Animated Craps

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The House

The House is another term for "The Casino".   It includes the personnel, equipment and rules used to play the game.

Rolling the Game

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Introduction

Animated Craps is a fully featured craps game for Windows™.

This comprehensive help file includes everything you need to know to play real casino craps.   Together with the game software, you have the necessary tools to learn and play craps with confidence.   As a

beginner you'll learn the basics of the game, things to do and things to avoid.   You'll gain your experience quickly without risking any real money.   As an advanced player you can test and develop strategies, hone your skills, and with a little luck make yourself a winner!

Animated Craps is chock full of features: A Configuration screen allows you to set up the table to match your favorite casino, or just to suit yourself.   An Auto-Play screen allows you to select from a variety of automatic features.   An Auto-Bet screen allows you to program the game to make bets automatically.   A Hyper-Drive feature allows you to play the whole game **hands-free** for up to 10 million rolls!   And finally, numerous Statistics help you keep track of what's going on.

You can run Animated Craps with as little or as much automation as you please, because you can play manually and automatically at the same time.

Animated Craps is fully help context-sensitive, which means you can go directly to specific help topics by pressing the **F1** key in any of the following circumstances:

- From any menu item.
- From any pop-up screen.
- While pointing at anything on the craps table with the mouse-pointer.

Animated Craps' graphics were designed to fit a 640X480 resolution using either a normal or "Small Fonts" driver.   Monitors set to higher resolutions will work fine but have the effect of shrinking the game screens.   "Large Fonts" drivers will also work fine but some of the displayed lettering and possibly some of the window/control scaling may be slightly off.   The colors utilize a 256 color palette.   Certain drivers set to numbers of colors higher that 256 have been known to display a blacked out table (consult your Windows documentation on how to select a different driver through Windows' Control Panel).   The game plays easily with a mouse and/or Keyboard and the Sounds utilize a sound card or PC speaker!

If you've never played craps before, you should begin with the Help Contents section on **Understanding Craps** and read through each item, from the Overview to Putting it all Together.   Then read about the most basic bet on the table, the Pass Line bet, and go back to the table to experiment with it.   Ignore everything else except for the dice and the Marker Buck (that round disc at the top of the table that says OFF or ON).   It will make more sense after you've tried it a few times.   Next read about when and how to make an Odds bet.   When you've mastered the Pass Line and Odds bets, you can already consider yourself a good craps player even if you never learn about or play any of the other bets!

Craps is an exciting, fast-paced game with lots of action taking place at once.   Just watch any full table sometime, and you can't help but marvel at the scene: hands and chips are everywhere, Dealers are taking down and paying off bets, players are collecting winnings and making new bets.   Each roll of the Dice brings a flurry of activity with only seconds to go until they come flying again.   The players seem to develop a camaraderie, and can often be heard cheering the Shooter.

To the uninitiated, the game can appear overwhelming and confusing.   But craps doesn't have to be any more complicated than you want to make it.   The craps table includes many possible wagers.   You don't have to (and shouldn't) play them all.   With some practice on Animated Craps you'll gain the knowledge to know what bets to make and how to take control of your playing.   Soon you'll have memorized the Odds Payoffs and will be craving the fast action that attracts players to craps.   Have fun!

Note: Windows is a trademark of Microsoft Corporation.

Overview

Craps is a game where wagers are placed dependent on the outcome of the roll of two <u>Dice</u>.   Each die has 6 sides marked with 1 through 6 dots to represent numbers.   The face-up values of both rolled dice add together to form one number.   There are 36 possible combinations of the dice with numbers ranging from 2 to 12.   The number 7 as it turns out, can be rolled more ways than any other number.   Therefore it should come as no surprise that the game in large part hinges on the number 7.

Take a moment to look at the table of <u>Dice Combinations</u>.   Notice how the number 7 marks the center point of all the numbers, that it has the greatest number of combinations, and that the further away a number is from 7, the fewer combinations it has.   Also notice how the table forms a symmetrical triangle with each set of numbers on opposite sides of the 7 (such as the 6/8 or 3/11) having equal numbers of combinations.

Any number of possible wagers can be devised using this table, and certainly no craps <u>Layout</u> could ever include them all.   But by using the number 7 as the focal point and by basing bets and payoffs versus the 7, the symmetry of the dice combinations is put to use.   Bets that do this are called the <u>Pass Line</u>, <u>Don't Pass</u>, <u>Come</u>, and <u>Don't Come</u> bets.   They are in essence the heart of the craps game and among the best bets you can make in any casino since the <u>House</u> has only a very small <u>Advantage</u> on them.   <u>Place</u>, <u>Buy</u>, and <u>Lay</u> bets as you'll see also hinge on the 7 but give the House a larger advantage.   There are some bets however, which are not hinged on the 7.   They are <u>One-Roll</u> or <u>Proposition</u> bets.   They give the House the largest advantage of all, and therefore are among the worst bets you can make.   But regardless of the bet type, the game is a simple matter of comparing the number of possible winning and losing dice combinations.   These are called the <u>Odds</u>.

For instance, let's devise a bet where the number 8 versus the number 7, such that if an 8 is rolled the player wins, and if a 7 is rolled the player loses.   Any other roll we'll ignore.   Looking at the <u>Dice Combinations</u> we see that there are 5 possible ways to roll a winning 8, and 6 possible ways to roll a losing 7.   We call this the <u>True Odds</u> and we say they're **5 to 6** (annotated as 5:6).   Well you wouldn't want to make a wager where you have more chances of losing than winning would you?   Not unless you're offered some higher payoff to compensate you for your greater risk.   In a true system we do this by paying you what the <u>Odds</u> are **against** winning - in this case that means paying you **6 to 5** (6 won for every 5 bet).   This keeps the system in balance.   Thus, if we were to have a perfect distribution of 36 rolls of the <u>Dice</u> and we bet $5 on each roll, we would win $6 on 5 of the rolls (total $30) and lose $5 on 6 of the rolls (total $30).

But what are the chances of having a perfect distribution of rolls?   In the short run - very small.   And herein lies the only reason you would want to play craps at all - the hope that the distribution of rolls is unbalanced and favors your bets for the amount of time that you are playing.   Note that <u>time</u> is the critical element here.   For as time and the number of rolls increases, the actual ratios of numbers rolled will likely approach a perfect distribution.

Well, so what?   In a true system your losses equal your wins, right?   Right.   But you don't imagine that the <u>House</u> stays in business watching you break even do you?   The true system has been altered!   The House takes a <u>Percentage</u> or cut out of every bet on the table using a variety of different methods.   In some instances you are simply paid <u>Odds</u> that are less than true.   For example, if you make a straight wager on the number 8 (called a <u>Place</u> bet), instead of paying <u>True Odds</u> of 6 to 5 (or 1.2 to 1), the House pays <u>Adjusted Odds</u> of 7 to 6 (or 1.167 to 1), for a calculated 1.52% advantage.   In other instances, the House pays True Odds but only after an up-front **Commission** (called <u>Vig</u>) has been paid.   For example, you may <u>Buy a Bet</u> for a 5% <u>Vig</u>.   In still other instances you must first make what's called a <u>Flat Bet</u> bet that pays <u>Even-Money</u> before you may place what's called an <u>Odds</u> bet that pays <u>True Odds</u>.   Rest assured that the House has figured their percentage into each bet one way or another.

The interesting thing however, is that the <u>House Percentage</u> is not the same on all bets   It can range from less than 1% to over 16%.   In some case, it can even go over 33% - that's a whopping difference!   Granted, you can win any bet, but when you're bucking the higher percentages it's a lot tougher.   So, if

you're going to stand any real chance of winning, it would behoove you to learn which bets have the lowest percentages and how to play them.   Read on!

Dice Combinations

All the 36 possible combinations of 2 <u>Dice</u> are organized in the table below:

#	Dice Combinations (ways)						Number of ways
2	1-1						1
3	1-2,	2-1					2
4	1-3,	2-2,	3-1				3
5	1-4,	2-3,	3-2,	4-1			4
6	1-5,	2-4,	3-3,	4-2,	5-1		5
7	1-6,	2-5,	3-4,	4-3,	5-2,	6-1	6
8	2-6,	3-5,	4-4,	5-3,	6-2		5
9	3-6,	4-5,	5-4,	6-3			4
10	4-6,	5-5,	6-4				3
11	5-6,	6-5					2
12	6-6						1

Probability

The ratio of the number of ways an event can happen, to the number of all possible outcomes.   In simpler terms, it means the chance of something happening.   For instance, out of 36 possible Dice Combinations, the number 7 can be rolled 6 ways.   So the probability of rolling a 7 is 6/36 or 16.67%.   In other words, every time you Roll the Dice there's a 16.67% chance that you'll roll a 7.

| #	Probability	
2	1/36	2.78%
3	2/36	5.56%
4	3/36	8.33%
5	4/36	11.11%
6	5/36	13.89%
7	6/36	16.67%
8	5/36	13.89%
9	4/36	11.11%
10	3/36	8.33%
11	2/36	5.56%
12	1/36	2.78%

Odds

Odds are a comparison of <u>Probabilities</u>, or the number of ways one event can happen versus another. See the <u>Table of Odds and House Advantages</u> for a complete list of odds.

In craps the **True Odds** of a bet are figured by comparing the actual numbers of <u>possible</u> winning and losing <u>Dice Combinations</u>.   The only bets that pay True Odds are <u>Odds</u> Bets associated with the <u>Pass Line</u>, <u>Don't Pass</u>, <u>Come</u>, and <u>Don't Come</u> bets.   This means that the payoff ratios on these bets are a direct reflection of the True Odds.   For instance, there are **6** ways to roll a 7, and **5** ways to roll an 8, so the True Odds of rolling a 7 versus an 8 are **6 to 5**.   Therefore, an Odds bet on the 8 will pay $6 for every $5 you bet.   <u>Lay</u> bets, and <u>Buy</u> bets also pay True Odds but only after an up-front commission (or <u>Vig</u>) has been paid.   The payoffs on all other bets are to **Adjusted Odds**.   This means that they're arbitrarily set at something less than true to maintain the House advantage.   For example, although the True Odds on a <u>Twelve</u> bet are 35 to 1, many casinos pay it at 30 to 1, some pay it at 29 to 1.   They could payoff at even less if they felt so inclined, but they usually don't stray too far from the norm.

Table Layout
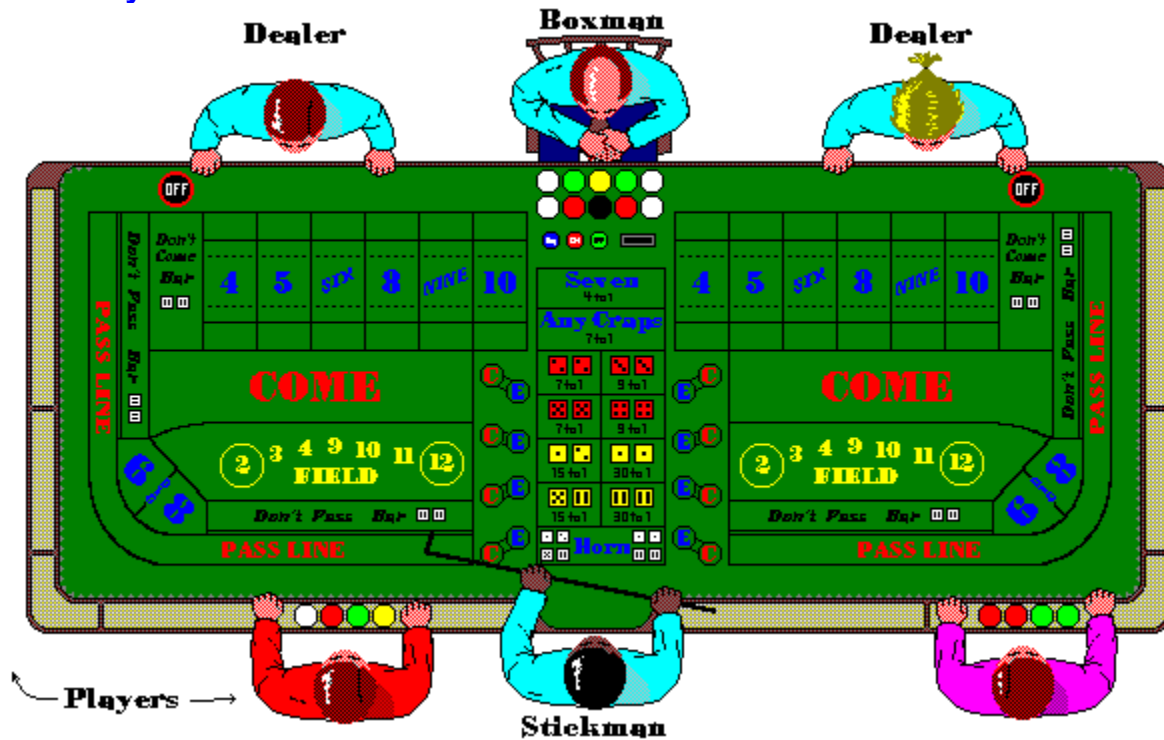
Shown above is a full craps layout. There are three main sections: The two outer sections are essentially mirror images of one another and are each manned by a Dealer. The center section is a common betting area for both ends of the table and is manned by a Stickperson. The clear area between the wall of the table and the outlined bets is called the Apron. Each table usually has one seated Boxperson but when action is heavier there may be two and when lighter there may be none. The players stand anywhere around the Rails adjacent to the Pass Line.

Each outer section can be broken into two areas:

Self-Service Area

The **Self-service Area** includes the Pass Line, Don't Pass, Come, Don't Come, Field, and Big 6 / Big 8 bets. These are bets that you can physically place yourself by putting your Checks directly on the appropriate part of the layout .

Dealer's Cash Register

The **Dealer's Cash Register** includes the six boxes numbered 4 through 10, known as Point Boxes. These Point Boxes include Place, Buy, Lay, and established Come and Don't Come bets together with any Odds. As the name implies, this is a hands-off area! The Dealer is the only one who's allowed to handle these bets. The top and bottom lines on either side of the printed Point Numbers are where Place bets are positioned, with the interior reserved for Buy, Come and Come Odds bets. The separate area on top of each Point Box is where Lay, Don't Come and Don't Come Odds bets go.

The center section of the table contains the Proposition bets and is also a hands-off area. The Stickperson is in charge of the bets there.

The Dealers use a system to keep track of whose bet is whose on the layout. This system is fairly simple

- your bets are placed in relation to where you stand at the table and how far you are from either the Stickperson or the Dealer.   For instance, let's assume that eight players are gathered around the half of the table to the Stickperson's left.   Shown here, the 1st player on the Stickperson's left has a $30 Place 8 bet and a $5 Come 8 bet with $10 in Odds.   The 2nd player has a $30 Place 8 bet, the 3rd has no bet, and the 4th has a $25 Come 8 bet.   The 1st, 2nd, and 3rd players on the Dealer's right all have $6 Place 8 bets, and the 4th has a $5 Come 8 bet with $10 in Odds.
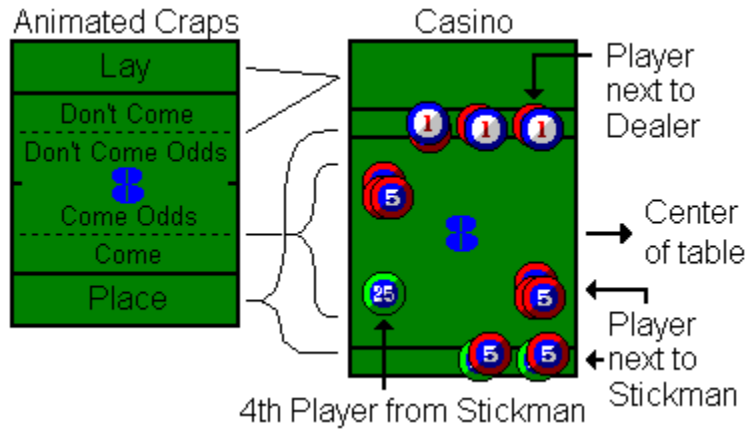
Checks / Chips

Instead of playing with cash, the casino uses chips called **Checks** (or Cheques).   Checks generally come in $1, $5, $25, $100, and $500 denominations, and are sometimes referred to by **Color**.   Typical colors are $1 - white, $5 - red, $25 - green, $100 - black, and $500 - yellow or purple.

When you want some smaller denomination checks, just ask the <u>Dealer</u> for **Check-change** or ask for a color, e.g. give the Dealer a green check and say you'd like all red - you'll get five red checks in return. Ask for white and you'll get 25 white checks.   When you want some larger denomination checks, tell the Dealer you want to **Color-up**.   However, Dealers generally prefer that you hold off on Coloring-up until you're finished playing.   Then rather than juggling your hoard of checks to the cashier's cage, the <u>Boxperson</u> will count them out and give you back fewer checks (in larger denominations) to carry.

Dice

At the side of the table next to the <u>Stickperson</u> is a small bowl where a number of dice (generally from 4 to 8) are kept.   The dice are perfect cubes to within 1/10,000 of an inch with sharp edges and corners to give them more bounce and ensure random rolls.   They're made of hard, transparent plastic, usually red (but sometimes another color), and marked with a code number as well as the casino's name and logo. The opposite sides of each die always add up to 7.   For instance, if the 5 is showing on top, you know that the 2 is on the bottom.   See also <u>Roll the Dice</u>.

Marker Buck / Puck

During play, a Point-Marker called the **Marker Buck** (or **Puck**) is used to denote whether the Shooter is on a Come-Out Roll or has established a Point.   The Marker Buck is a round disc a little less than 4" in diameter, marked on one side with the word **ON** and the other side with the word **OFF**.   In some casinos one side is marked with the word **Point** and the other side with the word **Come-Out** (which are probably more descriptive markings).   It's important to remember that the Marker Buck marks the point for the Pass Line and Don't Pass bets.   The points for Come and Don't Come bets are marked by moving the wagered Checks to the appropriately numbered Point Boxes.

On / Off / Buy / Lay Buttons

ON, OFF, BUY, and LAY buttons are small chips (smaller than Checks) used to denote the status of certain wagers.   They're placed on top of the wagered checks by the Dealers.

The Crew

The typical craps table is staffed with a crew of four: one seated **Boxperson**, two standing **Dealers**, and one standing **Stickperson**.

Boxperson

The **Boxperson** is in charge of the table.   He or she sits by the House Bankroll at the side-center of the table between the two Dealers, oversees the action, inspects Dice, settles disputes, and ensures that the game is conducted properly.   The Boxperson collects and counts all the cash presented at the table and then slips it into a narrow slot in the layout where it falls into a **Drop-box** - hence the name Boxperson.

Stickperson

The **Stickperson** controls the flow of the game.   He or she stands at the side-center of the table opposite the Boxperson, calls the rolls, handles Proposition   bets, and wields a long L-shaped stick with which to retrieve the Dice after being rolled, and to present the dice to the Shooter for the next roll.   A good Stickperson talks up the game, adding lively banter to his or her calls and peddling the Proposition bets for the House.   This position is also termed being **On the Stick**.

Dealers

There are two standing **Dealers** who handle most of the wagering at the table.   The Dealer's position is also termed **On Base**, and it is this person who you'll have the most contact with.   The Dealer takes down losing bets and pays off winning bets.   The Dealer will sell you Checks for your cash or make Check-Change or Color-Change when you need different denominations.

A busy table can really keep a crew hopping - sometimes you wonder how they keep all the bets and payoffs straight.   So if you're getting fast, efficient, and friendly service, you might want to reward them by putting down a Toke once in a while to show your appreciation.

Table Limits

The minimum and maximum amounts that may be wagered per bet, as well as the <u>Odds Allowed</u> factors, are posted on a small placard at the side of the table near each <u>Dealer</u>.   A typical table might have a $5 minimum, $1000 maximum, and Double Odds allowed.   The limits usually apply to all bets except the <u>Proposition</u> and <u>Odds</u> bets.

For <u>Proposition</u> bets the minimum is usually the smallest denomination <u>Check</u> in use at the table and the maximum is computed based on an arbitrary maximum payoff.   For instance, the maximum payoff might be 3 times the posted maximum bet.   So on a table with a posted $1000 maximum bet, the maximum payoff would be $3000.   Therefore on a bet like the <u>Twelve</u>, which pays 30 to 1, you could bet a maximum of $100.   Don't worry about figuring this out - just ask one of the <u>Crew</u> how much you can bet.

For <u>Odds</u> bets, the maximum is based on a multiple of the <u>Flat</u> bet.   For instance, on a $1000 limit, <u>Double Odds</u> table, the Flat bet would be limited to $1000, but the Odds bet could be $2000 or as much as $4000 on the <u>Don't Pass</u> or <u>Don't Come</u> bets.

The limits at casinos vary and may sometimes change in the midst of your playing - usually as a function of how many players are present.   The <u>House</u> would like to maximize its profits by keeping its tables full of players who bet lots of money.   When there is an abundance of players, raising the minimum bets will effectively force players with smaller <u>Bankrolls</u> to leave the tables and make room for the **High Rollers** (big bettors).   Conversely, when players are scarce, lowering the minimum bets may lure back the small fry.

In Animated Craps you can set different maximum and minimum limits on the <u>Configuration</u> screen.

Come-Out Roll / Establishing a Point

Every game has to start somewhere.   With craps it's the **Come-Out Roll**.

Rolling the Dice generates series of numbers that may be thought of as having beginnings and endings. A series may begin and end on the same roll, or it may be many rolls long.   The beginning of each series is called the **Come-Out Roll** and the end is called a Decision.   One or more decisions for a Shooter compose a Hand or a Shoot.

On the Come-Out Roll the Dealer turns the Marker Buck to display **OFF** and usually places it to the side of the table.   The Shooter then rolls the Dice.   If the number rolled is a Natural (2, 3, 7, 11, or 12) then a decision is reached immediately and the next roll will be another Come-Out Roll.   On the other hand, if the number rolled is a Point Number (4, 5, 6, 8, 9, or 10) then a Point is said to be **Established**.   The Dealer marks the Point by turning the Marker Buck over to display **ON** and placing it on or next to the appropriately numbered Point Box - this is known as the **Shooter's Point**.

