactly as the raw probabilities would indicate. Instead, they tend to either clump together more often than chance alone would dictate or appear less often than chance. Indeed, it is almost infinitely improbable that these events will appear on a schedule exactly as chance would indicate."

OK, but how can this help? Looking at the "Place 6" bet, what circumstances will make this a favorable bet so that we can win often enough to overcome the House Edge? Well, we want a '6' to appear as soon as possible and a '7' to not appear. In other words, we want a '6' to have a higher expected probability of appearing than normal and a '7' to be less likely to appear than normal. If we look at the raw probabilities of any given dice throw, this will NEVER happen. After all, a '7' is ALWAYS statistically more likely to appear (6 possible combinations out of 36) than a '6' (5 possible combinations out of 36). However, the laws of "Uneven Distribution" tell us that, due to this clumping effect, a 6 is less likely to appear if we have seen one within the last three throws of the dice. Likewise, if a 6 has not appeared within the last eight throws of the dice, it is more likely do so again. A similar situation is true for a 'seven' appearing. In this case, it is less likely to appear if it has done so within the last three throws and more likely if it has not appeared within the last six throws.

So, given these two facts, the optimal time to gamble on a 'Place 6' bet is when a **'7' has appeared within the last 3 throws** of the dice and a **'6' has not appeared within the last 8 throws** of the dice. This imbalance is enough to make you win this bet often enough to overcome the house edge.

The table on the next page shows how to turn each of these twelve bets into winning propositions by placing them at the right time. You will still lose bets but, on the whole, win more than you lose.

“Uneven Distribution” Strategy For Craps Betting

This strategy can be profited on all by itself, or, indeed, in conjunction with one of the previous two strategies.

Download simple software to keep track of this method by visiting <http://www.MakeSeriousMoneyOnTheInternet.com/CyclingProfit.htm>

Alternatively, you need a pencil, an eraser and the following table.

4	5	6	7	8	9	10

- 1) Look at each throw of the dice as it occurs.
- 2) Whether there are any check marks or not, place another check mark underneath each number.
- 3) If a 4,5,6,7,8,9 or 10 just appeared, erase all marks underneath that number.
- 4) Compare the number of check marks currently underneath each number against the table below. If the conditions match then make the indicated bet (as long as you do not already have this bet on the table).
- 5) After the next dice throw, go back to Step 2.

Make This Bet...	... If This Number of Checkmarks						
	4	5	6	7	8	9	10
“Buy 4” (\$10)	>= 12			<= 2 (Less Than Or Equal To 2)			
“Place 5” (\$10)		>= 9					
“Place 6” (\$12)			>= 8				
“Place 8” (\$12)						>= 8	
“Place 9” (\$10)							>= 9
“Buy 10” (\$10)							>= 12
“Lay 4” (\$40)	<= 5			>= 6 (Greater Than Or Equal To 6)			
“Lay 5” (\$30)		<= 3					
“Lay 6” (\$24)			<= 2				
“Lay 8” (\$24)						<= 2	
“Lay 9” (\$30)							<= 3
“Lay 10” (\$40)							<= 5

“Live” Casino Craps Etiquette

Many people are lured towards live casinos because of the amazing architecture, or incredible themed ambience. These people can end up flying long distances just to enjoy the experience of gambling in the biggest casinos in the world. They may have parties or get married at fancy restaurants or come to watch expensive concerts. Certainly, there is nothing wrong with any of these reasons. After all, the main goal is to have fun! There are, however, a few rules and simple good manners to follow when you're out playing Craps at a "live" casino.

Besides the rules of the actual game, certain unwritten rules of etiquette exist while playing Craps and are expected to be followed. Indeed, many people consider these guidelines as important as the actual formal rules of Craps. It would thus be wise for you to familiarize yourself with them before you approach a 'Live' Craps table.

At most casinos, when you walk up to a Craps table and try your hand at the game, you first have to ask the Boxman to convert a certain amount of cash or general casino chips into table chips. The Boxman will give you a stack of color coded chips (this process is called 'coloring' the player) with which you will play. There is a certain time period during which you will be allowed to place your bets. In between each throw of the dice, the Base Dealer will normally give you (and the other players) about 30-60 seconds to place your bets. When the Shooter is ready to roll, all players should remove their hands from the table area to avoid interfering with the dice. The Stickman will normally say a phrase such as "Hands High, Let 'Em Fly" or "Dice Are Out, Hands High!" or "No More Bets". If you hear any phrase like this, it is very important for you to stop yourself from making another bet until the throw is finished. It is regarded as extremely poor form to try to place a bet after this point and it is more appropriate for you to wait until the next throw of the dice. If you do ignore this advice and try to place bets anyway, you will normally provoke a warning and repeat offenders are often asked to leave the table.