Once the Shooter's Point has been Established, the Shooter continues rolling until the Point is rolled again or a 7 is rolled.   That is to say the Shooter either Passes or Sevens-Out.   Another way of saying it is, the Dice Pass or the Dice Don't Pass.   Rolling either one results in a Decision and the next roll will be another Come-Out Roll.   Don't get confused by the term "Pass".   When the Shooter Passes, he does not pass the dice to the next player.   He retains control of them and continues his Hand until he Sevens-out.   Once his Hand is ended, then the Stickperson passes the dice clockwise to the next Shooter.   Note that a Shooter who is betting that the dice will <u>not</u> Pass (as with a Don't Pass bet) still retains and loses control of the Dice in the same manner even though his bets win on a Seven-Out and lose on a Pass.

Through time-honored tradition, Place, Buy, and Come Odds bets are automatically considered to be OFF during the Come-Out Roll.   In other words, they are out of action and will not win or lose.   Once a Shooter's Point is Established, they are considered to be back ON again.   The reason for this is because the majority of players bet the Pass Line where a Come-Out Roll of 7 is a winner.   But since 7 is a loser on these other bets, they feel that turning them OFF de-conflicts them.   However, you can call any of them ON if you'd like, especially the odds since they lower the House's Advantage.

Here's an example of a sequence of rolls that shows Come-out rolls and Points Established:

Roll

	Game begins / Dealer announces "Come-out roll"
4	Point established / Dealer marks the 4 with the Marker Buck turned to display **ON**
11	No decision / Shooter keeps rolling
6	No decision / Shooter keeps rolling
12	No decision / Shooter keeps rolling
4	Shooter Passes / Pass Line wins / Don't Pass loses / Same Shooter rolls / Next roll is a new Come-out roll
11	Natural / Pass Line wins / Don't Pass loses / Same Shooter rolls / Next roll is still a Come-out roll
3	Natural / Pass Line loses / Don't Pass wins / Same Shooter rolls / Next roll is still a Come-out roll
10	Point established / Dealer marks the 10 with the Marker Buck turned to display **ON**
2	No decision / Shooter keeps rolling
9	No decision / Shooter keeps rolling
7	Seven-out / Pass Line loses / Don't Pass wins / Shooter's hand ends / Next roll is a new Shooter and Come-out roll / Dealer turns the Marker Buck to display **OFF**

What Bets are Available?

Most craps tables offer the following bets:

Pass Line	**Place**	(4, 5, 6, 8, 9, 10)
Don't Pass	**Buy**	(4, 5, 6, 8, 9, 10)

Come	**Lay**	(4, 5, 6, 8, 9, 10)
Don't Come	**Big 6 / Big 8**	
Odds	**Hardway**	(4, 6, 8, 10)
	One-Roll	(2, 3, 11, 12, Any Craps,
		Any Seven, Over 7,
		Under 7, C&E, Field,
		Horn, Whirl, Hop)

All of these bets are marked on the Layout except for Odds and Hop bets (although occasionally you'll find a layout that does display Hop bets).

When you make a bet, your Checks are placed in the appropriate area on the table Layout relative to where you're standing at the table.   See How do I make a bet?.

Some bets can be put up or taken down at any time and others only at certain times.   Some can be turned OFF or ON, and some are automatically OFF or ON at certain times unless you tell the Dealer otherwise.   Some bets can be increased and some cannot.   Some can be decreased and some cannot. Most importantly, they all have different payoffs and different House Percentages.

Moreover, bets can be thought of as falling into one of two categories: **Do** bets and **Don't** bets.   Do bets are those where you hope that a number or numbers will roll, and Don't bets are those where you hope that a number or numbers will not roll.   These categories are also known as betting either With or Against the Dice.

Seem confusing?   Well it's not really.   Actually, some of these options just make the game more fun to play.

With / Against the Dice

In general, betting **With the Dice** means you are betting that a number or numbers **will** be rolled. Betting **Against the Dice** means you are betting that a number or numbers **will not** be rolled.

Betting on the <u>Pass Line</u>, <u>Come</u>, or <u>Place</u> bets is said to be betting **With the Dice** or **Right** betting.   You are betting that <u>Point</u> numbers will be rolled before a 7.

Betting on the <u>Don't Pass</u>, <u>Don't Come</u>, or <u>Lay</u> bets is said to be betting **Against the Dice** or **Wrong** betting.   You are betting that Point numbers will <u>not</u> be rolled before a 7.

These however, are just terms and should not be construed to indicate the correct or incorrectness of any bet.

Flat Bets / Odds Bets

The <u>Pass Line</u>, <u>Don't Pass</u>, <u>Come</u>, and <u>Don't Come</u> bets are the heart of craps and all possess some common properties.

They are <u>Standing</u> bets, meaning they can either win, lose, or stand (remain in play) depending on the roll of the <u>Dice</u>.   Unlike <u>One-Roll</u> bets, Standing bets may remain in play indefinitely until their particular winning or losing numbers are rolled.

Each of these bets has two components:

1)   A **Flat** (primary) bet - made <u>before</u> a <u>Point is Established</u>.
2)   An **Odds** (secondary) bet - allowed only <u>after</u> a Point is Established.

When you first make a Flat bet, the next roll of the <u>Dice</u> determines 1 of 2 things:

1)   If a <u>Natural</u> is rolled, the bet either wins, loses, or <u>Stands-off</u>.
2)   If a <u>Point Number</u> is rolled, a <u>Point is Established</u> and marked by the <u>Dealer</u>.

For <u>Pass Line</u> and <u>Don't Pass</u> bets, the Point is marked with the <u>Marker Buck</u> and is known as the <u>Shooter's Point</u>.   For <u>Come</u> and <u>Don't Come</u> bets, the Point is marked by picking up the bet and moving it to the appropriately numbered Point-box and is known as the <u>Come Point</u> or <u>Don't Come Point</u>.   Rolling then continues until a 7 is rolled or the Point is rolled again.

<u>Naturals</u> are the numbers 2, 3, 7, 11, and 12.   They only affect Flat bets before their Points are Established and are ignored afterwards.   The **Do** bets (<u>Pass Line</u> and <u>Come</u>), win on Naturals of 7 or 11, and lose on 2, 3, or 12.   The **Don't** bets (<u>Don't Pass</u> and <u>Don't Come</u>), are almost a mirror image.   They win on Naturals of 2 or 3 and lose on 7 or 11.   The difference is 12 which results in a <u>Stand-off</u> - neither a win nor a loss.

<u>Point Numbers</u> are the numbers 4, 5, 6, 8, 9, and 10.   Once a <u>Point is Established</u>, the fate of the wager changes into a contest between rolling the same number again and rolling a 7.   For the **Do** bets rolling the same number results in a win, and rolling a 7 results in a loss.   For the **Don't** bets the opposite is true - rolling the number again results in a loss and rolling a 7 results in a win.

Yes, that's right - all these bets can both win and lose on a roll of 7 - depending on whether it's rolled before or after a Point is Established!

On the <u>Come-Out Roll</u> for the <u>Pass Line</u>, or the initial roll for a <u>Come</u> bet, the player enjoys a 2 to 1 advantage over the <u>House</u> with 8 rolls that win (six - 7's plus two - 11's) versus 4 rolls that lose (one - 2, two -3's, plus one - 12).   However, <u>after</u> a Point is Established, the advantage swings back to the House because now no matter what Point has been Established, there are fewer ways to repeat it and win than there are ways to roll a 7 and lose.   This means that on average you'll lose these bets whenever a Point is Established, and also explains why the House won't let you remove them once established.   If they allowed you to only make bets when you had the Advantage and then remove them when you didn't - they'd go broke in a heart beat!

For the <u>Don't Pass</u> and <u>Don't Come</u> bets nearly the reverse is true.   On the Come-Out Roll for the Don't Pass, or the initial roll for the Don't Come bet, the House has the Advantage of 8 to 3.   However, <u>after</u> a Point has been Established, the Advantage swings to the player!   Now there are more ways to roll a 7 and win than there are ways to repeat the established number and lose.   So on average you'll win these bets whenever a Point is Established.   This explains why the House would be more than happy to let you remove them from the table.   After all they're in business to make money and have no qualms about letting you relinquish your well-earned advantage.

The <u>House</u> pays Flat bets at <u>Even-Money</u> and Odds bets at the <u>True Odds</u> of the Point rolled.   You don't

have to Bet the Odds if you don't want to, but they're actually the best bets on the table because by themselves, they have no House Advantage.   That's not to say they swing the advantage in your favor - the House still has the edge when you combine them with the Flat bets you're obliged to make.   But since any other bet on the Layout exposes you to even more of the House advantage, a bet with no advantage is a good deal!   In essence, the larger the Odds bet is allowed to be, the smaller the House's edge becomes.   You can't eliminate the edge, but you can whittle it down.   For this reason you should always bet Full Odds when able and play at tables that offer the largest Odds Factors.   See the discussions on Some Thoughts on Craps and Gambling and Pushing the House.

Since Odds bets have no House Advantage or disadvantage, you may place or remove them at any time (or call them ON of OFF at anytime).   Additionally, **Come Odds** bets are automatically considered **OFF** (Not Working) on the Come-Out Roll unless you call them **ON**.

Curiously, Odds bets are not depicted anywhere on the Layout.   So where do they go?

The **Pass Line Odds** bet is placed next to the Pass Line bet in the open area of the table (Apron).   This is called Behind the Line.   The **Come Odds** bets are placed on top of their Flat bets and slightly offset. This of course is done by the Dealer.

The **Don't Pass Odds**, and **Don't Come Odds** bets are placed next to their Flat bets and either Bridged or Heeled.   If the payoff for one of these Odds bets will be the same amount as the payoff for the Flat bet, then the Odds bet is Bridged.   This means that a portion of the Odds bet, equal to the Flat bet, is placed adjacent to the Flat bet and the remainder is placed on top, bridging both of them (see the diagram below).   On the other hand, if the Odds payoff is not the same as the Flat bet then the Odds bet is Heeled.   This means that one Check is placed adjacent to the Flat bet and the remaining checks are placed on top of that check - offset and tilted.   For example, on a $10 Don't Pass bet that has been Established on the number 6, an Odds bet of $12 would have the same payoff as the Flat bet ($10) and therefore should be Bridged.   But an Odds bet of $30 would have a payoff of $25 and therefore should be Heeled.   Clear as mud?   Don't worry - the Dealer will make sure you do it right, and you'll get the hang of it quickly.
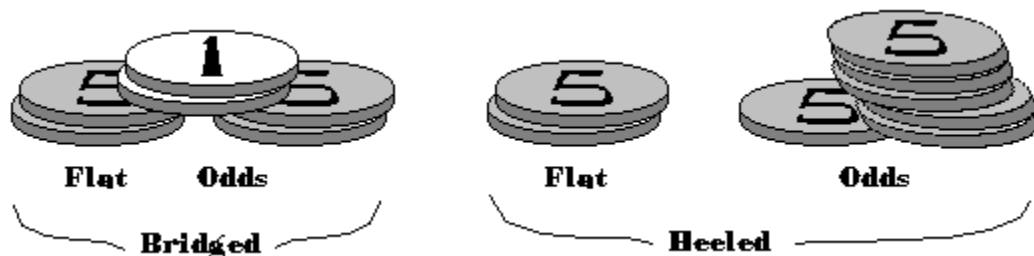
The act of making Odds bets is called either Taking or Laying Odds.

Taking and Laying Odds

When you make an <u>Odds</u> bet on a <u>Pass Line</u> or <u>Come</u> bet, you're said to be **Taking Odds**.   When you make an Odds bet on a <u>Don't Pass</u> or <u>Don't Come</u> bet, you're said to be **Laying Odds**.

Every bet has a payoff ratio that can be expressed as **x to y** (x:y) and is derived from its number of winning versus losing <u>Dice Combinations</u>.   For <u>True Odds</u> bets, the same figures are used whether the bet is <u>For or Against</u> a particular <u>Point Number</u> - the only difference being that they're reversed.   For instance, an <u>Odds</u> bet **For** the 9 pays 3 to 2, while an Odds bet **Against** the 9 pays 2 to 3.

On bets that are <u>With the Dice</u>, your chances of losing are <u>greater</u> than your chances of winning, because there are more ways to roll a losing 7 than there are ways to roll a winning <u>Point Number</u>.   Therefore, when you win - you're paid <u>greater</u> than <u>Even-Money</u> (recall the discussion about a balanced system in the <u>Overview</u>).   More specifically, you're paid the larger figure in the payoff ratio.

On the other hand, on bets that are <u>Against the Dice</u>, your chances of losing are <u>less</u> than your chances of winning, because there are fewer ways to roll a losing <u>Point Number</u> than there are ways to roll a winning 7.   Therefore, when you win - you're paid <u>less</u> than <u>Even-Money</u>.   Specifically, you're paid the smaller figure in the payoff ratio.

So **Taking the Odds** on bets <u>With the Dice</u> means that you're <u>taking</u> better than Even-Money - wagering a given amount to win a larger amount.   However, **Laying the Odds** on bets <u>Against the Dice</u> means that you're <u>giving</u> (or laying) better than <u>Even-Money</u> - wagering a given amount to win a smaller amount.

Whether you Take or Lay the Odds, your <u>average</u> chances of winning are exactly balanced with the payoff.   For instance, let's look at a $10 <u>Odds</u> bet <u>For</u> the 10.   The bet pays 2 to 1 because there are twice as many ways to roll a losing 7 as there are a winning 10.   So every $20 win is on average balanced with 2, $10 losses - a net of $0.   Similarly for a $10 Odds bet <u>Against</u> the 10.   The bet pays 1 to 2 because there are half as many ways to roll a losing 10 as there are a winning 7.   So every $10 loss is on average balanced with 2, $5 wins - once again a net of $0.

So the <u>Odds</u> bet is, on average, strictly a zero sum game.   But we're not playing craps with the hope of rolling an average game.   We already know from our discussion in the <u>Overview</u> that we can only win if the distribution of rolls is unbalanced in favor of our bets. If so, then Odds bets are the best deal we can get.

Odds Allowed

The House allows the maximum size of an Odds bet to be some factor of the Flat bet.   This Odds Allowed Factor is displayed on a placard mounted on the inside wall of the table.   For example, if you had established a $10 Pass Line bet then you would be allowed to take the following amount on Odds:

Odds Allowed Factor	Odds
Single	$10
Double	$20
Triple	$30
5X	$50
10X	$100
20X	$200
100X	$1000

In general you use this simple formula:
Odds bet maximum size   =   Size of Flat bet   X   Odds Allowed Factor

This formula works for the **Pass Line Odds** and **Come Odds** bets.   However, for the **Don't Pass Odds** and **Don't Come Odds** bets, the maximum size is larger still because you are Laying Odds instead of Taking Odds.   With these bets you're allowed to Lay amounts that will win the maximum Odds Allowed. The easiest way to figure out how much you can Lay is to calculate the maximum size using the above formula and then ask yourself: If this were a Pass Line Odds bet, how much would it pay?   The resulting figure is the amount you are allowed to Lay on the Don't Pass Odds or Don't Come Odds bets.

For instance, let's say **Double Odds** are being allowed and you have Established a $5 Don't Pass bet with the Point as 6.   If it were a Pass Line bet, you could make a maximum Odds bet of $10 which would pay $12.   So there's your answer - you may bet $12 on the Don't Pass Odds bet.   This concept may take a little practice to master and might partially explain why few players bet Against the Dice.

The maximum size for an Odds bet is not always a strict multiple of the Flat bet.   The House may allow a greater amount in order to make a correct payoff.   Often the method used to calculate the maximum amount is based on **Single Odds**.   For instance, on the Point Numbers 5 and 9 where the Odds pay **3 to 2**, if an uneven Flat amount such as $3, $5, etc. were bet, then an equally sized Single Odds bet would not be fully payable (e.g. $3 x 3/2 = 4.5 which leaves .5 leftover if the smallest chip the Dealer has to pay with is $1).   Therefore, the Single Odds bet is allowed to be pushed to the next higher increment.   So a $3 bet could take $4 in Odds ($4 x 3/2 = 6 = fully payable), a $5 bet could take $6 in Odds, and so on. Similar pushes are allowed on the Point Numbers 6 and 8 which pay **6 to 5**.   For instance, Flat bets such as $3 or $4 can take Single Odds of $5.   But no pushes are allowed for Odds bets on the Point Numbers 4 and 10 because all amounts are always fully payable with a **2 to 1** payoff.

Usually these ratios hold true for all Check denominations.   So a $300 Pass Line bet on Point Number 5 would be allowed to take $400 in Odds (3 - $100 checks pushes to 4 - $100 checks).   A $75 Pass Line bet on Point Number 8 would be allowed to take $125 in Odds (3 - $25 checks pushes to 5 - $25 checks), etc.

To figure **Double or Triple Odds**, some casinos simply double or triple the amount that would be allowed under Single Odds.   For instance, a $15 Flat bet on the Point 6 would take $25 in Single Odds (3 Check pushes to 5) and can therefore take $50 in Double Odds.   Another method is to double or triple the Flat bet and allow an amount equal to the Single Odds for that figure.   However, many casinos now use straight multiples of 2x for the 4/10 and 5/9, and 2.5x for the 6/8 with rounding up to the nearest amount divisible by 5 for most cases.   But what a casino allows for Odds is somewhat like a personal signature, so the important thing to do is ask how much they'll allow and go with it, realizing that the next casino may allow something entirely different.   At the very least you know that your Odds bet can be as large as the size of your Flat bet times the Odds Allowed Factor.   The question then is how much are you allowed to push?   See the section titled Pushing the House.

For greater than triple odds, any links to Single Odds are severed and the <u>Flat</u> bet is simply multiplied with the Odds Allowed Factor.   However, pushing is still sometimes necessary and usually considers the denomination <u>Check</u> you're using to bet.   For instance, at a 5X table with a $15 Come 5 bet, a $75 Odds bet would need to be pushed in order to make a whole payoff.   But rather than just allow $76, a push to $80 would be allowed.

Pass Line Bet

The **Pass Line** bet is a Flat bet normally placed before the Come-Out Roll.   (If you haven't already read about Flat bets you might want to read the section titled Flat Bets / Odds Bets first.)   On the Come-Out Roll 1 of 3 things happens:

1)   A **7** or **11** is rolled and the Pass Line bet wins. (Termed a Pass)
2)   A **2**, **3**, or **12** is rolled and the Pass Line bet loses.   (Termed a Crap-out)
3)   A **4**, **5**, **6**, **8**, **9**, or **10** is rolled and the Pass Line bet neither wins nor loses but a Shooter's Point is Established and marked with the Marker Buck.

If a Shooter's Point is Established, then on subsequent rolls 1 of 3 things can happen:

1)   The Shooter's Point is rolled again and the Pass Line bet wins. (Termed a Pass)
2)   A **7** is rolled and the Pass Line bet loses.   (Termed a Seven-Out or Miss)
3)   Any other number is rolled and the Pass Line bet neither wins nor loses but rolling continues.

The payoff on the Pass Line is Even-Money, which gives the House a 1.41% Advantage.   Once a Shooter's Point is Established, the Pass Line bet must remain on the table until a Decision is reached and cannot be removed or called OFF or ON.

Also, once a Shooter's Point is Established you are permitted to add a secondary Odds bet **Behind the Line** (in the unmarked area of the table, adjacent to your Pass Line bet).   This is called Taking the Odds and is one of the best bets you can make at the table because the House pays it off at True Odds.

Something many casinos allow you to do after a Shooter's Point is Established, is put a Pass Line bet on the table if you don't already have one, or increase the size of one if you already do.   This is called a Put bet.

Betting the Pass Line is also called betting the **Front Line** and is considered to be betting With the Dice. Any winning roll for the Pass Line is termed a Pass - imagine that!

Put Bet

A **Put** bet is a <u>Pass Line</u> or <u>Come</u> bet that you put up (make) or increase without going through the <u>Come-Out Roll</u>.   For instance, if you walked up to a table where a <u>Shooter</u> had already established a <u>Point</u> and you put a bet on the Pass Line - that would be a Put bet.   Or if you already had $5 on the Pass Line, and then after the Shooter established a Point you put another $5 on top of it - that would be a Put bet.   Or if you gave the <u>Dealer</u> $15 and said, "Put me up on the Come 6 for $5 Flat and $10 Odds" - that would be a Put bet.   The word "Put" essentially describes how the bet becomes established on the point rather than what it is.   It is in fact a Pass Line or Come bet and is treated no differently once it's been made.

Not all casinos allow Put bets and therefore some <u>Dealers</u> don't even know what they are.   But Put bets are always less advantageous for the players than properly played Pass Line or Come bets, and in most cases they're less advantageous than <u>Place</u> bets too.

As discussed under <u>Flat Bets / Odds Bets</u>, the player enjoys a 2 to 1 advantage over the <u>House</u> for Pass Line and Come bets during the <u>Come-Out Roll</u>.   But once a <u>Point</u> is established, the <u>Advantage</u> swings back to the House.   So putting a bet up after the greatest chance to win has already passed is generally not a good idea.   However ... because you can <u>Take Odds</u> together with your Put bet, there are times when Put bets are better than <u>Place</u> bets or <u>Buy</u> bets on the same number - it all depends on the casino's <u>Odds Allowed</u>.   Take a look at this table:

	House Advantage %		
Put w/Odds	**4/10**	**5/9**	**6/8**
0X	33.33	20.00	9.09
1X	16.67	10.00	4.55
2X	11.11	6.67	3.03
3X	8.33	5.00	2.27
5X	5.56	3.33	1.52
10X	3.03	1.82	.826
20X	1.59	.952	.433
100X	.33	.198	.09

You can see that at a <u>Double Odds</u> table, the best Put bet, one on the <u>Points</u> 6 or 8 with <u>Full Odds</u>, has a House Advantage of 3.03%, which is still twice as bad as the comparable <u>Place</u> bets at 1.52%.   The worst Put bet, one on the Points 4 or 10 with no Odds, has an astounding 33.33% House Advantage!   You should be caned if you made such a bet!   You might as well just give them your money!