Whenever the Shooter makes their 'point', a marker (or 'puck') will be placed on the table that will correspond with the 'point' number. Likewise, this marker will be removed when the 'Shooter' either makes their 'point' or 'sevens out'. This is thus an easy way of figuring out whether this is the 'come-on' round or the 'point' round in the betting cycle. After each throw of the dice, the Base Dealer(s) will remove all the losing bets from the table before paying off all the winning bets. Until this time, you should not touch or try to remove any of your

chips or winnings. If you do, you'll often be asked to leave the casino. In a live casino, the default assumption is that you want your winnings back but want the original bet to remain on the table. You must thus indicate that you wish to 'Pull Down' your bet to recover your initial stake after a win. Please thus collect your winnings AND stake unless you intend to make the same bet again!

When you are offered the dice to shoot, you may freely pass the dice onto the next player without any risk of offending anyone. It is quite common that players do not actually want to be the center of attention by throwing the dice as the Shooter. Obviously, at least one player must choose to be the Shooter who bets on either the "Pass" or "Don't Pass" bet. If there is no Shooter, there is no game!

If you do choose to be the Shooter, there are certain rules about how you handle or throw the dice. First, you cannot handle the dice with more than one hand. You must instead put the dice on the table and then pick them up with the other hand if you want to change hands. The dice must also remain over the table at all times. This reduced the possibility of using sleight of hand to switch out the dice. All throws should not be higher than eye level and should hit the far wall where the diamond patterns cut into the wall are designed to make the rolls more random. If you don't hit the far wall, this is known as a "Mellenberg" roll. As a general rule, these Mellenberg rolls are allowed if the dice traveled past the middle of the table. However, they are often also called by the Dealers as "No Rolls" since it is much easier to control the dice if they haven't hit that far wall. You are normally allowed to 'set' the dice any way you like before throwing them. For instance you could balance them on top of each other, set them to a certain number combination or space them so they are picked up by certain fingers. However, some casinos have "No Setting" rules and all will ask you to be quick about it if they feel it is slowing the game.

There are a few rules as far as where and how the dice may land. If the dice end up in the bank guarded by the Boxman, the Stickman's bowl (where the extra dice are kept) or the rail around the top of the table (where players keep their chips), a "No Roll" shall be called. It shall also be a "No Roll" if one or both of the dice leave the table completely. In this case, the Stickman will normally provide two new dice from the bowl. Many players are quite superstitious and will call out "Same Dice!" This means that the Boxman will carefully examine the original dice to ensure they haven't been switched out or damaged before they are returned to play.

Interestingly enough, there are some odd situations where a weird dice throw will be allowed. Dice are allowed to land on top of the various chips that players and Dealers have on the table, the 'point marker' or 'puck' or, indeed, those rare case where the dice have ended up stacked on top of each other! In these cases, if a particular die ('die' is the singular of 'dice' in case you are interested) comes to rest against another object, the number that would be on top of the die if that object were not there is regarded as the number showing. If it is impossible to tell, a "No Roll" will be called although this is really rare. The dice may also hit either the Dealer(s) or the Player(s) and still normally be regarded as a valid throw, as long as the person being hit did not actively interfere with the dice.

There are also certain rules as to how chips can be handled and bets placed. First, the Dealer(s) cannot touch the players or directly pass or receive chips to them. Instead, you must place your cash on the table and let the Dealer take the money from the table and place your chips in front of you. Likewise, when cashing out, put your chips in front of the Dealer and ask to cash out. They will place cash on the table in front of you (or direct you to cash out at one of the 'cages' if they don't have sufficient cash). When placing bets, you should put the chips on the table rather than just tossing them. If you throw your chips they may upset other chip stacks or land outside of the dealer's reach. When chips must be tossed, because you cannot reach, it is regarded as polite to attract the Dealer's or Stickman's attention and toss over as small an amount of chips as possible to cover the bet. For example, it is better to toss over a \$10 chip rather than 10 x \$1 chips.

A lot of Craps tables will let you call out a bet without having chips on the table. This is very consistent with the fast action of the game and allows players to make last second bets, as the dice are about to be thrown. For example, you might call out "\$100 on 4" and put your \$100 bill on the table. As long as the Dealer tells you directly "it's a bet!" then your bet has been accepted. If you don't hear anything or hear "no bet", assume that the bet was not accepted. A common reason for a bet to not be accepted is that it was unclear. For example, let's say you have a "Pass" bet already on the table and a 4 appears. You may call out "two fifty working on the 4". Did you mean \$2.50 or did you mean \$250? Likewise, did you mean that you wanted to take an 'Odds' bet on top of your existing "Pass" bet or did you mean that you wanted to "Place the 4"? Try to be as clear as possible when calling out bets, to avoid any possible confusion. Speaking of confusion, many casinos have a "No Call Bets" rule. This does not

mean, as it sounds, that you cannot call out bets. Instead, it means you must have chips in front of you already, rather than just cash. For example, if you lay down a \$100 chip and call out "\$25 on 6 and 8", the dealer will say "it's a bet" and return a \$50 chip to you as your change. Interestingly enough, the Dealer does not actually have to put \$25 chips on the table in the '6' and '8' boxes for this to be a valid bet. As long as they say "it's a bet", that is your trigger to know that the bet was accepted and you will be paid as long as a 6 or 8 shows up before the next 'seven'.

Craps players also have a lot of superstitions. These may seem strange, silly or even ridiculous to the uninitiated. However, many Craps players at the casino are deadly serious about these beliefs so you will quickly make yourself very unpopular if you disregard them! The first problem is that players regard it as bad luck to bet 'against' the Shooter. This means that the vast majority of players will be betting "Pass", working on the assumption that this is what the Shooter wants. In other words, they are betting that the Shooter will either initially roll a '7' or '11' (a 'natural') or make their 'point' rolled before the next '7'. Many bets that you will be making are on "Don't Pass". Betting on "Don't Pass/Don't Come" is essentially betting 'against the flow'. It is often colorfully referred to as "Dark Side" betting. Now, as long as you are letting the Dealers know your bets without making a big fuss of it, you will be just fine. Indeed, there will be other players betting with you. Nowhere on the table does it indicate who placed what bet and most players just focus on the "Pass" betting and the Shooter. However, **if you are a loud mouth and brag loudly** about how the "Pass" bet is a waste of time and that you have a great system etc-etc, **you are literally asking to be lynched!** OK, seriously, you will not really be lynched but you will get some very cold comments and stares in addition to being asked to leave the table if the dealers feel that you are causing a disruption to the other players. Keep in mind that the casino wants these other players to keep making losing bets more than they want you to keep placing winning bets! Another related superstition is that it is considered bad luck to say the word "Seven" after the come-on roll. Again, because of the nature of your bets, you probably want to see a 'seven' appear more often than most of the other players at the Craps table. Try to refrain, however, from uttering the word "Seven" after the come-out as many players consider this a curse of bad luck on the dice rolls. You will most definitely not want to follow the lead of other players who chant "6...6...6...6..." Can you imagine how unpopular you'll be if you are calling out "SEVEN...SEVEN...SEVEN...SEVEN!"? It would

be like sitting at a football game with the home team fans and shouting out how the Away team is going to kick the Home Team's ass! DON'T DO IT! It is, however acceptable to refer to 'Seven' by its nickname "Red" or "Big Red". For example, "Come On 'Big Red!'" would be regarded as a little 'odd' but acceptable. Another belief is that it is bad luck to change dice in the middle of a roll. For instance, if the dice fly off the table, many players cry out "Same Dice!" to ensure that they continue to play with the retrieved dice rather than a new set. The final superstition that you should be aware of is that it is regarded as extremely bad luck and poor form for the Shooter to leave the table after they have made a 'successful' come-on roll. In other words, if you have a 'Point' established (regardless of how you are betting), you are expected to continue throwing the dice until you either 'make your point' or 'seven out'. In the event that the Shooter does leave before the 'point' is resolved, the next Shooter takes over where the previous Shooter left off. Once a decision has been reached, this new Shooter will normally be given the opportunity to continue with a new come-out/come-on roll as would have been the case if the previous Shooter had not quit part way through.

The most important thing is to be courteous at all times. Try to avoid knocking over your neighbor's chips. Please be respectful when speaking to the Dealer(s) and the other players. It's also good practice to, every tenth throw or so, offer the Dealer(s) a small tip as a token of appreciation as this always portrays good manners. The most common way of 'tipping' is to put chips down on the table and say "For the Dealers" or "For the Boys". This is acceptable, even if the dealers are women! Another way of tipping is to place a bet for the Dealers. In this case, you might say "Dealers Don't Pass" or "Place 8 bet for the Boys". Ordinarily, a Dealer is required to pick up winning bets and the original stake that you have placed on their behalf. However, if you want the original "Dealer's bet" to remain in place, you should clearly say "I Control the Bet" which means that any winnings for that bet will be picked up by the dealers but the original bet will remain in place until you either lose the bet or you retract it.