However, if you're playing at a table that offers greater than 5X odds the story changes.   There you can take <u>Full Odds</u> and actually lower the <u>House's Advantage</u> to less than a <u>Place</u> bet!   The only problem is: Can you bear the size of the wager?   At a $5 table with 10X odds, a Put bet on the Point 6 with <u>Full Odds</u> will risk $55, whereas a Place 6 bet can be as small as $6.   This is one good reason to seek out tables that offer low limits and high odds.

Note: At 5X odds both Put bets and Place bets on the 6 and 8 have the same House Advantage and <u>Buying</u> the 4 and 10 is still a better deal.   However, Putting the 5 and 9 is generally better than Placing them depending on how the <u>House</u> handles their <u>Vigs</u>.   See <u>Pushing the House</u>.

You can <u>Configure</u> Animated Craps to either allow or disallow the use of Put bets.

Don't Pass Bet

The **Don't Pass** bet is a <u>Flat</u> bet that's placed before the <u>Come-Out Roll</u>.   (If you haven't already read about Flat bets you might want to read the section titled <u>Flat Bets / Odds Bets</u> first.)   On the Come-Out Roll 1 of 4 things happens:

1)   A **7** or **11** is rolled and the Don't Pass bet loses.
2)   A **2** or **3** is rolled and the Don't Pass bet wins.
3)   A **12** is rolled and the Don't Pass bet neither wins nor loses.   This is called a <u>Stand-off or Push</u>, and is depicted on the <u>Layout</u> as **Bar 12**.   (Some casinos use **Bar 2** instead, but the odds remain the same since both 2 and 12 can only be rolled one way.   However, some casinos have been known to use **Bar 3**, and that makes a big difference!   Watch out for this one because the House Advantage is 4.39% versus the normal 1.4%!)
4)   A **4**, **5**, **6**, **8**, **9**, or **10** is rolled and the Don't Pass bet neither wins nor loses but a <u>Shooter's Point</u> is <u>Established</u>.

If a Shooter's Point is Established then on subsequent rolls 1 of 3 things can happen:

1)   A **7** is rolled and the Don't Pass bet wins.
2)   The <u>Shooter's Point</u> is rolled again and the Don't Pass bet loses.
3)   Any other number is rolled and the Don't Pass bet neither wins nor loses but rolling continues.

The payoff on the Don't Pass bet is <u>Even-Money</u>, which gives the <u>House</u> a 1.4% <u>Advantage</u>.   Unlike a <u>Pass Line</u> bet, the Don't Pass bet may be reduced or removed at any time.   However, it cannot be increased as with a <u>Put</u> bet, and it cannot be called OFF and ON.

Once a <u>Shooter's Point</u> is Established you are permitted to add a secondary <u>Odds</u> bet which is placed next to the Don't Pass bet either <u>Bridged</u> or <u>Heeled</u>.   (See the discussion under <u>Flat Bets / Odds Bets</u>.) This is called <u>Laying the Odds</u> and is one of the best bets you can make at the table because the <u>House</u> pays it off at <u>True Odds</u>.

Some casinos combine the Don't Pass and <u>Don't Come</u> bets.   This doesn't change anything about how the Don't Pass bet works though - only where it sits.   The <u>Dealer</u> physically picks it up and moves it to the appropriately numbered <u>Point Box</u> whenever a Shooter's Point is rolled. The <u>Pass Line</u> bet could be combined with the <u>Come</u> bet in a similar manner but is never done.

Betting the Don't Pass is also called betting the **Back Line** and is considered to be betting <u>Against the Dice</u>.

Special note: Both the Don't Pass <u>Flat</u> and <u>Odds</u> bets utilize the same betting area.   Therefore, whenever the <u>Shooter</u> is on a <u>Come-Out Roll</u>, any <u>Checks</u> added to or removed from this area are added to or removed from the Flat bet.   Then once a <u>Point</u> is <u>Established</u> any Checks added or removed are added to or removed from the Odds bet.   At this time if you wish to remove all or part of your Flat bet there are a couple things you can do:

1)   Remove the entire Odds bet first, then remove the amount of the Flat bet you don't want.   If you goof and remove too much you'll need to remove the entire amount.   Then the first click (and only the first click) after that can be used to replenish the Flat bet.
2)   Activate the <u>Key-in Bet Amounts</u> feature then move it to the Don't Pass area and press the right arrow key (If the **Betting-window** leaves the Don't Pass area then you went too far).   Then just key in the amount you want.

Come Bet

A **Come** bet is a Flat bet With the Dice that is identical to the Pass Line bet.   As a matter of fact that's really what it is - another Pass Line bet!   So if you haven't already read about the Pass Line bet you might want to do that first.

The main difference between a Pass Line bet and a Come bet is that the Pass Line bet is made before the Shooter Establishes a Point, while the Come bet is made anytime after.   Whenever a Come bet is first made, the next roll is treated the same as a Come-Out Roll for the Pass Line.   It wins, loses and establishes a Point in the same manner.   However, while the Shooter's Point for the Pass Line bet is marked with the Marker Buck, the Come Point for the Come bet is marked by picking it up and moving it to the appropriately numbered box Point Box.   In other words, it acts as its own Marker Buck.   Once this occurs, you are permitted to add a secondary Odds bet which is placed on top of the Come bet and slightly offset.   This is called Taking the Odds and is one of the best bets you can make at the table because the House pays it off at True Odds.

Let's see how this works: Say you make a Come bet and the Shooter rolls a 4.   Your Come bet is picked up and moved to the 4 where you may now place an Odds bet along with it.   Now your only concern is whether the Shooter will roll a winning 4 or a losing 7 - no other numbers matter.   However, let's say that while you're waiting for your 4, you decide to make another Come bet and this time the Shooter rolls an 8.   This Come bet is picked up and moved to the 8 where you may once again place an Odds bet along with it.   Now you have two Come bets in action.   It will take at least two rolls to win both of them - a 4 and an 8, but only one roll to lose both of them - a 7.

Actually, you could continue to make Come bets and end up having seven of them on the table at once - six Established on Points and one **Coming**.   Each time you roll a Point Number that already has an established Come bet on it, you win the established bet and your new Come bet moves in to replace it.

If your new Come bet is the same size as the one it's replacing (the Flat portion), the Dealer will most likely leave the established Checks where they are and simply pay you your winnings.   This is termed **OFF-and-ON** and your winnings are placed along side the new Come bet which for this case does not get moved.   You must quickly retrieve your winnings or they will be working as a Come bet for the next roll!   This of course is to make less work for the Dealer (and thereby less delay of the game) by avoiding having to take down, pay off, and rebuild the checks for the same bet.

As discussed in the section on Come-Out Roll, **Come Odds** bets are automatically considered to be **OFF** (or Not Working) during the Come-Out Roll.   They are out of action and will not win or lose.   However, the Flat bet portion is always active.   So what happens if a Come Point or a 7 is rolled during this time?   Well, if a Come Point is rolled, the Dealer simply pays the Flat bet and returns the Odds.   If a 7 is rolled, then the Dealer takes the Flat bet and returns the Odds.

Of course once a Point is Established, the Come Odds are turned back **ON** again.   But why even let the House turn them OFF to begin with?   Didn't you bet them to get more action and lower the House's Advantage?   Well then, just tell the Dealer you want to keep them Working and he or she will place an ON button on top of them.

Additional details can be found in the section titled Flat Bets / Odds Bets.

One last thing about Come bets: Many casinos will let you establish Come bets directly on a Point Number without going through any sort of Come-Out Roll.   This is called a Put bet.

Don't Come Bet

A **Don't Come** bet is a Flat bet Against the Dice that is identical to the Don't Pass bet.   As a matter of fact that's really what it is - another Don't Pass bet!   So if you haven't already read about the Don't Pass bet you might want to do that first.

The main difference between a Don't Pass bet and a Don't Come bet is that the Don't Pass bet is made before the Shooter Establishes a Point, while the Don't Come bet is made anytime after.   Whenever a Don't Come bet is first made, the next roll is treated the same as a Come-Out Roll for the Don't Pass bet. It wins, loses and establishes a Point in the same manner.   However, while the Shooter's Point for the Don't Pass bet is marked with the Marker Buck, the Don't Come Point for the Don't Come bet is marked by picking it up and moving it to the appropriately numbered box Point Box.   In other words, it acts as its own Marker Buck.   Once this occurs, you are permitted to add a secondary Odds bet which is either Bridged or Heeled.   (See the discussion under Flat Bets / Odds Bets.)   This is called Laying the Odds and is one of the best bets you can make at the table because the House pays it off at True Odds.

Let's see how this works: Say you make a Don't Come bet and the Shooter rolls a 4.   Your Don't Come bet is picked up and moved to the 4 where you may now place an Odds bet along with it.   Now your only concern is whether the Shooter will roll a winning 7 or a losing 4 - no other number matters.   However, let's say that while you're waiting for your 7, you decide to make another Don't Come bet and this time the Shooter rolls an 8.   This Don't Come bet is picked up and moved to the 8 where you may once again place an Odds bet along with it.   Now you have two Don't Come bets in action.   It will take only one roll to win both of them - a 7, but it will take two rolls to lose both of them - a 4 and an 8.

Actually, you could end up having seven total Don't Come bets all at once - six established on Points and one on the Don't Come box.   Each time you roll a Point Number that already has an established Don't Come bet on it, you lose the established bet and your new Don't Come bet moves in to replace it.

Unlike with Come bets, the Dealers do not use the **OFF-and-ON** method with Don't Come bets, nor are the Don't Come Odds bets automatically considered to be **OFF** during the Come-Out Roll.   Although you could call them OFF if you wanted, nobody usually does it, so the Dealer might look at you a little funny.

Additional details can be found in the section titled Flat Bets / Odds Bets.

Place Bet

A **Place** bet is a <u>Standing</u> bet <u>With the Dice</u> that can be placed on any of the <u>Point Numbers</u> **4**, **5**, **6**, **8**, **9**, or **10** at anytime.   The bet is <u>For</u> the chosen number and <u>Against</u> the **7**.   1 of 3 things can happen with this bet:

1)   The <u>Point Number</u> is rolled and the bet wins.
2)   A **7** is rolled and the bet loses.
3)   Any other number is rolled and the bet neither wins nor loses but rolling continues.

The <u>Checks</u> for a Place bet are positioned by the <u>Dealer</u> in the <u>Point Box</u>, although if you bet on the <u>Shooter's Point</u> (the one marked with the <u>Marker Buck</u>) you can place your checks on the line separating the <u>Pass Line</u> bet and the <u>Apron</u>.

These bets are for players who want quick action and can't stand to see those precious <u>Point Numbers</u> being rolled without having them covered.   Although they're popular bets and certainly better than <u>Proposition</u> bets, they're not the best bets you can make.   The <u>House</u> exacts its <u>Percentage</u> on them by paying off at <u>less</u> than <u>True Odds</u>.   Here are the payoffs:

Number	Payoff	True Odds	House PC
4 & 10	9 to 5	2 to 1	6.67%
5 & 9	7 to 5	3 to 2	4.00%
6 & 8	7 to 6	6 to 5	1.52%

As you can see, the lowest House Percentage Place bets are on the 6 and 8 and are almost as good as <u>Flat</u> bets on the <u>Pass Line</u>.   The others aren't so great but you can improve them by making <u>Buy</u> bets instead.   In order to take advantage of the <u>Odds</u> you'll need to make bets on the 6 and 8 in increments of 6, and on the 4, 5, 9, and 10 in increments of 5.   See the discussion in the section titled <u>How much should I bet?</u>

Technically speaking, Place bets are **Place to Win** bets, meaning they're <u>With the Dice</u>.   There are also **Place to Lose** bets that are Against the Dice, but you'd be hard pressed to find a table that offers them. Many <u>Dealers</u> don't even know what they are, but just like Place to Win bets, their Odds Payoffs have been reduced to give the House its Advantage.

Number	Payoff	True Odds	House PC
4 & 10	5 to 11	1 to 2	3.03%
5 & 9	5 to 8	2 to 3	2.50%
6 & 8	4 to 5	5 to 6	1.82%

Place bets can be put up or taken down at any time.   They're also automatically **OFF** (or <u>Not Working</u>) on the <u>Come-Out Roll</u>, although they can be called <u>ON</u> or <u>OFF</u> at anytime if desired.

The 5, 6, 8, and 9 are referred to as the **Inside Numbers**, while the 4, 5, 9, and 10 are referred to as the **Outside Numbers** (yes, they overlap).   Someone telling the <u>Dealer</u> he want's "$22 Inside" means he wants $5 each on 5 & 9 and $6 each on 6 & 8.   You can probably figure out what "$20 Outside" and "$32 Across" mean for yourself.

If you play Place and <u>Come</u> bets at the same time, and the <u>Shooter</u> rolls the <u>Point Number</u> of one of your Place bets, you'll of course win the bet, but you'll also be asked what you'd like to do with it since your Come bet gets moved to the same Point.   You don't have to remove it if you don't want to, but doing so would be wiser since the <u>House Advantage</u> on Place bets is greater than on <u>Pass Line</u> or Come bets!   If you intend to <u>Take Odds</u> on your Come bet which would be smart, then you would tell the <u>Dealer</u>, **"Down with Odds"** which means: "Take down my Place bet, give me Odds on my Come bet, and return any change."

Big 6 / Big 8 Bets

There are two rather strange bets called the **Big 6** and **Big 8** which operate similar to <u>Place</u> bets.   The difference is that they're not automatically OFF on the <u>Come-Out Roll</u> and most importantly, their payoffs are reduced to <u>Even-Money</u>.   This is what makes them so strange: Why would you settle for Even-Money when you can get better <u>Odds</u> (7 to 6) on the normal Place bets?   They're also termed <u>Sucker Bets</u> because of their high <u>House Advantage</u>, and they exist because uninformed players make bets on them!

Buy Bet

To make a **Buy** bet in Animated Craps, you first make a <u>Place</u> bet and then do one of the following:

- Move the mouse-pointer over the bet and press the **F5** key.
- Click the mouse-pointer on the blue <u>BUY button</u> and then click on the bet.
- Select **"Buy" Place Bet** from the <u>Action</u> menu, and then click on the bet.
- <u>Log</u> an <u>Auto-Bet</u> that Buys the bet.   (Auto-Betting allows you to either make a Buy bet directly or to Buy a Place bet.)

However, if you have the "<u>Key-in Bet Amounts</u>" feature in use, then the **Betting-window** determines which bet to buy.   In that case you can:

- Move the <u>Betting-window</u> over the bet and press the **F5** key.
- Move the Betting-window over the bet and select **"Buy" Place Bet** from the <u>Action</u> menu.

A **Buy** bet is a <u>Standing</u> bet <u>With the Dice</u> that can be placed on any of the <u>Point Numbers</u> **4**, **5**, **6**, **8**, **9**, or **10** at anytime.   The bet is **For** the chosen number and **Against** the **7**.   1 of 3 things can happen with this bet:

1)   The selected number is rolled and the bet wins.
2)   A **7** is rolled and the bet loses.
3)   Any other number is rolled and the bet neither wins nor loses but rolling continues.

A **Buy** bet is similar to a <u>Place</u> bet except that you pay a 5% <u>Vig</u> up-front in exchange for receiving a <u>True Payoff</u> if it wins.   The Vig is figured on the amount wagered.   For example, if you wanted to make a $20 Buy bet on the number 4, you'd put down $21 in the <u>Come</u> area and tell the <u>Dealer</u> "**Buy the 4**".   He or she will move $20 to the number 4 Point Box and place a <u>BUY button</u> on top it.   The extra $1 (5% of $20) is the Vig for the <u>House</u>.   The result is that you'll win $40 (2 to 1) instead of $36 (9 to 5).   If you do win and want to keep your Buy bet up, you'll have to pay the Dealer another Vig.   The Vig is returned if you remove the bet before it wins or loses.

Depending on how much you bet, the <u>Vig</u> may work out to a fractional amount.   If this fractional amount is not fully payable with any of the available <u>Checks</u>, then the Vig is rounded off.   Generally, when the Vig amount falls halfway or less between two payable amounts, the Vig is rounded down, otherwise it's rounded up.   So at a table where the smallest <u>Checks</u> are $1, the Vig will be rounded down on fractions of .50 or less and rounded up otherwise.   e.g. You could Buy a bet for $50 and pay only $2 Vig even though mathematically the Vig comes out to $2.50.   However, if you made two $50 Buy bets at the same time, you'd be charged $5 and not $4 for your <u>total</u> action.   Even if you didn't make both bets at the same time, some casinos would charge you the extra $1 when you made the second bet, and some would not.   Obviously those that don't worry about the extra buck are being a bit more generous (if you can call taking your money generous!).   There are some casinos that are even more generous by only charging a Vig on those bets that you win.   This lowers the <u>House PC</u> and makes the Buy a much better bet.   The point to remember is that each casino handles their Vigs a little differently.

Number	Payoff	PC if all bets are charged	PC if only winning bets are charged
4 & 10	2 to 1	4.76%	1.64%
5 & 9	3 to 2	4.76%	1.96%
6 & 8	6 to 5	4.76%	2.22%

In Animated Craps, the <u>Vig</u> amount for a Buy bet is displayed on the <u>Status-bar</u>.   Also the <u>Configuration</u> screen allows you to choose what percentage to charge, how to round fractional amounts, and whether to charge all bets or just winning bets.

Buy bets, like <u>Place</u> bets, are automatically **OFF** on the <u>Come-Out Roll</u> unless you call them **ON**.   They

can be called <u>ON</u> or <u>OFF</u>, as well as   put up, taken down, increased, or decreased (with <u>Vig</u> adjustments) at any time.

Buy bets do not make sense for the 6 or 8, and generally not the 5 or 9 since the equivalent Place bet <u>Percentages</u> are already lower than 5%.   But for the 4 and the 10 they do make sense and should be utilized instead of Place bets.   See the section titled <u>Pushing the House</u>.

When you make a Buy bet, you're <u>Taking Odds</u> which is the exact opposite of a <u>Lay</u> bet where you're Laying Odds.

Lay Bet

A **Lay** bet is a Standing bet **Against the Dice** that can be placed on any of the Point Numbers **4**, **5**, **6**, **8**, **9**, or **10** at anytime.   The bet is For the **7** and Against the chosen number.   1 of 3 things can happen with this bet:

1)   A **7** is rolled and the bet wins.
2)   The Point Number is rolled and the bet loses.
3)   Any other number is rolled and the bet neither wins nor loses but rolling continues.

This bet pays **True Odds** but only after you pay an up-front Vig of 5% of the potential payoff.   That's right, the Vig is not figured on the amount bet!   For example, if you wanted to make a $40 Lay bet on the number 4, you'd put down $41 in the Come or Don't Come area and tell the Dealer, "**Lay the 4**".   He or she will move $40 to the number 4 Point Box and place a LAY button of top of it.   The extra $1 (5% of $20) is the Vig for the House (the potential payoff is $20 because the Odds on the Lay 4 are 1 to 2).   If you win and want to keep your Lay bet up, you'll have to pay the Dealer another Vig.   The Vig is returned if you remove the bet before it wins or loses.

Depending on how much you bet, the Vig may work out to a fractional amount.   If this fractional amount is not fully payable with any of the available Checks, then the Vig is rounded off.   Generally, when the Vig amount falls halfway or less between two payable amounts, the Vig is rounded down, otherwise it's rounded up.   So at a table where the smallest Checks are $1, the Vig will be rounded down on fractions of .50 or less and rounded up otherwise.   e.g. You could Lay the 4 for $100 and pay only $2 Vig even though mathematically the Vig comes out to $2.50.   However, if you made a $100 Lay 4 and a $100 Lay 10 bet at the same time, you'd be charged $5 and not $4 for your total action.   Even if you didn't make both bets at the same time, some casinos would charge you the extra $1 when you made the second bet, and some would not.   Obviously those that don't worry about the extra buck are being a bit more generous (if you can call taking your money generous!).   There are some casinos that are even more generous by only charging a Vig on those bets that you win.   This lowers the House PC and makes the Lay a much better bet.   The point to remember is that each casino handles their Vigs a little differently.

Number	Payoff	PC if all bets are charged	PC if only winning bets are charged
4 & 10	1 to 2	2.44%	1.64%
5 & 9	2 to 3	3.23%	1.96%
6 & 8	5 to 6	4%	2.22%

In Animated Craps, the Vig amount for a Lay bet is displayed on the Status-bar.   Also the Configuration screen allows you to choose what percentage to charge, how to round fractional amounts, and whether to charge all bets or just winning bets.

Normally, Lay bets always Work but can be called OFF and back ON whenever you like.   Also they can be put up, taken down, increased, or decreased (with Vig adjustments) at any time.

Lay bets are sometimes called **NO** bets.   For instance you could tell the Dealer you wanted to bet a "NO 4".   The word **Lay** comes from the fact that you're Laying Odds which is the exact opposite of a Buy bet where you're Taking Odds.

Hardway Bet

A **Hardway** bet is a <u>Standing</u> bet that can be made at any time.   1 of 3 things can happen with the Hardway bet:

1) The **Hardway** is rolled and the bet wins.
2) A **7** or **Easyway** is rolled and the bet loses.
3) Any other number is rolled and the bet stands - rolling continues.

A Hardway is one of the following unique <u>Dice</u> pairings that can be rolled:

2-2   (Hard 4)
3-3   (Hard 6)
4-4   (Hard 8)
5-5   (Hard 10)

Although each of the numbers 4, 6, 8, and 10 can be rolled more than one way, the listed pairings are unique.   For instance,   take a look at the possible <u>Dice Combinations</u> for the 4.   You'll see that there are 3 ways of rolling the 4 (1-3, 2-2, and 3-1).   The 2-2 pair is unique and therefore referred to as the **Hardway** or **Hard 4**.   The 1-3 or 3-1 pairs are identical and therefore referred to as the **Easyways** or **Easy 4's**.   A number like 12 certainly has only one unique way of being rolled (6-6), but is not called a Hardway since it has no Easyway counterpart.

Hardway bets can be put up, taken down, increased, or decreased at any time.   Additionally they can be called <u>OFF</u> or <u>ON</u> at any time if desired.   Many players like to turn them OFF on the <u>Come-Out Roll</u>, so the Stickperson will usually remind everyone with an announcement like, "Hardways work unless you call them OFF".   These are not good bets to make since the <u>House Percentages</u> on them are quite high.

Hardway	Payoff	True Odds	House PC
4 & 10	7 to 1	8 to 1	11.1%
6 & 8	9 to 1	10 to 1	9.09%

Proposition Bets

Proposition bets are the <u>One-Roll</u> and <u>Hardway</u> bets found in the center of the table <u>Layout</u>.   Their high payoffs attract lots of action, but unfortunately their <u>House Percentages</u> are also quite high and don't justify the risk.   The <u>Stickperson</u> is often heard soliciting the players to make wagers on prop bets, and to the delight of the House many oblige, but smart players know they're **Sucker Bets**.

Animated Craps' prop bets are displayed on two separate layouts.   You can switch between them by clicking on the small tongue sticking out of the bottom of the prop bet box or by selecting <u>Display Hop Bets</u> from the <u>Action</u> menu.

You'll find there are more fancy ways with fancy names to bet prop bets than a good Stickperson can shake a stick at!   You can even dream up a few of your own!   So if you hear someone call out something you don't know like, "Gimme a $10 hi-lo split and a $5 Buffalo!", don't despair, your best bet would be to avoid them altogether.   These are Sucker Bets to begin with, and fancy ways of betting them just makes them fancy Sucker Bets!

One-Roll Bets

One-Roll bets either win or lose on one roll of the <u>Dice</u> - it's as simple as that.   They win if their particular numbers are rolled and lose if anything else is rolled.   Therefore, their payoffs are figured against the total number of <u>Dice Combinations</u> and not just against the 7.   All One-Roll bets can be put up, taken down, increased, decreased, or called <u>OFF</u> or <u>ON</u> at any time.   They're not good bets to make though since the <u>House Percentages</u> on them are quite high.   There are many different kinds of One-Roll bets, but here are the most common ones:

<u>Any Craps</u>
<u>Any Seven</u>
<u>C and E</u>
<u>Field</u>
<u>Horn</u>
<u>Whirl</u>
<u>Over 7 / Under 7</u>
<u>Hop</u>
<u>Two / Three / Eleven / Twelve</u>

Any Craps Bet

This <u>One-Roll</u> bet is a combined bet on 2, 3, and 12.   The <u>Stickperson</u> calls **"Craps"** anytime one of these numbers is rolled.   A **3-way Craps** bet is actually 3 separate bets on 2, 3, and 12, so it should be wagered in amounts equally divisible by 3.

Any Seven Bet

This <u>One-Roll</u> bet is strictly <u>For</u> the 7.   It is by far the worst <u>Proposition</u> bet you can make with the <u>House Advantage</u> being over 16%!   Any Seven is sometimes referred to as **Big Red**.

C and E Bet

This <u>One-Roll</u> bet is a combined bet on <u>Any Craps</u> and <u>Eleven</u>.   In a casino the 2 circles depicting this bet are also used individually.   For instance, if you made an Any Craps bet, the <u>Stickperson</u> would probably place your <u>Checks</u> in the circle marked with a **C**.   However, this is identical to the normal Any Craps bet.   For the combined **C and E** bet, the payoff is figured as if you had made each bet separately with half your wager going towards each bet.

Each time you win a C and E bet, you are in essence winning one of the included bets and losing the other.   For example, here are the possible payoffs for a $5 C and E bet:

Number Rolled	Wagered	Payoff Odds	Win	Lose	Net Payoff
2, 3, or 12	2.50	7:1	17.50	2.50	15
11	2.50	15:1	37.50	2.50	35

Note that some casinos pay less than 15 to 1 on the <u>Eleven</u> and may require betting amounts wholly divisible by 2 in order to receive complete payoffs.   For example, at 15 <u>for</u> 1 (which is the same as 14 to 1) the net payoff on an 11 would always include a fractional amount which the <u>House</u> can't pay you and thus keeps for itself.

Field Bet

This is a combined <u>One-Roll</u> bet on 2, 3, 4, 9, 10, 11, and 12.   If the number rolled is a 3, 4, 9, 10, or 11 then the payoff is <u>Even-Money</u>, but if it's a 2 or 12 then the payoff is either doubled or tripled depending on the casino.

For many years most casinos paid double on both the 2 and 12.   But these days more and more are offering a double payoff on one of the numbers and triple on the other.   It doesn't matter which number pays triple and which pays double though since the <u>Odds</u> of rolling a 2 and a 12 are the same.   Consider yourself lucky if one day you run across a casino that pays triple on <u>both</u> the 2 and 12.   This rare payoff is usually offered as a promotion or inducement to get you to the tables, but it's definitely worthwhile since it turns the Field into a <u>Zero Expectation</u> bet, meaning it has no <u>House Advantage</u>!

Some tables have been known to include the number 5 in the Field instead of the 9, but it doesn't change the <u>Odds</u> any since both numbers can be rolled the same number of ways.

You can choose which Field payoff you'd like to play with on the <u>Configuration</u> screen.

Horn Bet

This <u>One-Roll</u> bet is a combined bet on <u>Two, Three, Eleven, and Twelve</u>.   However, the payoff is figured as if you had bet each number separately with one fourth of your wager going towards each bet.   So if you don't bet an amount that is wholly divisible by 4, your payoff may include a fractional amount which the <u>House</u> can't pay you and thus keeps for itself.

Each time you win a Horn bet, you are in essence winning one of the included bets and losing the other three.   For example, here are the possible payoffs for a $4 Horn bet:

Number Rolled	Wagered	Payoff Odds	Win	Lose	Net Payoff
2	1	30:1	30	3	27
3	1	15:1	15	3	12
11	1	15:1	15	3	12
12	1	30:1	30	3	27

Occasionally you'll hear someone bet a **Horn High 2 (3, 11, or 12)**.   This means they want the bet divided into 4 non-fractional parts with any remainder added to the number called.   So a $5 Horn High 12 would mean: bet $1 each on 2, 3, and 11, and $2 on 12.

Note that some casinos payoff less than 15 to 1 on the 3 or 11, and less than 30 to 1 on the 2 or 12, which of course affects the payoff on the Horn as well.

Whirl Bet

This <u>One-Roll</u> bet is a combined bet on <u>Two, Three, Eleven, Twelve</u> and <u>Any Seven</u>.   However, the payoff is figured as if you had bet each number separately with one fifth of your wager going towards each bet.   So if you don't bet an amount that is wholly divisible by 5, your payoff may include a fractional amount which the <u>House</u> can't pay you and thus keeps for itself.

Each time you win a Whirl bet, you are in essence winning one of the included bets and losing the other four.   For example, here are the possible payoffs for a $5 Whirl bet:

Number Rolled	Wagered	Payoff Odds	Win	Lose	Net Payoff
2	1	30:1	30	4	26
3	1	15:1	15	4	11
7	1	4:1	4	4	0
11	1	15:1	15	4	11
12	1	30:1	30	4	26

Note that some casinos pay less than 15 to 1 on the 3 or 11, and less than 30 to 1 on the 2 or 12, which of course affects the payoff on the Whirl as well.

You can access the Whirl bet by selecting <u>Display Hop Bets</u> from the <u>Action</u> menu or by clicking on the small tongue sticking out of the bottom of the <u>Prop</u> bet box.

Over 7 / Under 7 Bets

These <u>One-Roll</u> bets are rarely used and only found in some casinos.   The **Over 7** bet wins if an 8, 9, 10, 11, or 12 is rolled and loses otherwise.   The **Under 7** bet wins if a 2, 3, 4, 5, or 6 is rolled and loses otherwise.   Both of these bets pay <u>Even-Money</u>.

You can access these bets by selecting <u>Display Hop Bets</u> from the <u>Action</u> menu or by clicking on the small tongue sticking out of the bottom of the <u>Prop</u> bet box.

Hop Bets

These <u>One-Roll</u> bets are seldom used and rarely depicted on the <u>Layout</u>.   They're bets on particular <u>Dice Combinations</u>.   That is to say that you bet on what each separate die will show.   So if you told the <u>Dealer</u> you wanted a Hop 4-5, then a 4 and a 5 would have to appear on the next roll to win.   Some Hopping numbers like Hop 4-5, have two ways to be rolled (4-5 and 5-4) while others like Hop 3-3, have only one way (3-3).   The ones with only one way to roll are harder to hit and therefore pay more when they do, but the <u>House Advantage</u> on all Hop bets is still high. Hop 2-2, 3-3, 4-4, and 5-5 are called **Hopping Hardways**.

You can access these bets by selecting <u>Display Hop Bets</u> from the <u>Action</u> menu or by clicking on the small tongue sticking out of the bottom of the <u>Prop</u> bet box.

Two / Three / Eleven / Twelve Bets

These are simply <u>One-Roll</u> bets on one number.   Technically speaking they're <u>Hop</u> bets on 1-1, 1-2, 5-6, and 6-6.   For instance, if you bet on the Eleven, a 5 and a 6 would have to appear on the next roll of the <u>Dice</u> to win - otherwise it would lose.   The Two is sometimes referred to as **aces** or **snake eyes**, the Three as **ace-deuce**, the Eleven as **yo** or **yo-leven**, and the Twelve as **box cars** or **midnight**.

How much can and should I bet?

Well, any amount is acceptable as long as it falls between the Table maximums and minimums. However, since the Dealer can only make payoffs with the Checks available and not any fractional amount, a wise player ensures that the amounts wagered will allow whole payoffs.

For instance, a Place bet on the 4 has a payoff of 9 to 5 (9 won for every 5 bet).   So if you only bet $1, the correct payoff should be $1.80.   But if the lowest denomination check is $1, the Dealer can't make the whole payoff - after paying a $1 check there is $.80 left over.   So rather than round the payoff up to $2 (wouldn't that be nice?), the Dealer rounds it down to $1 and keeps the fractional amount.   You have in effect given the House a gift!

If instead, you had bet any multiple of $5, the correct payoff would be a corresponding multiple of $9 which the house can easily pay in whole.   The key is to look at the payoff ratio **x to y** and bet in increments of **y**.   For a complete list of payoff ratios see Table of Odds and House Advantages.

As you can see, in craps it pays to know the Odds.   If you forget what they are, you can ask the Dealer. But if you can remember just a few sets of odds for each of 3 pairs of numbers, you'll have all the important odds covered.   Here they are:

Numbers	Place Bets	Do Odds & Buy Bets	Don't Odds & Lay Bets
4 & 10	9 to 5	2 to 1	1 to 2
5 & 9	7 to 5	3 to 2	2 to 3
6 & 8	7 to 6	6 to 5	5 to 6

Notice that the Do and Don't odds are exact opposites, so if you can remember one set, you already know the other.

Usually the Dealers will bring to your attention the fact that a particular bet is not properly sized. However, if by chance they don't catch it or if you stubbornly insist on betting it anyway, your payoff will end up being rounded down.   When this happens in Animated Craps, the payoff box will show the word "rounded" next to the net payoff figure.

How do I make a bet?

In Animated Craps: You make bets by placing your <u>Checks</u> on them.   To do this, first move the mouse-pointer to the <u>Rail</u> and click on the denomination check you want to use.   The check you select will appear alone in the lower left-hand corner of the rail.   Next click the mouse-pointer on the bet.   One of your selected checks will be added to the bet for each click of the mouse.   If you don't have a mouse or you'd like to enter bet amounts directly, you may do so via the keyboard by selecting "<u>Key-in Bet Amounts</u>" from the <u>Action Menu</u>.   An <u>Auto-Bet</u> feature is also available to make bets for you.

If you bet an amount that's not within the <u>Table Maximum and Minimum Limits</u>, your bet will be adjusted accordingly.   Also if one of the <u>Auto-Adjust Bet Amounts</u> options is selected, your bet will be adjusted to an amount that ensures a whole payoff.   See <u>How much can and should I bet?</u>.

In a casino: The <u>Pass Line</u>, <u>Don't Pass</u>, <u>Come</u>, <u>Don't Come</u>, <u>Field</u>, <u>Big 6 and Big 8</u> bets are in the <u>Self-Service Area</u> of the <u>Layout</u>.   These are bets that you can physically place yourself by putting your <u>Checks</u> directly on the appropriate part of the layout.   So select an amount you feel comfortable with and place your checks on the closest part of the bet in front of where you're standing.

The <u>Place</u>, <u>Lay</u>, and established <u>Come</u> and <u>Don't Come</u> bets are in the <u>Dealer's Cash Register</u> which covers the six numbered <u>Point Boxes</u> labeled 4 through 10.   This is a <u>hands-off area</u> as anyone's cash register would be!   The <u>Dealers</u> are the only ones who're allowed to handle these bets.   To make a Place or Lay bet, put your <u>Checks</u> on an open area of the table (usually on the Come or Don't Come boxes) and announce to the Dealer what you'd like to bet.   The Dealer will move them to the appropriate spot.   For actual Come and Don't Come bets, when Point Numbers are rolled, the Dealer will pick up your checks and move them to the numbered Point Boxes.   Then if you want, you can put more checks down on the Come or Don't Come boxes and tell the Dealer whether you want to <u>Take or Lay Odds</u>.

The <u>Proposition</u> bets are in the center of the <u>Layout</u> which is also a <u>hands-off</u> <u>area</u>.   The <u>Stickperson</u> is the one who handles bets there.   To make a bet, throw your <u>Checks</u> in to the Stickperson and announce your desires.   (Try not to throw your checks all over the place or hit any of the other bets.)   If the Stickperson is busy, you can put your checks on the Come box or <u>Apron</u> and tell the <u>Dealer</u> what you'd like.   The Dealer will see to it that they get to where they need to be.

<u>Lay</u> and <u>Don't Come</u> bets are placed together in the same small area.   If many players are playing these bets the Point Boxes can become crowded and rather confusing.   The same is true for the <u>Proposition</u> bets.   Your bets can get lost in the turmoil when a number of players throw their <u>Checks</u> in to the <u>Stickperson</u> and call out their bets all at once - so watch your bets closely.

You're not allowed to hand checks or cash directly to any <u>Dealer</u>.   Again, just set them down on the layout and, if the bet you want is not in the <u>Self-Service Area</u>, announce your desires.

How much will my bets pay?

Every bet on the table has a **Payoff Ratio** which is expressed as either: **x to y**, or **x for y**.   Both mean that you will win **x** if you bet **y**.   Take note however, that in the case of **x to y** - you also get back the amount you wagered.   In the case of **x for y** you do not!   This is a little trick casinos sometimes employ to make payoffs appear to be larger, possibly even as large as True Odds.   For example, the True Odds for an Any Craps bet are **8 to 1**, so if you walked into a casino and saw that they were paying **8 for 1** you might think that you were getting a good deal, after all the numbers look right, but in fact you're not! You're being paid **7 to 1**.   **8 for 1** may appear to be larger than the equivalent **7 to 1** but is in fact the same.   With **7 to 1**, you bet 1, win 7, plus get the 1 back for a total return of 8.   With **8 for 1**, you bet 1, win 8, but don't get your 1 back for a total return of 8.   A payoff ratio of **1 to 1** is termed Even-Money.

Sometimes the Dealer may be unable to completely pay off your bets.   This happens when an amount you wager produces a payoff that's not equally divisible by any of the available Checks.   In this case, the payoff is rounded down to the nearest payable amount.   When this happens in Animated Craps, the payoff box will show the word "rounded" next to the net payoff figure.   See also How much can and should I bet?.

For specific payoff ratios refer to the Table of Odds and House Advantages.

What happens when I win?

Jump for joy!   The craps gods have smiled upon you.

In Animated Craps: You have the option of handling your winning bets manually or automatically.   You can choose which method you'd like from the Auto-Handle section of the Auto-Play screen.

If you choose to play manually then each time a bet wins, a pop-up box will appear to ask what you'd like to do with your winnings and/or bet.   The box details how much you won, how much you bet, and what the payoff ratio is.   If what you're paid does not correspond with the payoff ratio, then you didn't bet the correct amount.   See How much can and should I bet.

If you choose to play automatically then no visual notice will be given when you win.   However, any active winning Sounds you have selected will still play.

Whether you play manually or automatically there are five basic responses you can give:

1)   **Take Bet and Winnings** - remove your original bet and collect the winnings.
2)   **Same Bet - Take Winnings** - leave your original bet in place and collect only the winnings.
3)   **Press 1 Unit** - increase your original bet by "One Unit" and collect the remaining winnings.   "One Unit" means a portion of the bet considering the denomination Checks you're using and the payoff ratio of the bet.   So a bet that can be divided evenly into $5 checks and that pays **7 to 6** will have "One Unit" of $30.   However, if this amount equals or exceeds the size of the original bet, then the next lower check denomination is used.   So "One Unit" for a $30 bet that pays **7 to 6** is $6 rather than $30.
4)   **Press Double** - increase your original bet by doubling it, and return any remaining winnings.
5)   **Parlay** - increase your original bet with all your winnings.   The Dealer sometimes returns part of your winnings even though you have requested a parlay.   This is to make your wager an amount that allows for a correct or whole payoff.   (With the Auto-Adjust Bet Amounts feature turned off, the full amount is always parlayed.)

These of course are just five common responses.   You can choose any of them and then adjust the bet to any amount you wish.   However, when some bets win they must be taken down.   Therefore only the first response is given as an option.

If the winning bet was a Buy or Lay bet you'll be charged another Vig for options 2 through 5.

Your Odds bet will be returned (having neither won nor lost) if:

- It was Not Working and,
- Its underlying Flat bet wins or loses.

Note 1:   When Put bets are allowed and you've selected **Same Bet - Take Winnings**, you may get more than you bargained for with Come bets.   Here's why: Let's say you have Established a $10 Come 8 bet, you have another $10 on the Come, and you roll an 8.   The established $10 Come 8 bet will win and be instantly re-bet because you've selected **Same Bet**.   Then the $10 Come bet is moved to the 8 and added to the existing bet.   Hence, you end up with a $20 Come 8 bet when you may have only wanted a $10 Come 8 bet through Off-and-On action.

Note 2:   If the amount wagered on a Horn bet, is not evenly divisible by 4,   then the payoff screen will display the amount bet as a fraction.   This is to show what your win was calculated from.   Your net payoff will be rounded down if necessary to make it payable with the Checks available.   The same is true if the Whirl bet is not divisible by 5.   See What Bets are Available? or One-Roll bets.

In a casino: When you win a bet in the Self-Service Area, the Dealer places your payoff next to your bet.   It's then your responsibility to remove it.   Otherwise whatever Checks you leave on the table are considered to be active bets on the next roll of the Dice ("**If it lays, it plays!**", goes the saying).

When you win a bet from the Dealer's Cash Register, the Dealer will put your payoff out on the Come or Don't Come boxes or on the Apron in front of you.

When a Proposition bet wins, the Stickperson figures the payoff and tells the Dealer how much to pay you.   Then the Dealer puts your payoff on the apron in front of you.

You're not allowed to take Checks directly from any Dealer, which is why he or she will ignore your eagerly outstretched hand and instead place all your payoffs or removed bets directly on the table.

The payoff for a Proposition or Place bet is reduced by the size of your original wager since it's left on the layout as a repeat bet.   However, you can get the bet back by asking the Dealer to "**Take it down**", or if you'd rather, you can ask to increase it.   This is usually done with the words "**Press**" or "**Parlay**".

The word **Press** by itself means that you want your bet doubled, which the Dealer does using your winnings, and returns any change.   However, you can Press partial amounts if you want.   For instance, if you had a $12 Place bet on the 6 and you won, you could tell the Dealer to "Press $6" or to "**Press One Unit**" (see above).   In this case, $6 would be taken from your $14 payoff and added to the original wager making it $18, and the remaining $8 would be returned as change.   The word **Parlay** means you want all your winnings added to the bet (see above).

For a Buy or Lay bet, the Dealer will take down and pay off your bet unless you request "**Same bet**" and pay another Vig (Commission).

Some thoughts on Gambling and Craps

Casino gambling is a <u>Negative Expectation</u> activity.   This means that the odds are stacked against you from the very beginning and that on <u>average</u> you can expect to lose.   The longer you gamble, the more this is true because you're continually exposed to the casino's <u>Advantage</u>.

Also, the longer you gamble, the closer the events you're gambling on will approach their predicted <u>Probabilities</u>.   Take for instance the flipping of a coin.   We know that the probability of flipping heads is 1 out of 2 (or 50%).   So let's say we want to bet someone $1 that heads will appear on the next flip.   This should be an <u>Even-Money</u> proposition since there is only one way to win and one way to lose.   But what if that person is only willing to pay 50 cents for each winning $1 bet.   Well, we could decide to accept the risk anyway, make the bet, and hopefully win - who knows?   If we were lucky, we might even flip 10 heads in a row and be $5 richer.   But as anyone who's ever flipped a coin knows - the longer you flip it, the more the percentage of heads and tails will average toward a 50-50 split.   So if an additional 10 flips resulted in tails, we would lose $10 for a net loss of $5 - a pretty bad showing for an equal number of heads and tails.   It's easy to see why this would be a bad bet and a quick way to become a loser.   It may not be as easy to see with a pair of dice with 36 possible <u>Combinations</u> and when the casino's cut is not as high as our 50% example, but the principle and results are the same.

You're mistaken if you think that the casinos are in business to gamble - they're in business to make money!   And they do that quite nicely with a calculated rate of return for all their games.   When you place a wager, it is <u>you</u> who is doing the gambling, not the casino.   They have already figured their cut of the action.

Take live poker for instance.   Although the players bet against each other and not against the <u>House</u>, the House still takes a rake (percentage) out of every pot.   If a group of players with a finite amount of money plays at the same table long enough, they will <u>all</u> eventually lose!   Because the casino, like the tax man, keeps taking that percentage.