The most important aim of the game is to have fun. Don't get drunk or boisterous as no one enjoys someone elbowing them while they are playing. Getting excited and shouting out, however, IS acceptable in the game of Craps! You should behave in a respectful manner and just concentrate on having fun. Who knows? Maybe Karma will reward you in some way!

Advantages Of Playing Craps At Online Casinos

Today many people around the world are getting hooked on playing Craps online. Indeed, online casinos are OUR favorite way of playing Craps! So, why would so many people be drawn to playing Craps on a computer rather than live? Surely the romance must vanish if you're not actually 'there'?

There are many reasons that people are moving from 'live' casinos to their online counterparts. First, there is a lot less effort involved in gambling online. People can sit in their pajamas, dining on Chinese food and Cherry Cobbler without having to worry about getting into a nice suit or wasting time and fuel driving an hour or two to get to the nearest casino. Next, the odds of winning or losing at the online casinos are exactly the same compared to playing at the live casinos and no 'tipping' is expected (or, indeed, possible!).

Players can decide when and where they would like to play the game. For a lot of players, another advantage of playing Craps online is that it doesn't have any unnecessary distractions. For example, live casinos have the constant background noise, lingering smoke from cigars and cigarettes as well as the unwanted advice from other players at the table. When players choose to play Craps online, with real money, they can enjoy playing the games from their home or, indeed, any other location such as while waiting for a plane at the airport.

For us the main advantage of playing Craps online can be summed up in two words – **FREE MONEY!** Many online casinos offer strong financial incentives, such as matching your deposits or giving you free money to play with, which live casinos would never normally dream of doing. These incentives are covered in more detail in Appendix A.

The first thing you will want to do before spending any of your real, hard earned, money is, of course, to practice. In other words, you need to become familiar with how to apply your strategy, otherwise you WILL make mistakes when you start gambling for real. As mentioned earlier, a good place to practice online is at Bodog. The reason for this is that you don't have to go through any complicated sign up process. Instead, you can just link directly to their website and just start a practice game (ie, no real money required!). That link, again, is located at:-

<http://casino.bodoglife.com/free-craps.jsp>



Thank You For Reading...



You now have all the tools in your hand that you need to make a killing playing Craps at any casino, whether online or live. Just remember the few golden rules.

- 1) Don't gamble if you can't afford to lose! Help can be found at <http://www.gamblersanonymous.org>.*
- 2) Don't play emotionally.*
- 3) Stick to the rules!*
- 4) ...and don't forget to have fun!*

I truly hope that you have enjoyed reading this book as much as I enjoyed writing it. Here's a toast to your good fortune!

Appendix A – Online Casino Strategies And Casinos Offering Cash Signup Bonuses Or Free Play Options

Many online casinos offer great incentives to new players. Sometimes, they give you a 'Matching Bonus' of free money to play with based upon your own deposit. The catch is that there are certain conditions that must be fulfilled to claim this free money such as the need to make a certain number of bets before you are able to withdraw any of your money. Normally, this means that the odds are stacked in favor of you losing the vast majority of your money to the casino before you are allowed to withdraw anything! The casinos are happy to offer these incentives as they believe (correctly!) that most players will lose the free bonuses in addition to a great deal of their own money too at the same time! You, on the other hand, have an advantage in that you can use the techniques in this book to either limit your losses (so that you can walk away with at least a portion of the free bonuses) or to rapidly build your bank before the casino in question realizes what is going on. Our favorite bonus offered by online casinos is the 'Free Play' option. This is where the casino gives you a certain amount of time or throws of the dice for free. Whatever you win is yours! Again, the casino is hoping that you will be tempted to throw your own money after the win and then lose it all. Cynical? Yes, but sadly true!

Now, whether you win a little or you win a lot, we recommend that you DO NOT withdraw all of your money from a given casino. This is because casinos will often give free bonuses to players who leave funds with the casino. This makes them feel safe in that you are going to gamble again and eventually lose your money. Use this to your advantage! After all, you will want to come back again at some point!

If you are reading the electronic version of this book then the link below should be live. If not, or if you are reading the printed version, then please, instead, type the following into your web browser. Enjoy!

<http://www.MakeSeriousMoneyOnTheInternet.com/CyclingProfit.htm>

Incidentally, as a free bonus, while you are visiting the link above, you can also download "The Cycling Profit System" for playing Roulette effectively. Enjoy!