But people can and do win at gambling.   That's the hook that keeps gambling alive.   If no one ever won, who'd want to play?   As a matter of fact, casinos want you, or at least someone to win, and they want it advertised.   Why do you think all the bells and whistles go off when someone hits a jackpot? Why do they announce big winners at Keno?   It's to let everyone else know that someone is making money!   When someone hits it real big, it even becomes a news event - that's like free advertising for the casino.   They're happy to pay the winner because they know that for every person who goes away a winner, there are scores more who go away losers.

There's a saying: I'd rather be lucky than good, any day!   In gambling that certainly is true.   Let's define luck as the chance happening of being in the right place at the right time with the right bets.   Say you observe someone betting on the <u>Twelve</u> which has a 30 to 1 payoff and you know that it's a sucker bet because it's <u>True Payoff</u> should be 35 to 1 which gives the casino an amazing 13.89% <u>Advantage</u>.   Then you watch him <u>Parlay</u> $1 into over $900 with two hits in a row!   You may suddenly feel the urge to address him as "Professor" and sign up for his craps seminar!   But, restrain yourself!   The "Professor" was very lucky and chances are he's already paid, or will pay the casino handsomely for his short term windfall.   And at any rate, for each "Professor" there are scores of would-be "Professors" who lose their shirts trying the same thing!

Well OK, are you not discouraged yet and still want to play craps?   Then at least give yourself the best chance of winning.   If it takes luck to win, then how about making sure it only takes a little luck and not a lot.   Make all your wagers on bets that have the lowest <u>House Advantage</u>.   The <u>Pass Line</u>, <u>Don't Pass</u>, <u>Come</u>, and <u>Don't Come</u> bets all have the lowest House Advantages at around 1.4%, and provide you with access to the <u>Odds</u> bets at 0% Advantage.   With <u>Double Odds</u> the combination brings the House edge down to around 1/2%, and greater odds bring it down even more.

There are those who claim that <u>Odds</u> bets do nothing to affect the outcome of the game.   That if two people bet equal amounts on the <u>Pass Line</u> but only one also <u>Takes Odds</u>, they will both on average lose

the same amount.   This is a true statement as phrased but it's misleading.   On average, the Odds bet neither wins nor loses.   By itself it has neither an advantage nor disadvantage for the House or the player.   So the average loss comes from the Flat bet only, where both our players will lose 1.41 cents for every Pass Line dollar they bet.   However, consider that for the same 1.41 cents, the player Taking Odds has had the pleasure of placing much more money into play.   Certainly he stands to lose more if the dice don't roll his way, after all he's betting more.   But he stands to gain far more if the dice do roll his way, and isn't that whole reason he's gambling?   Actually, at Double Odds his total amount risked (or potential loss) goes up by a factor of 2.71, but because the House pays him True Odds on his Odds bets, his potential win goes up by a factor of 3.25!   See Calculation of House Advantage on Pass Line.

So knowing this, all our Odds player needs to do is size his Flat bets so that when he takes Full Odds, he doesn't overextend himself on the total amount risked.   In other words, if he only feels comfortable wagering $15 at a time, then he should bet $5 Flat and take $10 in Odds.   This way, instead of giving the House a 21 cent per bet Advantage (like the player who bets it all on the Flat bet would do), he gives only 7 and his potential winnings go up!

Here's another way of looking at it: You have to make a Flat bet first - there's no getting around that. Therefore, the House has an edge on you from the very beginning and the chances favor you losing your bet.   But now let's say you decide to put more money into play - after all you can't win what you don't bet. The question then is, where can you put your money where it has the best advantage for you?   Do you make another Flat bet with another built-in House Advantage, or heaven forbid - a Proposition bet (ahhhhhh!), or do you Take Odds on your first bet where the House has no advantage?   The answer is obvious.

So once again, to stand the best chance of winning at craps, you should play only the Pass Line, Don't Pass, Come, or Don't Come bets and always take or lay Full Odds.   If you need to keep your total amount risked low, you can find crap tables with minimums as low as $1 or 25 cents.   Your only other alternative is to give the casino a greater shot at your Bankroll with higher House Percentage bets.   If you feel you have to play in that big fancy hotel's casino but you can't afford to take Full Odds because of their high minimums, then at least try to take as much Odds as you can, or at worst make only Flat bets and perhaps Place 6 and Place 8 bets.   But by all means, stay away from the Proposition bets.   How do you think they paid for all that fancy stuff?

There are a couple final points worth making about playing craps:

Gambler's Fallacy

The Odds of rolling any particular number remain the same regardless of what rolls have gone before it. To some gamblers this seems to contradict the notion that the numbers rolled will in time approach their predicted Probabilities.   When too many rolls have gone by without the appearance of certain numbers, or without certain bets winning, they may feel that those numbers or bets are overdue.   On the other hand, if certain numbers have rolled quite frequently or certain bets have won a lot, they may feel they are overspent.   To conclude then that the Dice are bound for a correction constitutes the **Gambler's Fallacy**. For nothing could be further from the truth.   The dice have no memory, and no obligations to fulfill!

A corollary to this is the idea that the dice will continue to run one way or another - hot or cold.   But again, the Odds never change.

Systems

There are no sure-fire guaranteed ways to win at craps.   Anyone telling you they have a cannot-lose, guaranteed, winning system is either trying to sell it to you (in which case it's only a winning system for them) or they're fooling themselves and trying to get you to believe it too.   There are only ways to minimize the House Advantage and hope to be playing smartly when and if the Dice roll in your favor.

So are all systems bad?   Well, it kind of depends on what you define as a system.   In a sense, everyone uses some sort of a system.   Unless you're truly mindless, you must have some conscious thought in your head as to what bets you're going to make and when you're going to make them.   You must have some idea of what you're going to do when they win or lose.   Whether your intent is to make 3 consecutive Field bets and go home, or to play the Pass Line and multiple Come bets all night until you've either won $1000 or lost $500, your method could be called a system.

Usually though a system is thought of as some sort of routine that you follow without making on-the-spot decisions.   Rather than making impulsive bets, the routine tells you what to do and when to do it - over and over, with the hope that a profit can be "ground-out" over time.   However, while systematically making deposits in your bank account may be a great way to compound your money, and systematically buying stocks and bonds may be a great way to dollar-cost-average your investment, the concept doesn't apply to winning money at craps!   Negative Expectation will ensure that the only thing you can systematically compound - is a loss.   In craps, given enough time, every system will lose.

This doesn't mean though that a systems player can't win or has any less chance of winning than anyone else.   If you have a system where you only make Pass Line bets after a Shooter makes the first Pass, and over the course of a playing session you make 20 bets, are you any worse off than someone else who makes 20 random Pass Line bets during the same session?   No, unless you somehow think that the Dice have memory.   The Probability of winning or losing a Pass Line bet is always the same.   So if you only wanted to bet on Shooters who wore your favorite colors - so what?   Your chances of winning are no worse.   The point to remember though, is that neither are your chances any better!

So the thing that matters is what you think your system will do for you.   If you think that your system cannot lose, you're sadly mistaken.   If you think that your system will beat the odds in time, you're in for a surprise.   And if you think that any combination of bets can possibly produce a Positive Expectation then you're delirious.

On the other hand, if you think your system is a fun way to play and you have no delusions about your chances of winning with it, then have at it.   Luck being what it is, you could probably win or lose with any system at some given moment.   For instance, if you have a system that bets frequently on the Eleven and you play at a table where it just happens to be the day for 11's, then who could argue with your success?   Just so you don't think that on average it will ever yield a lower House Advantage than a Don't Pass bet with Full Odds (or a Pass Line bet with Full Odds if you'd prefer to bet With the Dice).

Regardless of whether you want to play a system or just shoot from the hip, the smartest thing to do would be to make sure you utilize those bets with the lowest House Advantages and Manage your Bankroll to suit the circumstances.   In this sense, a bad system could be considered one that utilizes bets with higher House Advantages.

Many elaborate systems have been devised with the idea of protecting certain bets with other bets (called Hedge Betting).   For instance, many folks make Any Craps bets on the Come-Out Roll to protect their Pass Line bets against a loss.   But remember this: No possible combination of Negative Expectation bets can be made to produce a Positive Expectation.   Be particularly aware that using a bad bet (like a Proposition bet) to hedge a good bet (like the Pass Line) only makes the good bet a little worse.

Two classic forms of systematic betting are Progressions in which the size of your wagers are periodically increased, and Regressions in which the size of your wagers are periodically decreased.   Each can be good or bad depending on how they're played.   Perhaps the most famous example of a bad one is a simple system called the Martingale Progression, in which each time a wager is lost, the amount is doubled and bet again.   The hope is that the bet will eventually win, with the winnings covering all previous losses and showing a small profit.   This system may hold up for a while but unfortunately, it's doomed to ultimate failure and can be quite devastating to one's Bankroll.   The progression relies on the Gambler's Fallacy and typically runs into either the player's limited Bankroll or the House's Table Limit. However, a progression of increasing wagers when you're winning can be a good thing just as long as you keep some of the profit along the way.   Remember, you haven't really won anything until it's off the

table and in your hands!   (For an example of a Martingale Progression, try running the file **Sample5.bet** from the Auto-Bet screen.)

Animated Craps' Auto-Betting and Hyper-Drive features are superbly suited to playing systems and testing them repeatedly.   You can watch your systems perform on the Bankroll graph and check the numerous Statistics available, then make adjustments and run them all over again.

All in all, you should know that the odds are against you, but that it's still possible to win.   By making the smart bets and properly Managing your Bankroll, you'll be poised to take advantage of the situation when and if the dice roll your way.

Discipline and Goals - Managing your Bankroll

It's been said that the best money management scheme is to have enough discretionary income from your real job to replenish your <u>Bankroll</u> when you lose!   In other words, don't quit your day job and never bring to the table any more than you can afford to lose.

Perhaps the worst things you can do when gambling is fail to quit when you're ahead and fail to quit when you're behind.   It stands to reason then that failing both of these in the same session has got to be the worst of all.   When you're winning, the action is exciting - you're upbeat and having fun.   It seems like easy money and the urge to keep it going is very powerful - so much so that you keep going even when your winnings begin to evaporate.   But by failing to quit while you're still ahead, a strange mind-set develops.   Reasonably you should be able to lose all your winnings and shrug it off, leaving the table no poorer than when you arrived.   But instead you may feel compelled to repeat your earlier performance.   After all, it was so easy wasn't it?   Perhaps you feel you made some silly mistakes or that all you need is just one more <u>Hot Roll</u> to bring home the bank.   You might be in total disbelief that your bets could possibly lose so many times in a row (<u>Gambler's Fallacy</u>), so you continue on, dipping into your original <u>Bankroll</u>.   But if the dice don't come to your rescue, and they usually don't, you end up leaving a loser, having been a winner - what a lousy feeling.   The temptation is to dig a little deeper in your pocket and maybe even press up your bets with hopes of salvation - a vicious cycle.

One way to avoid falling into such a trap is to set yourself a <u>Loss Limit</u>.   Decide how much you can afford to lose <u>before</u> you start playing, and force yourself to stick to it.   Remember that it's a <u>Negative Expectation</u> game and losing can hardly be considered a personal failure.   Just leave the table and go see a show or have a drink - you've had your fun for the day.   If you can't stand to take the loss - then don't gamble to begin with.

Additionally, it's just as important to set a <u>Win Goal</u>.   This doesn't necessarily mean you should quit playing the moment you win a certain amount.   If you're winning, then by all means ride it out.   You're never going to hit that big payoff if you always quit at smaller amounts.   But it means that when your winning wave subsides or starts to retreat, you should have a point at which you quit a winner - don't chase your winnings down the hole.

Consider the amounts you intend to wager and be reasonable about your Win Goal.   Winning $5 <u>Pass Line</u> bets is not like winning the lottery!   Perhaps 10 times your average wager might be a good starting point and then you can adjust it upward if you continue on a winning streak.   But whatever you set it at, never adjust it down - have some discipline!   The easiest way to adjust up your Win Goal is to set aside checks as you're winning and play with what's left.   First set aside your original <u>Bankroll</u> and then set aside some percentage of checks each time you win - maybe 25% if you want to bet more aggressively and 75% if you're more conservative.

A smart player will reduce the size of his or her bets when losing (ultimately quitting at some Loss Limit) and increase the size of his or her bets while winning (keeping a good portion of the winnings along the way and ultimately quitting at some Win Goal when the tide has turned).

Be honest with yourself about how much "action" you crave and pace yourself accordingly.   If you walked up to a table and lost all your <u>Bankroll</u> in 30 minutes but still had two days of your Vegas vacation left, would you be content to stop gambling?   If not, then you should make fewer or smaller bets.   Perhaps you should find yourself a table with lower limits or break your Bankroll up and restrict yourself to a certain number of "sessions".

How big a <u>Bankroll</u> should you have?   Well, having already stated that it should be no larger than what you can afford to lose, it depends on which bets you make, how large they are, and how long you intend to play.   If you intend to make $100 <u>Pass Line</u> bets with a $300 Bankroll and expect to play for an hour, you're kidding yourself.   A typical table might see 100 dice rolls and 30 <u>Decisions</u> per hour though it varies considerably.   Your Bankroll could be a smoking hole in just a few short minutes!   Assuming worst case, that each bet you make will lose while you're waiting for that <u>Hot Roll</u> to come along, then to last an

hour, your $300 Bankroll could only endure bets as large as $10 ($10 bets times 30 Decisions = $300 Bankroll).   Of course realistically you'd be able to bet more and/or last longer since chances are you won't lose 30 bets in a row on the Pass Line.   Mathematically, on the Pass Line you can expect to lose an average of 1.41 cents for every dollar bet.   So betting $300 per hour you'd expect to lose an average of $4.23 per hour.   At that rate you might think that $300 would last for 3 days of non-stop play - don't count it.   Perhaps one of the best ways to determine how much Bankroll you'll need is to practice your strategy with Animated Craps.   Just remember that each session can yield different results, so it may take many sessions to develop a good average.   So how long does your Bankroll need to last to see that hot roll?   Ah yes, the eternal quest of the craps player.   The answer is as elusive as predicting what the next roll of the dice will be!

Let's end by saying that you should manage your Bankroll by planning for the worst, hoping for the best, and taking what you get!

Pushing the House

Pushing the House means taking advantage of those things that help you reduce the House's Edge.

Pushing the Odds

By now you should know that Odds bets are the best bets you can make in craps.   Since it's in your best interest to bet as much on them as you're allowed, you'll need to find out just how far the House will really let you go.   For instance, at a Double Odds table with a $15 Pass Line bet on the Point Number 6, you might expect that a double amount of $30, would be the allowed for Odds.   But in fact some casinos will let you go $35, or $40, some even $50!   Notice that this may be the same amount that they would allow for a Flat bet of $20, so the lesson here is that $15 is a better bet, because proportionally you're getting more of your money on the Odds and less on the Flat bet.   It's a matter of finding the break points where the House rounds off amounts or adjusts for Check denominations.

At Single Odds tables, Flat bets in increments of 3 checks will provide for greater Odds because pushes will be allowed on Points 5, 6, 8, and 9.   At Double Odds tables, Flat bets in increments of 2 checks will usually provide for greater Odds but sometimes 3.   Pushes are not necessary on Points of 4, 5, 9, and 10 since any Flat amount which is doubled can always be paid off correctly.   So it depends on how they calculate their Odds on Points of 6 and 8.   For instance, 3 checks are better at casinos where you're allowed to take $10 Odds on a Flat bet of $3 and $50 Odds on a Flat bet $15, because your Odds are actually 3 1/3 times your Flat bet versus 2 1/2.   See Odds Allowed.

At casinos that offer very large Odds Allowed factors the added benefit of more odds is not as pronounced, and you should take care to not over-extend yourself.   For instance, the difference between no Odds and Double Odds is about 1% worth of House Advantage, whereas the difference between 10X Odds and 100X Odds is about 1/10%!   However, when considering your overall game strategy, realize that while greater odds may only lower the House Advantage by a fraction of a percent, if your alternative plan is to make some other bet then you'll actually end up increasing the House Advantage rather than decreasing it.

Pushing the Vig

The House charges a 5% Vig to make a Buy or Lay bet.   However, there are times when the House rounds the Vig down if the 5% works out to some fractional amount.   So by taking advantage of this fact, you can lower the House Percentage enough to even make Buying the 5 and 9 more sensible than Placing them, and make Buying the 4 and 10 all the sweeter.   For example, if the House rounds down on amounts of 50 cents or less, then Buying any bet for $30 will lower the House Advantage from 4.76% to 3.23%.   This is lower than the normal House PC for Place bets on the 4, 5, 9, or 10.   However, Place bets on the 6 and 8 are still lower at 1.52% so these bets should never be bought.   If you ever find a casino that always rounds the Vig down regardless of the fraction, you could Buy a $39 bet on the 5 or 9 for $1 and effectively lower the Vig to 2.5%.   Just beware that some casinos will charge you an extra dollar on subsequent bets to make up for shortages in previous Vigs and some casinos will not.   This of course changes the picture, so once again it pays to find out.

Pushing with Puts

Many casinos allow Put bets simply because they give the House a higher Percentage than properly played Pass Line and Come bets.   Ordinarily their percentages are also higher than Place bets and are therefore not worth betting.   But at tables that offer greater than 5X Odds Allowed, they can be better than Place bets.

Put bets can also be better than Buy bets depending on the odds allowed and which number it is you want to buy.   A comparison of the table listed under Put bets with the Table of Odds and House Advantages will reveal the most advantageous situations.

Ten Tips

1)   Know the Odds Payoffs of the bets you intend to make, and wager in amounts necessary to receive whole payoffs from the House.   The Dealer will tell you the right increment amounts to wager, but might not always volunteer the information, so ask.

2)   Make bets where the House Advantage is the lowest.   Especially don't make Proposition bets.

3)   Always Take or Lay max Allowable Odds.   If the resulting wagers are too big for your comfort, then make smaller Flat bets - but do it!   See also Pushing the House.

4)   If you must make Place bets on the 4 or 10 then Buy them (possibly even on the 5 and 9).   See Pushing the House.

5)   Never add to your Pass Line or Come bets after their Points have been Established.   (Unless you're doing so in lieu of a Place bet and you're playing at a casino that offers very large Odds Allowed factors. See Put bet.)

6)   Never remove from your Don't Pass or Don't Come bets after their Points have been Established.

7)   Have a Win Goal and quit while you're still ahead.

8)   Have a Loss Limit and don't lose more than you can afford to.

9)   Increase your bets when winning, decrease them when losing.

10)   Have fun!

Odds and House Advantages

The average percentage that the <u>House</u> makes on each bet as a result of making a less than <u>True Payoff</u> is termed the **House Advantage** (Also termed the **House Percentage**, **Edge**, **PC**, or <u>Vig</u>).   The greater the House PC - the less there is for you: (Note: expand this section to a full screen to view properly)

Bet	True Odds	Payoff Odds	House PC
Don't Pass / Don't Come *	1.0285:1	1:1	1.4
w/ Single odds			0.69
w/ Double odds			0.46
w/ Triple odds			0.34
w/ 5x odds			0.23
w/ 10x odds			0.124
w/ 20x odds			0.065
w/ 100x odds			0.014
w/ 3, 4, 5x odds			0.274
**			
odds on 4 / 10	1:2	1:2	0 (odds only)
odds on 5 / 9	2:3	2:3	0 (odds only)
odds on 6 / 8	5:6	5:6	0 (odds only)
Pass Line / Come	1.0287:1	1:1	1.41
w/ Single odds			0.85
w/ Double odds			0.61
w/ Triple odds			0.47
w/ 5x odds			0.33
w/ 10x odds			0.185
w/ 20x odds			0.099
w/ 100x odds			0.021
w/ 3, 4, 5x odds			0.374
**			
odds on 4 / 10	2:1	2:1	0 (odds only)
odds on 5 / 9	3:2	3:2	0 (odds only)
odds on 6 / 8	6:5	6:5	0 (odds only)
Place 6 / 8	6:5	7:6	1.52
Place 5 / 9	3:2	7:5	4
Place 4 / 10	2:1	9:5	6.67
Lay 4 / 10 (vig on win only)	1:2	1:2 (-5% win vig)	1.64
Lay 5 / 9 (vig on win only)	2:3	2:3 (- 5% win vig)	1.96
Lay 6 / 8 (vig on win only)	5:6	5:6 (- 5% win vig)	2.22
Lay 4 / 10	1:2	1:2 (- 5% vig)	2.44
Lay 5 / 9	2:3	2:3 (- 5% vig)	3.23
Lay 6 / 8	5:6	5:6 (- 5% vig)	4
Field (triple 2 or 12)	20:19	1:1 (2:1-2, 3:1-12)	2.78
Field (double 2 and 12)	10:9	1:1 (2:1-2 & 12)	5.55
Buy 4 / 10 (vig on win only)	2:1	2:1 (- 5% win vig)	1.64
Buy 5 / 9 (vig on win only)	3:2	3:2 (- 5% win vig)	1.96
Buy 6 / 8 (vig on win only)	6:5	6:5 (- 5% win vig)	2.22

Buy 4 / 10	2:1	2:1 (- 5% vig)	4.76
Buy 5 / 9	3:2	3:2 (- 5% vig)	4.76
Buy 6 / 8	6:5	6:5 (- 5% vig)	4.76
Big 6 / Big 8	6:5	1:1	9.09
Hard 6 / Hard 8	10:1	9:1	9.09
Hard 4 / Hard 10	8:1	7:1	11.1
Any Craps	8:1	7:1	11.1
C and E	5:1 ***	13:3 ***	11.1
Three / Eleven	17:1	15:1	11.1
Two / Twelve	35:1	30:1	13.89
Hop (2 ways)	17:1	15:1	11.1
Hop (1 way)	35:1	30:1	13.89
Horn	20:4 ***	17:4 ***	12.5
Whirl	10:5 ***	8:5 ***	13.33
Under 7 / Over 7	21:15	1:1	16.67
Any Seven	5:1	4:1	16.67

* Don't Pass and Don't Come bets are figured for either Bar 2 or Bar 12, and consider the Stand-off as a non-event.   Many craps references list the House PC's for Don't bets w/ Odds as : 1X=.832, 2X=.592, 3X=.459, 5X=.317, 10X=.179, 20X=.095, 100X=.02 .   However, such figures don't account for the fact that most casinos will allow the Don't Odds bets to be larger than just a strict multiple of the Flat bet.   For example, at a Double Odds table with a $5 Flat bet and a Point of 4, you could Lay $20 odds rather than $10.   See Odds Allowed.

** Some casinos offer 3X odds on the 4/10, 4X odds on the 5/9, and 5X odds on the 6/8.

*** These are average figures.   Actual True and Payoff Odds depend on which winning number is rolled.

Calculating the House Advantage

The House Advantage is calculated by taking the difference between the average loss of a bet and the average win, then dividing it by the total amount bet and expressing it as a percentage.

(Average Loss - Average Win) / Total Bet * 100

For example, a Place 8 bet pays 7 to 6 and on average loses 6 times to every 5 times it wins for a total of 11 Decisions.   So for a $6 wager the average loss is $6 times 6 losses ($36), and the average win is $7 times 5 wins ($35).   The difference of $1 is divided by the total amount bet which is $6 times 11 Decisions ($66), and equals 1.52%.

Figuring the average wins and losses for Line bets is a bit more involved.   See Calculation of House Advantage on Pass Line.

#	Times Rolled	Each Flat Bet	Each Odds bet	Potential Win	Potential Loss	Total Bet	Average Win	Average Loss
2	1	5		0	5	5	0	5
3	2	5		0	10	10	0	10
4	3	5	0	15	15	15	5	10
5	4	5	0	20	20	20	8	12
6	5	5	0	25	25	25	11.36364	13.63636
7	6	5		30	0	30	30	0
8	5	5	0	25	25	25	11.36364	13.63636
9	4	5	0	20	20	20	8	12
10	3	5	0	15	15	15	5	10
11	2	5		10	0	10	10	0
12	1	5		0	5	5	0	5
Totals	36			160	140	180	88.72727	91.27273

House Advantage: 1.414141

(Average Loss - Average Win) / Total Bet * 100

#	Times Rolled	Each Flat Bet	Each Odds bet	Potential Win	Potential Loss	Total Bet	Average Win	Average Loss
2	1	5		0	5	5	0	5
3	2	5		0	10	10	0	10
4	3	5	10	75	45	45	25	30
5	4	5	10	80	60	60	32	36
6	5	5	10	85	75	75	38.63636	40.90909
7	6	5		30	0	30	30	0
8	5	5	10	85	75	75	38.63636	40.90909
9	4	5	10	80	60	60	32	36
10	3	5	10	75	45	45	25	30
11	2	5		10	0	10	10	0
12	1	5		0	5	5	0	5
Totals	36			520	380	420	231.2727	233.8182

House Advantage: 0.606061

(Average Loss - Average Win) / Total Bet * 100

The average win and loss columns take into account the True Odds for each number.   For example, after the number 10 is Established as the Point, it will on average win 1 time for every 2 times it loses for 3 total Decisions.   Therefore it wins 1/3 of the potential win and loses 2/3 of the potential loss.

Try comparing the total potential wins and losses for both charts.   Notice that by Taking Odds, the potential loss goes from $140 to $380, an increase of 271%.   Well of course - you're betting more, but does the potential win go up by the same proportion?   No, it goes from $160 to $520, an increase of 325%!   At greater Odds Allowed factors, the difference is even more pronounced.

Note that many Double Odds tables actually allow 2.5x Odds on 6 and 8 which lowers the House Advantage on the Pass Line down to .57%.

Ace

A <u>die</u> showing one dot.

Apron

The open area on the <u>Table Layout</u> between the <u>Pass Line</u> and the wall of the craps table.

Back Line

Another term for <u>Don't Pass</u> and <u>Don't Come</u> bets.

Bankroll

The supply of money you bring to the table.   In Animated Craps you can work with either a limited or unlimited Bankroll and make Bankroll adjustments at any time on the <u>Configuration</u> screen.   Your current Bankroll is shown on the <u>Status-bar</u> at the bottom of the game table.

Bar

A term that means the Don't Pass and Don't Come bets are Stand-offs during certain Come-Out Rolls. e.g. Bar 12 means they receive no action if a 12 is rolled.

Behind the Line

A term to indicate where the <u>Pass Line Odds</u> are placed.

Bet the Odds

To make an <u>Odds</u> bet. To <u>Take or Lay</u> an odds bet.

Bridged

A method of stacking <u>Checks</u> by placing two equal stacks of checks next to each other and capping both of them with more checks.   Used with the <u>Odds</u> bets for <u>Don't Pass</u> and <u>Don't Come</u> bets.

Cold Roll / Cold Hand / Cold Dice / Cold Table

Terms used to indicate that the <u>Dice</u> are <u>Not Passing</u>.   The <u>Shooter</u> is not rolling winning numbers for bets that are <u>With the Dice</u>.

Crap-out

Rolling a 2, 3, or 12 on the <u>Come-Out Roll</u>.   The <u>Shooter</u> is not really out however, and retains the <u>Dice</u>.

Decision

The winning or losing outcome of a bet.   The winning or losing roll that ends the series of rolls that began with the Come-Out Roll.

Deuce

Two <u>Aces</u> or the number 2.

Do / Don't

Do bets are those <u>With the Dice</u> while **Don't** bets are those <u>Against the Dice</u>.   However, a **Do** bet typically refers to just the <u>Pass Line</u> and <u>Come</u> bets, while a **Don't** bet refers to just the <u>Don't Pass</u> and the <u>Don't Come</u> bets.

Down with Odds

A term used when a <u>Come</u> bet becomes <u>Established</u> on a <u>Point Number</u> that already has a <u>Place</u> bet on it.   It means: "Take down my Place bet, give me Odds on my Come bet, and return any change."

To set up Animated Craps to automatically perform **Down with Odds**, check both the <u>Auto-Adjust Bet Amounts</u> and <u>Auto-Remove Place Bets</u> options.

Drop-box

The box underneath the craps table that holds cash that has been exchanged for <u>Checks</u>.   The <u>Boxperson</u> accesses the **Drop-box** through a narrow slot in the table surface.

Easyway

A non-paired <u>Dice Combination</u> totaling 4, 6, 8, or 10.   See <u>Hardway</u> bet.

Even-Money

A payoff of **1 to 1**, meaning you win one unit for every unit bet.

Free Odds Bet

The same thing as an <u>Odds</u> bet.   **Free** just emphasizes the point that the <u>House</u> has no <u>Advantage</u> on an Odds bet.

Front Line

Another term for the <u>Pass Line</u>.

Full Odds / Max Odds

The maximum amount that may be wagered on an <u>Odds</u> bet.   In Animated Craps, the maximum amounts for odds bets are figured based on the Odds Allowed Factors and calculation methods entered on the <u>Configuration</u> screen.

Hand / Shoot

The period of time the <u>Shooter</u> rolls the Dice, from the first <u>Come-Out Roll</u> to a <u>Seven-Out</u>, when the <u>Dice</u> are passed to the next player.

Hedge Bet

Any bet that is made with the intention of protecting or insuring another bet.

Heeled

A method of stacking <u>Checks</u> by placing one check flat on the table surface with the remaining checks placed on top of the first but offset and tilted.   Used with <u>Odds</u> for <u>Don't</u> bets.

High Roller

A player who throws the <u>Dice</u> way up in the air!   No - actually it's a player who wagers large sums.

Hot Roll / Hot Hand / Hot Dice / Hot Table

Terms used to indicate that the <u>Dice are Passing</u>.   The <u>Shooter</u> is rolling winning numbers for bets that are <u>With the Dice</u>.

House Bankroll

The supply of <u>Checks</u> stacked at the side of the table by the <u>Boxperson</u> used to payoff bets and for exchange when players present cash.   The cash disappears down the narrow slot in the table never to be seen again!

Inside Numbers

Any of the Point Numbers 5, 6, 8, or 9.

Line Bet

A <u>Pass Line</u> or <u>Don't Pass</u> bet - the two most basic bets at the craps table.

Loss Limit

A limit you place on yourself to know when to stop betting and avoid heavier losses.   See <u>Discipline and Goals - Managing your Bankroll</u>.

Martingale Progression

A system of betting in which lost wagers are doubled and bet again.   See <u>Systems</u>.

Naturals

Naturals are the numbers 2, 3, 7, 11, and 12 when rolled on the <u>Come-Out Roll</u>.   They are the center and end numbers of the <u>Dice Combination</u> table.   Naturals are sometimes thought of strictly as 7's and 11's with 2's, 3's, and 12's referred to as **Craps**.

Negative / Positive / Zero Expectation

Negative Expectation means that the <u>Odds</u> are against you - that on <u>average</u> you can expect to lose. Conversely, **Positive Expectation** means that the odds are with you - that on average you can expect to win.   Obviously then, **Zero Expectation** means that there is no <u>Advantage</u> for either the player or the <u>House</u> - that on average you can expect to break even.

No Roll

A call from the <u>Stickperson</u> indicating that a <u>Roll of the Dice</u> is invalid.

Not Pass / Dice Don't Pass / Miss

Terms indicating that a 2, 3, or 12 was rolled on the <u>Come-Out Roll</u> or that a 7 was rolled before an established <u>Point</u> was repeated.

Off-and-On

A term used to describe the payoff action when an <u>Established</u> <u>Come</u> bet wins but is simultaneously replaced with a new and equally sized Come bet.

Outside Numbers

Any of the <u>Point Numbers</u> 4, 5, 9, or 10.

Parlay

A term indicating a desire to use all the proceeds of a winning bet to increase the size of the original wager.   See <u>What happens when I win?</u>

Pass / Dice Pass

A winning roll <u>With the Dice</u>.   A 7 or 11 rolled on the <u>Come-Out Roll</u> or a <u>Point</u> being rolled again after having first been established.

Pay the Line

A call made by the <u>Stickperson</u> directing the <u>Dealers</u> to pay off the <u>Pass Line</u> and Pass Line Odds bets.

Pennies / Nickels / Quarters

Slang terms for $1, $5, and $25 <u>Checks</u>.

Pit Boss

The casino employee in charge of a grouping of craps tables (craps pit).

Point / Point Number / Shooter's Point / Come Point / Don't Come Point

One of the numbers 4, 5, 6, 8, 9, or 10 marked on the <u>Dealer's Cash Register</u> section of the <u>Layout</u>.   The **Shooter's Point**   is established on the <u>Come-Out Roll</u> and marked with the <u>Marker Buck</u>.   It determines the fate of the <u>Pass Line</u> and <u>Don't Pass</u> bets.   **Come and Don't Come Points** are established on the initial roll for <u>Come</u> and <u>Don't Come</u> bets and are marked with the <u>Checks</u> that are wagered.

Point Box

One of the boxes marked with the <u>Point Number</u> 4, 5, 6, 8, 9, or 10 found on the <u>Dealer's Cash Register</u> section of the <u>Layout</u>.

Press

A term indicating a desire to increase the size of one's wager, usually by doubling.   However, a quantifier like "Press X" could be used for an amount other than double.

Progressive / Regressive Betting

Making periodically increasing or decreasing bets.   See <u>Systems</u>.

Rail

The outside edge of the craps table where the players' <u>Chips</u> are placed.   In Animated Craps, the lower rail is used as the <u>Status-bar</u> and the side rail contains the usable Checks and <u>Chip-Stacks</u>.

Same Dice

A request made by the <u>Shooter</u> to keep rolling the same <u>Dice</u> after accidentally throwing one or more of them off the table.

Seven-Out / Miss

A 7 that is rolled after a <u>Point</u> has been <u>Established</u> but before the Point Number is repeated.   A <u>Decision Against the Dice</u>.

Shooter

The player rolling the <u>Dice</u>.

Standing Bet

A bet that may either win, lose, or stand (neither win nor lose) depending on the roll of the <u>Dice</u>. Unlike a <u>One-Roll</u> bet, a standing bet may remain in play indefinitely until its particular winning or losing numbers are rolled.

Stand-off / Push

Terms to indicate that a bet is active but receives no action.

Sucker Bet

A slang term for a bet with a high <u>House Advantage</u>.   Generally refers to <u>Proposition</u> and <u>Big 6 / Big 8</u> bets.

Take it Down

A request you make to the <u>Dealer</u> to remove a particular wager from the <u>Layout</u>.

Take the Line / Line Away

A call made by the Stickperson directing the Dealers to remove all Pass Line and Pass Line Odds bets due to a losing Decision.

Toke / Tip

A gratuity for the <u>Crew</u> usually given in the form of a wager.

Trey

An **Ace-Deuce** or the number 3.

True Payoff

A payoff made according to <u>True Odds</u>.

Vig / Vigorish / Commission

The charge or percentage paid to the <u>House</u> to make a bet.   Usually Vig refers to a separately collected charge (occasionally refered to as "Juice") such as with <u>Buy</u> bets or <u>Lay</u> bets, but sometimes it's used to refer to the built-in charge that exists on other bets as well.   See <u>House Advantage</u>.

Win Goal

A limit you place on yourself to protect your winnings.   See Discipline and Goals - Managing your Bankroll.

Auto-Work on Come-Out Roll

This feature, which can be found on the <u>Auto-Play</u> screen, contains a list of the bets that you can choose to have <u>Work or Not Work</u> on the <u>Come-Out Roll</u>.   Click on the ones you want to change and then choose either **Yes**, **No**, or **Default**.   Choosing **Yes** means your selected bets <u>will</u> work on the Come-Out Roll, choosing **No** means they will <u>not</u>, and choosing **Default** will return them to their original Animated Craps settings.   You can make multiple selections by holding down the **Ctrl** key while you click on bets with the mouse-pointer.   You can also double click on bets to switch between Yes and No.

On the game table, when you place the mouse-pointer over a bet, the <u>Status-bar</u> will display whether it's **Working** or **Not Working**.   Specifically calling a bet <u>ON</u> or <u>OFF</u>, will temporarily override this automatic feature and the Status-bar will display either **Called ON** or **Called OFF**.

Auto-Arrange Chips

This feature, which can be found on the Auto-Play screen, will place wagered Chips at set locations and will Color-up the amounts.   For instance, five - $1 chips placed on the Pass Line bet in the upper left hand corner, will be changed into one - $5 chip and placed at the bottom center of the table.

Regardless of whether or not Auto-Arrange is active, individual bets will be arranged if:

- Auto-Adjust Bet Amounts is active and an adjustment is made to the bet amount.
- You Remove partial amounts from the bet using a **Ctrl-Click**.
- A bet is made or changed through Auto-Betting.
- They're located in the Dealer's Cash Register.

In a casino your chips will be placed at certain locations.   See Table Layout.

Auto-Take / Lay Full Odds

These features which can be found on the Auto-Play screen will cause the game to automatically make odds bets for you.   The maximum allowable amount will always be bet based on the Odds Allowed factors and methods entered on the Configuration screen.

■ **Auto-Take Full Odds:**   This feature will automatically make maximum Odds bets for the Pass Line, and Come bets whenever their appropriate Points have been Established.   This is called Taking Odds. Also, if an established Pass Line or Come bet is increased (see Put bet) the odds will be adjusted accordingly.

■ **Auto-Lay Full Odds:**   This feature will automatically make maximum Odds bets for the Don't Pass, and Don't Come bets whenever their appropriate Points have been Established.   This is called Laying Odds.   Also, if an established Don't Pass or Don't Come bet is decreased, the odds will be adjusted accordingly.

Note: The settings for Auto-Adjust Bet Amounts do not affect the calculation of maximum odds.

Auto-Remove Place Bets

This feature, which can be found on the <u>Auto-Play</u> screen, will automatically remove any <u>Place</u> or <u>Buy</u> bet whose <u>Point</u> becomes established with either a <u>Pass Line</u> or <u>Come</u> bet.

For instance, let's say you have wagers on all the Place bets and decide to make a Come bet.   The <u>Shooter</u> then rolls a 6 and your Come bet moves to the 6.   In a casino, the <u>Dealer</u> will ask what you'd like to do with your Place 6 bet.   You could move it to another bet, have it returned, or just leave it.   The best idea is to move it to the <u>Odds</u> bet of your newly established Pass Line or Come bet.   This is accomplished by telling the Dealer, **"Down with Odds"** which means, "Take down my Place bet, and give me odds on my Pass Line or Come bet."

With **Auto-Remove Place Bets** active, the Place 6 bet above would be removed from the table.   Then if <u>Auto-Take Full Odds</u> were also active, you'd   have the equivalent of, **"Down with Odds"**.

Auto-Adjust Bet Amounts

This feature, which can be found on the <u>Auto-Play</u> screen, provides three basic options for checking and correcting wagered amounts:

- **Manual:**   What you bet is what you get - no automatic adjustment takes place.
- **Auto w/ Minor Correction:**   What you bet is automatically adjusted in small increments to an amount that ensures a whole payoff.
- **Auto w/ Color Correction:**   What you bet is automatically adjusted to an amount that ensures a whole payoff and considers the denomination of the <u>Checks</u> you used to make the wager.   An attempt is made to keep the payoff in higher denomination checks.

The type of adjustment given to each of 4 types of bets, can be further refined using the **Bias** options. Bias options are: **Nearest**, **Increase**, and **Decrease**.   If you're a novice, don't worry about these right now.   If you're more advanced, you may want to use them to tailor adjustments to your particular betting style.

When you make a wager that needs to be adjusted, the game first computes two corrected figures: one an increased amount and the other a decreased amount.   The size of these corrections is based upon whether you have minor or color corrections selected.   Then the bias is applied.   For increased bias, the increased figure will always be selected.   For decreased bias, the decreased figure will always be selected.   And for nearest bias, the figure nearest to the un-adjusted wager will be selected.

Depending on which bet you make and the size of your wager, there may not always be a difference between the results of different adjustment options.   That's fine.   It just means that there's no doubt about how the wager should be adjusted.   However, here are some examples of wagers where the adjustment options do yield different results:

$25 Lay 5 bet	w/ Minor Correction	w/ Color Correction
Nearest	24	30
Increase	27	30
Decrease	24	15

$100 Place 6 bet	w/ Minor Correction	w/ Color Correction
Nearest	102	120
Increase	102	120
Decrease	96	60

$25 Come 5 Odds bet	w/ Minor Correction	w/ Color Correction
Nearest	26	30
Increase	26	30
Decrease	24	20

$25 Don't Come 5 Odds bet	w/ Minor Correction	w/ Color Correction
Nearest	24	30
Increase	27	30
Decrease	24	15

Selecting one of the automatic options will adjust the amounts wagered on all current as well as future bets.   Making correctly sized wagers is important - see <u>How much can and should I bet</u>.

Auto-Handle Winning Bets

This feature, which can be found on the Auto-Play screen, offers six options for handling winning bets. The first option is **Manual** and the other five are the same options that appear when you play manually - see What happens when I win?.

Auto-Roll

This feature, which can be found on the <u>Auto-Play</u> screen, allows the <u>Dice</u> to be rolled continuously for up to 10 million rolls!   You activate Auto-Rolling by checking the Auto-Roll box, and then start or stop it the same way you normally <u>Roll the Dice</u>.   Additionally, you can automatically stop Auto-Rolling by highlighting one or more of the **Auto-Stop** events, or by logging an Auto-Bet <u>Action</u> that performs a Stop Auto-Roll / Hyper-Drive.

If desired, you can enter a roll count to restrict Auto-Rolling to a certain number of rolls.   If you stop Auto-Rolling, the roll count will be suspended until you start again.   Once all the rolls have finished and Auto-Rolling has stopped on its own, the roll count will be restored and you can initiate Auto-Rolling again.   If you'd like to reset the count back to the full amount at any time, go back to the Auto-play screen and recheck the Auto-Roll box.

Additionally, you can insert a **time delay** (in seconds) in-between rolls.   Any delay is added on after all sounds have finished playing.   Therefore, entering no time delay and turning all <u>Sounds</u> OFF will make for quicker Auto-Rolling.   Even quicker Auto-Rolling is obtained by using the <u>Hyper-Drive</u> feature.

Auto-Bet Basics

Auto-Betting is a powerful tool that allows you to:

- Set up complete betting schemes.
- Keep track of certain events or create statistics.
- Play fully automatic or manually assisted.

Auto-Betting is event-driven, which is to say that nothing happens until the <u>Dice Roll</u>.   After they roll, winning and losing bets are tended to first and then Auto-Betting takes place.   You <u>Log</u> your Auto-Bets in the **Logged Bets** box where they appear in colored blocks and text offsets to make them easier to read.

At the bottom of the Auto-Bet screen are five boxes that you use to create the bets you want.   The basic idea is to build bets in two parts: **Conditional** parts and **Action** parts, with the understanding that if the <u>Conditions</u> become true then the <u>Actions</u> will be carried out.   Each bet you create must be <u>Logged</u> before it can be used, and logged bets are only active when the Auto-Bet **Active** box is checked.   As you'll see, there's a lot of latitude in how you put bets together, but here's how the basic structure should look:

Basic structure:	**Example:**

Start Condition ...
    Condition
Start Action ...
    Action
	When ...
	    Next roll is a Come-Out roll
	then ...
	    Bet $5 on Pass Line

Let's refer to the complete structure as an Auto-Bet.

The purpose for having separate **Start Condition** and **Start Action** lines is to enable you to assemble any number of <u>Conditions</u> and/or <u>Actions</u> beneath them.   In other words, they mark the beginnings of **Condition Blocks** and **Action Blocks**.   For example:

Multiple Conditions:	**Multiple Actions:**

While ...
    Next roll is a Come-Out roll
    Bankroll is greater than $50
    Place 6 is greater than $6
then ...
    Bet $5 on Pass Line
	When ...
	    Next roll is a Come-Out roll
	then ...
	    Bet $5 on Pass Line
	    Bet $1 on Any Craps
	    Bet $1 on Field

In the first case, there are three Condition lines that form one complete block.   Each Condition must evaluate as true for the block to be considered true and for the Action to take place.   In other words, there's an implied "**and**" between each of the lines in the block.   In the second case, there are three Actions that form a block.   Each one is carried out if the one Condition line is true.   Of course, Auto-Bets can include both multiple Conditions <u>and</u> multiple Actions.

Just as would happen in a casino, your bets are acted on in the order called - so order is important!   For example:

While ...
    Bankroll is greater than $50
then ...
    Bet $5 on Pass Line
While ...
    Pass Line has lost 3 times
then ...

Bet $0 on Pass Line

If the Conditions for both of these Auto-Bets were true then the result would be a $0 Pass Line bet. However, if you reversed their order, the result would be a $5 Pass Line bet.   A number of Editing features makes it easy to change and move your Auto-Bets.

There are two primary Start Conditions: When and While that are used to start Auto-Bets, and there are six additional Start Conditions: and when, and while, or when, or while, and xor when, xor while that are used to modify them.

You can include as many and's, or's, and xor's as you wish, and you can build some pretty complicated bets with them.   By all rights you should be allowed to group them with parentheses to change the logic and really get complicated.   But this is craps and not math class so let's not get carried away!   (Many of you are probably groaning already!)

The logic is meant to be simple, so just remember this: **The first Condition Block that can be evaluated as true skips everything else and proceeds to the Action Block**.

You should be able to build just about any betting scheme you want without resorting to overly complicated Auto-Bets.   Try loading **Sample5.bet** from the Auto-Bet screen - it's a complete betting strategy in only six lines!   Or look at **Sample1.bet** - most of those Auto-Bets simply provide commentary. There are really just five lines of betting code.   **Sample2.bet** is a complete system including Pass Line, Place, and two Come bets with just 15 lines of code.   **Sample3.bet** and **Sample4.bet** are a little more involved but even so the individual Auto-Bets are fairly simple.

Auto-Bets are limited to 1500-1800 logged lines (depending on the type of lines used).

Auto-Bet Start Conditions: When ..., While ...

There are two basic types of Start Conditions that you can create: **When** and **While**.   A block that begins with When will only be acted on at the exact moment the block becomes true.   A block beginning with While will be acted on all the time the block remains true.

For instance, consider the following:

When ...	While ...
Bankroll is greater than $50	Bankroll is greater than $50
then ...	then ...
Bet $5 on Field	Bet $5 on Field

The Auto-Bet starting with When will place a $5 bet on the Field at the moment your Bankroll goes over $50, and the one starting with While will continue to place $5 bets on the Field each time you roll, as long as your Bankroll remains greater than $50.   In both cases, should your Bankroll go below (or equal to) $50 no betting will take place, and should it go above again - the event will be re-triggered.

If you're having difficulty with the concepts of When and While, try looking at your Auto-Bets in another way.   Imagine that instead of When, they say: At the moment and that instead of While, they say: As long as.   For instance:

At the moment that ...	As long as ...
Bankroll is greater than $50	Bankroll is greater than $50
then ...	then ...
Bet $5 on Field	Bet $5 on Field

A Condition Block starting with When and including multiple Conditions must satisfy two requirements to be considered true.   First, each separate Condition must be currently true, and second, at least one of them must have just become true on the most recent roll.   If you want to create a Condition Block where all the Conditions must become true simultaneously, you can use the and when statement.

There are six additional Start Conditions that you can use to modify your Auto-Bets:
        and when, and while,
        or when, or while,
        xor when, xor while.

Auto-Bet Start Conditions: and when ..., and while ...

Two additional Start Conditions that you can use to modify your Auto-Bets are: **and when** and **and while**. Each time you insert and when or and while into a Condition Block, you change the requirements of the Conditions that follow, but they're still considered as part of the same block.   (The and's are lined up flush with the Condition lines to remind you of this fact.)   Here's two examples:

When ...   When ...
    Bankroll is greater than $50   Bankroll is greater than $50
    and when ...   and while ...
    Place 6 is greater than $6   Place 6 is greater then $6
then ...   then ...
    Bet $1 on Hard 6   Bet $1 on Hard 6

In both examples, both Conditions must be true before any Action can take place.   However, in the first example, both Conditions must become true <u>at the same time</u>, whereas in the second, only the first Condition must have just become true.

Remember, there's already an implied and between multiple Condition lines, so the explicit and here is just used to change the <u>When / While</u> requirements.

You can mix in as many and's as you want.   If you follow a When or and when with another and when it adds the requirement that at least one more line must <u>just</u> have become true.   However, following While or and while with another and while is redundant and unnecessary.

Auto-Bet Start Conditions: or when ..., or while ...

Two additional Start Conditions that you can use to modify your Auto-Bets are: **or when** and **or while**. Each time you insert or when or or while into a Condition Block, the <u>Conditions</u> preceding and following it are considered as separate blocks.   For example:

When ...
      Bankroll is greater than $50
   or when ...
      Place 6 is greater than $6
then ...
      Bet $1 on Hard 6

If either one or both of the blocks is true then the overall Conditions are considered to be true.   If you want to make it so that only one of them can be true then you should use an <u>xor</u> Start Condition.   The or when and or while lines are not flush with the Condition lines to help you remember that they're considered as separate blocks.

You can mix in as many or's as you want and you can follow each one with as many <u>Condition</u> lines as you want.

When ...
      Condition 1
   or when ...
      Condition 2
      Condition 3
   or while ...
      Condition 4
then ...
      Action 1

Auto-Bet Start Conditions: xor when ..., xor while ...

Two additional Start Conditions that you can use to modify your Auto-Bets are: **xor when** and **xor while**. Xor is called an <u>exclusive or</u> and works the same as the <u>or</u> modifier except that only <u>one</u> of the Condition Blocks on either side of it can be true.   If they're both true then the overall <u>Conditions</u> are considered false and no <u>Action</u> will be taken.

When ...
      Bankroll is greater than $50
   xor when ...
      Place 6 is greater than $6
then ...
      Bet $1 on Hard 6

When ...
      Bankroll is greater than $50
   xor while ...
      Place 6 is greater then $6
then ...
      Bet $1 on Hard 6

In both examples, if only one Condition is true then the overall Conditions are considered true.   But if both Conditions are true, or both are false then the overall Conditions are false.

Multiple xor's can be tricky unless you really know what you're doing (it's probably best to avoid using more than one per Auto-Bet).   For example:

When ...
      Condition 1
   xor when ...
      Condition 2

xor when
Condition 3
then ...
Action 1

If Conditions 1, 2, and 3 were <u>all</u> true then the overall Conditions would be true too.   How can that be? Doesn't an xor only evaluate true if one of the blocks is false?   Well yes - for a single xor, but since an xor's value is dependent on the values of the blocks above and below it, multiple xor's become inter-dependent.   So here's what happens: If the first and second blocks are true, then the first xor is evaluated as false.   The false result is then xor'ed with the third block which is true and hence the whole thing is evaluated as true.   Fun stuff, huh?   Really, you shouldn't have to get this fancy.

Auto-Bet Start Actions: then ..., else ..., Do this ...

There are three Start Actions that you can use with your Auto-Bets.   The first is **then**.   It simply means that the Action lines that follow it are to be carried out if the Conditions were found to be true.   The second is **else**.   It follows a then block and means that the Action lines that follow it are to be carried out if the Conditions were found to be false.   For example:

While ...
        Next roll is a Come-Out roll
then ...
        Bet $5 on Pass Line
    else ...
        Bet $5 on Come

The third Start Action is **Do this**.   It's actually a stand-alone Action Block and is not associated with any Condition Block.   The Actions that follow it will be carried out whenever they're encountered.

Auto-Bet Conditions

The purpose of Condition lines is to determine whether or not to do something.   Each Condition line is evaluated as either true or false and contributes to the overall decision of whether or not to perform the Actions that follow.   There are many different Conditions that you can Log in your Auto-Bets based upon the events of the game.   Most of them are fairly self-explanatory.

There are some Conditions that allow you to designate ranges, such as "All Place Bets", "Any Place Bets", or "Total Place Bets".

- **Any** means at least one item in the range must meet your criteria.
- **All** means that each item in the range must meet your criteria.
- **Total** means that the combined items in the range must meet your criteria.

A special note when working with ranges: To make these functions more useful to you, any bet in the range that is zero is not considered unless you're specifically testing for zero or comparing with your Bankroll.   For example, let's say you have four Place bets and you want to test to see if any of them are less than $10.   Since there are two other Place bets with nothing on them, a statement like, "Any Place Bets less than $10" would always be evaluated as true even if each of your four Place Bets were greater than $10.   So to make this statement meaningful the bets with nothing on them are excluded.   Consider the following two Auto-Bets:

While ...
     Any Place Bet is less than $10
then ...
     Show Message: "Yes"

While...
     Any Place Bet is equal to $0
then ...
     Show Message: "Yes"

In the first example, the message "Yes" will only be displayed if you have at least one Place bet that is greater than zero and less than 10.   In the second example, the message "Yes" will be displayed if any Place bet is zero, because you're specifically testing for zero.

You can also compare the value of one bet versus another bet, or compare ranges of bets.   Once again, to make these functions more useful to you, any bet in the range that is zero is not considered unless you're specifically testing for zero or comparing with your Bankroll.

Bankroll: Be sure to consider what type of Bankroll you're using.   On the Configuration screen you can choose to allow negative Bankroll amounts and therefore you may need to have your Auto-Bets check for negative amounts as well.

Bankroll Average: You can check the value of any moving average up to 525 rolls or (by entering zero) to a cumulative average of all rolls since the beginning of the game.   Note that this is independent of the moving average you have set on the Bankroll / Hyper-Drive screen.

Simulated hours: Be aware that the computation of simulated hours depends on the number of rolls per hour you have set.

Wins / Losses: Auto-Betting has its own internal counters to keep track of the number of times each bet has won or lost.   You can enter Conditions that test for these values and Action that reset them.   For instance:

When ...
     Pass Line has won 2 times
   or when ...
     Field has won each time
then ...

Bet $1 on Hard 6

Note: To enter the word "each", enter a zero value.

Flag: This Condition allows you to name a <u>Flag</u> and test whether it's value is true or false.   (You set the value of a Flag with an <u>Action</u> line.)

Last answer was "Yes" and **Last answer was "No"**:   These Conditions allow you to test for the answer of the last Yes/No question that was asked from an <u>Action</u> line.   For instance:

Do this ...
       Yes/No question: Do you want to play the Don't side now?
When ...
       Last answer was "Yes"
then ...
       Go to "Play the Don't Side"

Chip-Stack ref #: These words appear in a number of Conditions and allow you to use the value of one <u>Chip-Stack</u> to reference another.   See <u>Chip-Stack ref #</u>.

Initializing Auto-Bet: This special Condition is only true only when your Auto-Bets are first invoked. (See <u>Checking and Running Auto-Bets</u>).   Once Initializing has been performed or bypassed, it evaluates as false.

Auto-Bet Actions

There are many different Actions that you can Log in your Auto-Bets.   Most of them are fairly self-explanatory.

Although you can log any Action to occur at any time you want, the only Actions that will actually be carried out are those that would normally be permitted.   For example, if you tried to directly bet $10 on the Don't Come 4, you'd be denied because such a bet is not possible without first going through the Don't Come bet.   If you had the Notices turned on from the Configuration screen, then a message would appear during play to inform you of this fact.

The word **Bet** at the beginning of any Action means to override any existing bet and absolutely bet the designated amount (assuming it would normally be permitted).   Bet can also be used to put amounts on Chip-Stacks even though they're not bets.

Any reference to a **last** bet means what the bet was before the last roll - not necessarily what it was the last time you bet it.   So if you made a $10 Field bet, lost, and on the very next roll said "Bet 200% of the last Field bet on Field", you'd get a bet of $20.   But if you waited longer than the very next roll and said the same thing, you'd get a bet of $0 - no bet, because the Field was $0 before the last roll.   If you want to save the value of a bet for use in later rolls, just store it in a Chip-Stack.

Auto-Betting has its own counters to keep track of the number of times each number is rolled and the number of times each bet has won or lost.   The won/lost counters for each bet indicate either wins or losses but not both.   (See also Bet Trends.)   For instance, if the Field bet won once, lost once, and then won twice, the Field bet counter would indicate two wins and that's it.   This in essence makes the won/lost counters a short-term trend indicator.   These counters can be **reset** by logging a reset Action or by starting a New game.   This is important if you want to build Auto-Bets that repeat.   For instance, say you log the following Auto-Bet:

While ...
       Field has lost 2 times
then ...
       Bet $0 on Field
   else ...
       Bet $5 on Field

This would allow you to make continuos $5 Field bets on each roll until they lost twice in a row.   So then what?   If you didn't reset the losses at some time, the Field would never be bet again.   So if you wanted it to repeat you could do a couple things:

- Make a bet on the Field manually or through another Auto-Bet.   Then if it wins, it'll reset itself, or
- Log an Auto-Bet that performs a reset Action.   For instance:

When ...
       Next roll is a Come-Out roll
then ...
       Reset wins/losses on Field

Often you may find it easier to record the specific rolls, wins, or losses you want on a Chip-Stack and deal with them there.

Some Actions let you take **percentages of bets**, including percentages that are larger than the size of the bets themselves.   e.g. If you had a $10 Pass Line bet and said, "Bet 250% of Pass Line on Come", you'd get a $25 bet on the Come.

You can also create lists and retrieve the **highest**, **lowest**, and **average** values from them.   For instance,

in the following Auto-Bet, if the current value of <u>Place</u> 6 and 8 were $6 each, and <u>Pass Line</u> were $15, then the average of $9 would be bet on the <u>Come</u>.

When ...
A Point is established on Any number
then ...
Bet the average   Place 6   on Come
of:
Place 8
Pass Line

Note that a single line by itself such as: "Bet the average of: Place 6 on Come" does not figure the running average of all Place 6 bets. In fact if you only have one item in your list, the result will always be the current value of that item. Also note that to make these functions more useful to you, bets without money on them are ignored.

Go to: This useful Action works in conjunction with <u>Labels</u> and allows you to re-direct the flow of betting by jumping to wherever the Label is located. For instance:

When ...
Pass Line has won each time
then ...
Go to Increase Bets
...
...
...
∎

Do this ...
Add $5 to Pass Line

In this example, all the lines between the Go to statement and the green Label will be skipped whenever the <u>Pass Line</u> bet wins. You have to <u>Log</u> a Label first before you can use it in a Go to statement.

Set flag: This Action allows you to name a <u>Flag</u> and set it's value to either true or false. You then test for it's true/false value with a <u>Condition</u> line.

Yes/No question: This Action allows you to ask a Yes/No question whenever you want. You then test for the answer with a <u>Condition</u> line. This can be useful if you want to manually make decisions based on what you see happening in the game.

Show messages and **Play sound**: These Actions allow you to display text messages and/or play sound during the course of the game For messages just enter the text. For sound files enter the drive/directory/filename of the sound you want to play, or double-click on the entry box and a dialog box will appear from which you can locate the file you want.

If you want to log a question or message that's longer than one line, then just log two or more lines next to each other and they'll be combined. As they're combined, each line is normally separated with a carriage return, but if desired, the carriage return can be suppressed by placing a semi-colon at the end of the line.

Get input and bet it on ... : This Action allows you to display a message that contains a box for entering a value. The entered value is then bet on the designated spot and overrides any existing bet (assuming it would normally be permitted). You can customize what message is displayed by preceding the Get input statement with one or more Show message lines. Only one box can be displayed per message.

Name Chip-Stack #: This Action allows you to assign a name or short description to a Chip-Stack to

make it easier to remember what it's value is supposed to represent.

Chip-Stack ref # : These words appear in a number of Actions and allow you to use the value of one Chip-Stack to reference another.   See Chip-Stack ref #.

Return: This Action works in conjunction with the Go to command.   If you've used the Go to command to branch somewhere else in your Auto-Bets, the Return command can be used to cause a branch back to the next line following the Go to command that sent it there.   Return commands are ignored if they're encountered without a Go to command having been issued.

Invoke Show-steps: This Action is useful for debugging your Auto-Bets.   See Show Steps During Play.

Set Auto-Handle Winnings / Set Auto-Take Full Odds / Set Auto-Lay Full Odds: These selections allow you to toggle their respective settings on the Auto-Play screen.   It's important to remember though that their effects are general in nature and do not become active until the next dice roll.   Depending on your specific requirements, you may find it more useful to write your own script to handle winning bets and Take / Lay Odds.

ATM Withdraw / Deposit: Withdrawals and deposits are permitted and limited just as they are on the Configuration screen.

Bankroll Average: You can use the value of any moving average up to 525 rolls or (by entering zero) to a cumulative average of all rolls since the beginning of the game.   Note that this is independent of the moving average you have set on the Bankroll / Hyper-Drive screen.

Auto-Bet Labels and Comments

Labels are lines you can Log to:

- Visually divide sections of your code to make it easier to understand.
- Act as destinations for Go to Action lines.

You can give a Label any name you want, just as long as there's not already another Label with the same name (Labels are not case sensitive, e.g. "End" and "end" would be treated the same). When a Go to statement causes a jump to a Label, the execution of code resumes immediately following the Label. Therefore, Labels cannot appear in-between Condition lines since errors in logic would occur. However, they can appear anywhere else including in-between Action lines because Go to statements are Actions too.

Comments are lines you can enter to make notes in your code. You enter Comments the same way you enter Labels except that you precede a Comment with an apostrophe. Comments cannot act as Go to destinations the way Labels can, but can appear anywhere.

You can load **Sample1.bet**, **Sample3.bet**, or **Sample4.bet** from the Auto-Bet screen to see some examples of using Labels and Comments.

Note: Labels are restricted to 80 characters in length.

Making and Editing Auto-Bets

Making an Auto-Bet is easy.   There are five boxes at the bottom of the Auto-Bet screen where you create the lines you want in your code.   To change anything in one of the boxes, just click on what it is you want to change.   In most cases a yellow box will appear with a list of alternate selections to choose from.   In some cases a blinking cursor will indicate that you can make an entry from the keyboard.   Then when you're ready to log the line, click on the adjacent command button and then click in the **Logged Bets** box where you want the line to appear.

For example, let's say the Condition box currently says "Initializing Auto-Bet" but you want to make a line that says "Pass Line is greater than $10".   Simply click anywhere on the words "Initializing Auto-Bet" and a list will appear from where you can locate the item "Pass Line".   Once you have selected "Pass Line" the line will change into something like, "Pass Line has won each time".   Then click on the words "has won" and a list will appear from where you can locate "is greater than $".   Finally, enter "10" to complete the line.

To make complete Auto-Bets, you should assemble your lines in the **Logged Bets** box as outlined in Auto-Bet Basics.

An array of editing features allows you to manipulate one or more lines of code at a time.   To select a logged line simply click on it.   The line will turn blue and a counter at the side of the table will indicate that 1 line is selected.   To select more than one line at a time use a **Ctrl-Click** (hold down the Ctrl key while clicking on the line with the mouse-pointer).   Or to select an entire block of lines, first click on one end of the block, then **Shift-Click** on the other end.   You can then choose editing options from the menu or use short-cut keys such as **Ctrl-X**, **Ctrl-C**, **Del** to cut, copy, or delete your selected lines.   If cut or copied, **Ctrl-V** will allow you to paste lines back in wherever you have the Focus set.

Another option for moving lines around is **drag and drop**.   Just click and hold the left mouse button while pointing at a line and drag the mouse-pointer to where you want to drop it.   More than one line can be dragged at a time by first using Ctrl-Clicks or Shift-Clicks as described above.   While dragging, the cursor will change appearance during which time you can move it above or below the **Logged Bets** box to scroll the lines if needed.   To delete lines you can also drag them to the **trash can**.

Double-clicking on a line will copy it into the appropriate boxes at the bottom of the screen where you can modify and re-log it if desired.

See Auto-Bet Files for explanations for **Copy To** and **Paste From**.

Auto-Bet Options

The following options are available from the Auto-Bet menu bar:

- **Show Steps During Play:**   This option allows you to step through your Auto-Bets one line at a time during play on the main game table.   The primary purpose is to assist you in debugging your Auto-Bets by showing you how your bets are being evaluated.   Each time your Auto-Bets are run, a **Step-Through** screen will appear to show the status of each line and allow you to view Statistics before proceeding to the next line.   By selecting **Cancel** from this screen, you deactivate the Step-Through option only - your Auto-Bets remain active.

You can also Log an Action line called **Invoke Show-Steps** which performs the same function.   The difference is that this action only starts the Step-Through process when called for.   This way you can avoid the cumbersome task of stepping through a whole bunch of lines just to get to the ones you're most interested in, and even if you cancel the Step-Through, it will start again the next time.

- **Show Logged Messages During Play:**   This option lets you quickly turn on or off the display of any of your Auto-Bet Messages during play.   This option can also be set from the **Auto-Bet Messages** check-box on the Notices section of the Configuration screen or from the **Show Auto-Bet Messages** menu item on the Bankroll / Hyper-Drive screen.

- **Show Line Numbers Now:**   This option lets you view line numbers next to the **Logged Bets** box. These line numbers are used as references during the Step-Through process (see above), and if selected will print out if you Print your Auto-Bets.

Checking and Running Auto-Bets

In order for your Auto-Bets to run, they have to be structured properly.   (See Auto-Bet Basics.)   You can check whether or not they are by clicking on **Check Bets** from the Auto-Bet menu bar.   If something is missing or in error then the line in question will scroll to the top of the **Logged Bets** box and a message will appear to tell you what's wrong.   The same check will take place automatically if you have the **Active** box checked and you attempt to return to the main game table.

Each time the dice have rolled and winning and losing bets have been handled normally, Auto-Betting begins at the top of your **Logged Bets** list and runs through to the bottom, evaluating and acting on each line along the way.   The words "Auto-Betting" will flash on the main game table to tell you that this has been completed.   This top-to-bottom flow can be re-directed by using Go to Action lines but eventually the end of the list must be reached before the game can continue.   If there are places in your list other than the end where you'd like Auto-Betting to stop, simply Log a Label at the end of your list and call it something like "End" or "Finish", then log a line that says: "Go to "End"".

Since you can re-direct the flow of your Auto-Bets with Go to Action lines, it's possible for you to create situations that get stuck in an **Infinite Loop**.   This would mean that Auto-Betting would never reach the end so that the game could continue.   If this happens, then instead of flashing on and off, the words "Auto-Betting" will remain steady on the screen.   Just click anywhere on the table or press any key, and a message will appear asking if you'd like to interrupt Auto-Betting.   Then you can examine your Go to lines and Labels to see where the problem is.   If you're running Hyper-Drive and observing the Bankroll / Hyper-Drive screen, an infinite loop is indicated by a failure of the roll count to increase.   Click on the **Stop Hyper-Drive** button to interrupt it.   If you take no action to interrupt an infinite loop, Auto-Betting will eventually abort on its own.

Although Auto-Betting is event-driven and takes place after the dice roll, there's one time when Auto-Betting takes place before the dice roll.   This is termed Initializing.   It occurs automatically whenever you start a New Game and allows you to set up the table in advance rather than waiting for something to happen.   Initializing is offered only after you return to the main game table with **Active** Auto-Bets and one of the following has happened:

- You've created new or opened saved Auto-Bets.
- You've edited your Auto-Bets.
- You've re-checked the **Active** box on the Auto-Bet screen.   (This is a way to force an Initialization if you want.)

The reason for allowing Initializing at these other times is so you can load and run as many different Auto-Bet files during the course of a game as you wish, and still let each one have it's own Initialization without resetting the whole table.

Generally speaking, you'd always want to Initialize your bets when you start a new game (automatic) or when you first load new Auto-Bets.   At other times such as when you've only done some minor editing of the bets or perhaps turned them off momentarily and then back on, you'd want to bypass initializing.

If your Auto-Bets don't seem to be doing what you want, one thing you can do is activate the Show Steps During Play option and step through them one line at a time.   It might also be useful to Print out your lines and follow along at the same time.   Also see Auto-Bet Common Mistakes.

You can play the game manually at the same time that Auto-Betting and/or Auto-Rolling are active.   Just realize that the manual bets you make may be overridden by your Auto-Bets and vice versa.   Turning the Notices OFF will expedite Auto-Betting.

Auto-Bet Common Mistakes

■ Making <u>assumptions</u>!   With Auto-Betting you have to think a little more about exactly what it is you're trying to do.   e.g.   Say you want to double your <u>Pass Line</u> bet if it wins.   Do you mean every time it wins, just one time, just on the <u>Come-Out Roll</u>, or what?   Additionally, remember that there are often several things that can happen to a bet, e.g. a <u>Don't Pass</u> bet on the <u>Come-Out Roll</u> can win, lose, <u>Stand-off</u>, or become <u>Established on a Point</u>.

■ Using <u>When</u> instead of <u>While</u>.   e.g.   Say you <u>Log</u> an Auto-Bet that says, "When next roll is a Come-Out roll then bet $5 on Pass Line".   Since When means do something the first time it happens, back-to-back <u>Come-Out Rolls</u> would not continue to make this bet.   Here's what would happen: On the first Come-Out Roll, $5 would be bet on the <u>Pass Line</u>.   Then if the <u>Shooter</u> rolled a 2,3,or 12, the bet would lose but would not be re-bet because the Shooter would still be on a Come-Out Roll.   To re-trigger this bet you'd have to <u>Establish a Point</u>, reach a <u>Decision</u>, and then begin a new Come-Out Roll.   If that's what you intended - no problem.   But if you intended to always have a $5 bet on the Pass Line then using While would be the thing to do.   So if your bets don't seem to be doing what you want, look and see if there aren't some When's that should be While's.

■ Referring to a <u>Come</u> bet.   When you refer to the Come bet you're referring to the area on the table marked "Come" - which does not include Come bets that have already been established on Points.   To refer to established Come bets you would refer to specific bets like "Come 4", "Come 5", etc., or you could refer to a range such as Any, All, or Total Come bets".   For instance, "All Come bets" would refer to all <u>established</u> Come bets and not the area marked "Come".

■ Referring to a <u>Don't Come</u> bet.   When you refer to the Don't Come you're referring to the area on the table marked "Don't Come" - which does not include Don't Come bets that have already been established on Points.   To refer to established Don't Come bets you would refer to specific bets like "Don't Come 4", "Don't Come 5", etc., or you could refer to a range such as Any, All, or Total Don't Come bets".   For instance, "All Don't Come bets" would refer to all <u>established</u> Don't Come bets and not the area marked "Don't Come".

■ Making decisions based on wins/losses.   Remember the win/lose event for a bet only happens when you actually win or lose money on it.   If you want to refer to the win/lose event for a bet that doesn't have a wager on it, then refer to the <u>conditions</u> under which it would win or lose.   For instance, if you wanted to refer to the winning conditions for a <u>Pass Line</u> or <u>Place</u> 6 bet but didn't have wagers on them, you could say something like:

When ...
   A point is decided "for" any number
 or when ...
   A 7 has rolled each time
   Last roll was a Come-Out roll
 or when ...
   A 11 has rolled each time
   Last roll was a Come-Out roll
then ...
   Show message: Pass Line has won.

While ...
   A point is established on any number
   Any 6 has rolled each time
then ...
   Show message: Place 6 has won.

If you want to do a similar test for the <u>Don't Pass</u> bet make sure you refer to the proper numbers for Bar 2 or Bar 12.

■ Calling bets <u>ON</u> and <u>OFF</u>.   If a bet is <u>Working</u> normally, you can call it ON or OFF with one call. However, if it's already been called ON or OFF, then the first time you call it back OFF or ON actually returns it to it's normal working status (which may be ON or OFF depending on the circumstances).   So if you want to go from ON all the way to OFF, or from OFF all the way to ON, you need to make the call twice.

Auto-Betting Discussion and Examples

Auto-Betting provides you virtually unlimited control over making bets and for that reason requires your attention to detail.   Often new users overburden themselves by trying to build complex systems before they're familiar with the syntax. But the thing to do is start small.   Build some simple Auto-Bets first and experiment with them.   Then as you begin to understand how they work, you can build on top of what you've learned.

Another thing you can do is take a look at some of the sample Auto-Bets available.   Start by printing one out to give yourself a "big picture" of what it does (turning on the Show Line Numbers option before you print might also be helpful).   Then activate it and start Rolling the Dice.   See if you can follow what's happening with the script and take some notes if necessary.   If something's not clear, turn on the Show Steps During Play option and step through the bets one at a time to see how they're being evaluated. When you think you've got it figured out, try making some modifications and see if they do what you expected.   After a while you'll begin to get the hang of it.

It's important to remember that Auto-Betting can encompass anything from simply assisting your manual play to doing everything for you.   Therefore, it's a good idea to insert a few Comments to not only describe what you're Auto-Bets are supposed to do, but to remind yourself of any Configurations or Auto-Play settings that they rely on.   For instance, perhaps you have some Auto-Bets that play the Pass Line with the intent of always Taking Odds, but rather than including Auto-Bets to Take Odds, you're relying on the Auto-Take Full Odds feature from the Auto-Play screen to do it for you.   That would be an important thing to remember and have set.

As you become more proficient and attempt to build more complex Auto-Bets, you'll probably find that breaking them up into sections will be helpful.   For instance, you might have a section that only deals with winning bets and another with losing bets.   Maybe you want a section that determines how large your next bet should be and another that decides where to put it.   By entering some Labels to identify your sections, your Auto-Bets will not only be much easier to read, but you can branch off to these sections using Go to Action statements.   For instance, say you had a whole bunch of things you needed to do whenever the Pass Line bet won.   You could say something like this:

When ...
   Pass Line has won each time
then ...
   Go to "Handle a win"

Then throughout the "Handle a win" section you wouldn't need to include any more lines like Pass Line has won each time because it would be a given.

Just for fun, let's build a few Auto-Bets together.   Let's say we want to bet the Pass Line.   We could start out like this:

While ...
   Next roll is a Come-Out roll
then ...
   Bet $ 5 on Pass Line

Now let's play with it a bit on the main game table.   Notice that when the Pass Line bet wins, that it doesn't matter what we do with the winnings - we always end up with a $5 Pass Line bet.   That's fine if it's what we intended.   But what if we wanted to allow ourselves the option of Pressing up our winnings? Well then, let's add another Condition line like this:

While ...
   Next roll is a Come-Out roll
   Pass Line is equal to $ 0

then ...
   Bet $ 5 on Pass Line

Great!   Now the $5 bet is only made if there's not already a bet in place.   Let's move on.   Say we decide that whenever the size of our <u>Pass Line</u> bet exceeds $5 that we also want to bet $1 on <u>Any Craps</u>.   Let's add a second Auto-Bet like this:

While ...
   Next roll is a Come-Out roll
   Pass Line is equal to $ 0
then ...
   Bet $ 5 on Pass Line
While ...
   Pass Line is greater than $ 5
then ...
   Bet $ 1 on Craps

Again, let's play with it and see what happens.   Notice that as long as the <u>Pass Line</u> bet is greater than $5, we get a $1 <u>Craps</u> bet on <u>every</u> roll.   Is that really what we wanted?   Perhaps we'd prefer to just make the Craps bet on the <u>Come-Out Roll</u> as a <u>Hedge</u> for the Pass Line.   Well, what if we changed the While to When.   Would that work?   Not quite.   It would work the first time the Pass Line became greater than $5, but it wouldn't work on subsequent Come-Out rolls if the Pass Line remained above $5 (as with several wins in a row).   Well then, let's add another <u>Condition</u> like this:

While ...
   Next roll is a Come-Out roll
   Pass Line is equal to $ 0
then ...
   Bet $ 5 on Pass Line
While ...
   Pass Line is greater than $ 5
   Next roll is a Come-Out roll
then ...
   Bet $ 1 on Craps

That's it.   Now we've got what we want.   Each time we add something new and we're not quite sure about it, we can hop back to the main game table and try it out.   By using the <u>Roll Your Own Numbers</u> pad, we can quickly roll the numbers we want and see if our Auto-Bets do what we intended.   If necessary we can also turn on the <u>Show Steps During Play</u> option to help analyze what's going on.

As we get fancier with our Auto-Bets, we might find a need to store certain values for use elsewhere or later in the game.   That's where <u>Chip-Stacks</u> come in.   Let's say we wanted to run a 10 step <u>Progression/Regression</u>.   How would we know what step we were on?   One way (and probably the easiest) would be to use the value of a Chip-Stack to keep track of it.   It's no different than if we were standing at a real table and keeping track of the step by using a stack of $1 chips.   Let's say that each time we win a <u>Pass Line</u> bet, we want to move up one step in the progression and each time we lose we want to go down one step.   Let's arbitrarily choose Chip-Stack # 1 as the guide:

When ...
   Pass Line has won each time
then ...
   Add $ 1 on Chip-Stack # 1
When ...
   Pass Line has lost each time
then ...
   Subtract $ 1 from Chip-Stack # 1

Then all we'd need to do is make a section in our Auto-Bets where we make bets based on the value of our step.   For instance, here's an example of something we could do on step # 3:

While ...
   Chip-Stack # 1 is equal to $ 3
then ...
   Bet $ 20 on Pass Line

One thing we need to remember though, is to think about our limits.   Since we're only planning on 10 steps, what are we going to do if our Chip-Stack value becomes less than 1 or greater than 10?   Maybe we should limit the steps like this:

When ...
   Pass Line has won each time
   Chip-Stack # 1 is less than $ 10
then ...
   Add $ 1 on Chip-Stack # 1
When ...
   Pass Line has lost each time
   Chip-Stack # 1 is greater than $ 1
then ...
   Subtract $ 1 from Chip-Stack # 1

This would prevent the Chip-Stack from going out of limits.   However, another thing we could do is intentionally let it go out of limits and use that as a trigger to reset the whole progression like this:

When ...
   Pass Line has won each time
then ...
   Add $ 1 on Chip-Stack # 1
When ...
   Pass Line has lost each time
then ...
   Subtract $ 1 from Chip-Stack # 1
While ...
   Chip-Stack # 1 is less than $ 1
   or while ...
   Chip-Stack # 1 is greater than $ 10
then ...
   Bet $ 1 on Chip-Stack # 1

OK, let's try to build a complete system.   Here's our objectives:

Build a progressive/regressive system using the Pass Line bet.   But only bet on Shooters who have qualified by making at least 1 Pass from an established Point.   Each time the Pass Line bet wins decrease the next bet by 25% and each time it loses increase the next bet by 50%.

So where do we start?   Well, we know we want to bet the Pass Line, so let's start there.

When ...
   Next roll is a Come-Out roll
then ...
   Bet $ 5 on Pass Line

Seems simple enough, now what?   Well let's think about how this bet behaves and whether it's going to

fit into our grand scheme.   If need be, we can return to the game table and experiment with some rolls to be sure of what it does (remember to check the Auto-Bet Active box first).

First off is the obvious: This Auto-Bet always makes a bet whenever the next roll first becomes a <u>Come-Out roll</u>.   But we said we only wanted to bet on qualified <u>Shooters</u>, right?   So we already know that our next step must be to somehow include a **delay**.   How can we do that?   Well we have to use something to tell us when to bet and when to hold off.   It doesn't really matter what we use, as long as it works and we can make sense of it.   One way would be to use a <u>Flag</u> and set it to true when the Shooter qualifies and false otherwise.   Then we could just test to see if it were true in order to make our bet.   Let's give it a name that indicates what it's used for:

When ...
      Next roll is a Come-Out roll
      Flag "OK to bet on this Shooter" is True
then ...
      Bet $ 5 on Pass Line

Now our <u>Pass Line</u> bet will not be made unless our <u>Flag</u> is set to true.   So then comes the next logical step - adding lines to set the Flag to true or false.   If the <u>Shooter</u> makes a <u>Point</u> we want to set it to true and when he <u>Sevens-out</u> we want to set it to false.   Naturally, we want to place these lines in front of the lines that bet the <u>Pass Line</u> so that the proper value is set before we use it:

When ...
      A Point is decided "against" any number
then ...
      Set flag "OK to bet on this Shooter" to False
When ...
      A Point is decided "for" any number
then ...
      Set flag "OK to bet on this Shooter" to True
When ...
      Next roll is a Come-Out roll
      Flag "OK to bet on this Shooter" is True
then ...
      Bet $ 5 on Pass Line

Another way to create a delay would be to use a <u>Chip-Stack</u> to count <u>Passes</u> and reset it to zero on a <u>Seven-out</u>.   That way anytime the value of the Chip-Stack was greater than zero we'd know the <u>Shooter</u> was qualified and we'd be good to make our bets.   So let's remove the <u>Flag</u> we experimented with and substitute in a Chip-Stack:

When ...
      A Point is decided "against" any number
then ...
      Bet $ 0 on Chip-Stack # 1
When ...
      A Point is decided "for" any number
then ...
      Add $ 1 to Chip-Stack # 1
When ...
      Next roll is a Come-Out roll
      Chip-Stack # 1 is greater than $ 0
then ...
      Bet $ 5 on Pass Line

Great, now we've got our delay and bets will only be made on qualified Shooters.   A <u>Flag</u> would've

worked fine, but by using a <u>Chip-Stack</u> we've gained some flexibility.   For instance, it would be easy to modify our lines to only make bets on <u>Shooters</u> who had made at least 2 <u>Passes</u> - just change the one line to, Chip-Stack # 1 is greater than $1.

Now let's think through what we've got so far and play with it on the game table if necessary.   Notice that our delay is working fine but that our bets are always $5.   It doesn't matter whether we win and <u>Press</u> or <u>Parlay</u>, or whether we lose, we always end up with a $5 bet.   So it seems the next step is to allow the bet amount to change.   We said when we win we want to decrease the previous bet by 25% and when we lose we want to increase the previous bet by 50%.   Something like this:

When ...
   Pass Line has won each time
then ...
   Bet 75 % of the last Pass Line on Pass Line
When ...
   Pass Line has lost each time
then ...
   Bet 150 % of the last Pass Line on Pass Line

However, these lines aren't going to work as they are because they aren't tied into our delay.   If the <u>Shooter</u> <u>Sevens-out</u> then these lines will make a bet right away instead of waiting until the next Shooter makes a <u>Pass</u> first.   How about if we add in our delay condition like this:

When ...
   Pass Line has won each time
   Chip-Stack # 1 is greater than $ 0
then ...
   Bet 75 % of the last Pass Line on Pass Line
When ...
   Pass Line has lost each time
   Chip-Stack # 1 is greater than $ 0
then ...
   Bet 150 % of the last Pass Line on Pass Line

No, that's not going to work either.   For instance, look at Pass Line has lost each time.   It's a <u>Condition</u> that's only true the moment it happens.   By the time Chip-Stack # 1 is greater than $0, the lost condition may be long gone and the bet will not be made.   And anyway, how are we going to work these lines in with the ones we already have that make our <u>Pass Line</u> bet.   Let's try something different.   Since we know we want the Pass Line bet increased or decreased based on a win or a loss but we have a delay working, that means we need to store our bet amount somewhere until we're ready to use it.   Let's use another <u>Chip-Stack</u> to store the amount as follows:

When ...
   Pass Line has won each time
then ...
   Bet 75 % of the last Pass Line on Chip-Stack # 2
When ...
   Pass Line has lost each time
then ...
   Bet 150 % of the last Pass Line on Chip-Stack # 2

As before, these lines should go in front of the lines that bet the <u>Pass Line</u> so that the proper value is set before we use it.   Then all we need to do is substitute Chip-Stack # 2 as the source for our bet.   So instead of saying, Bet $5 on Pass Line, we'll say, Bet 100 % of Chip-Stack # 2 on Pass Line as follows:

When ...

A Point is decided "against" any number
then ...
Bet $ 0 on Chip-Stack # 1
When ...
A Point is decided "for" any number
then ...
Add $ 1 to Chip-Stack # 1
When ...
Pass Line has won each time
then ...
Bet 75 % of the last Pass Line on Chip-Stack # 2
When ...
Pass Line has lost each time
then ...
Bet 150 % of the last Pass Line on Chip-Stack # 2
When ...
Next roll is a Come-Out roll
Chip-Stack # 1 is greater than $ 0
then ...
Bet 100 % of Chip-Stack # 2 on Pass Line

Well, we've met all our objectives.   That should do it, right?   No, just one last thing.   We need to make sure that we've thought about the limits of our Auto-Bets - the minimums, maximums, beginnings, and endings.   If we run the bets we've built so far - nothing happens.   Why?   Because we've made the values of Chip-Stack # 2 and the Pass Line dependent on one another.   If one starts as zero the other will be zero too.   Something needs to get the ball rolling.   One thing we could do is insert some lines at the beginning that set an initial value for Chip-Stack # 2:

When ...
Initializing Auto-Bet
then ...
Bet $ 5 on Chip-Stack # 2

This would get us started alright but let's do something different instead.   Let's decide that $5 should be our minimum bet and insert a check for the value of Chip-Stack # 2 as the last thing that happens just before our bet is made.   Here's our final product (you can find it listed on the Auto-Bet screen as **Sample10.bet**):

When ...
A Point is decided "against" any number
then ...
Bet $ 0 on Chip-Stack # 1
When ...
A Point is decided "for" any number
then ...
Add $ 1 to Chip-Stack # 1
When ...
Pass Line has won each time
then ...
Bet 75 % of the last Pass Line on Chip-Stack # 2
When ...
Pass Line has lost each time
then ...
Bet 150 % of the last Pass Line on Chip-Stack # 2
While ...
Chip-Stack # 2 is less than $ 5

then ...
Bet $ 5 on Chip-Stack # 2
When ...
Next roll is a Come-Out roll
Chip-Stack # 1 is greater than $ 0
then ...
Bet 100 % of Chip-Stack # 2 on Pass Line

There you have it.   In only 25 lines we've built a complete <u>progressive/regressive</u> system that only bets on qualified <u>Shooters</u> - not bad.

Auto-Bet Flags

A **Flag** is simply a true/false indicator that you can use with <u>Auto-Betting</u> to help determine whether or not to do something.   You can use as many Flags as you want and name them whatever you want.   Flags can appear in both <u>Condition</u> lines (where you <u>test</u> their values) and <u>Action</u> lines (where you <u>set</u> their values).   Consider the following:

When ...   When ...
     Bankroll is greater than $50   Flag "Winning" is True
then ...   then ...
     Set Flag "Winning" to True   Bet $20 on Pass Line

In the first example, the Flag's value is set to true, and in the second example that value is used to decide whether to bet $20 on the <u>Pass Line</u>.   A Flag is always assumed to be false until you set it to true.   But once set, it's value always stays the same until you change it again or until you start a <u>New</u> game.

When you select Flags from either a <u>Condition</u> or <u>Action</u> line, a place for you to enter the Flag's name will appear.   By clicking on that spot, a list of any currently defined Flags will also appear.   You can then select one of the Flags already in use or simply enter a new name to define a new Flag.   Giving your Flags descriptive names will make your Auto-Bets much easier to read.

Try loading **Sample3.bet** or **Sample4.bet** on the Auto-Bet screen for examples of using Flags.

Auto-Bet Files

Working with <u>Auto-Bet</u> files is fairly straight forward.   You can **Open**, **Save**, **Delete**, and **Print** files just as you can with most programs.   The only requirement is that the Auto-Bet filenames use the file extension: **.bet** .   (If you don't enter the extension, it'll be added for you.)

Auto-Bet files contain text as well as code.   Therefore, you can't create or modify an Auto-Bet file in a text editor and then load it into the game - it won't work.   However, if you need just the text for some other reason, you can copy your Auto-Bets to a text file, print them out, or copy them to the clipboard by using the **Copy** command from the Auto-Bet Edit menu.

Under the Edit menu are two options titled **Copy To** and **Paste From**.   **Copy To** allows you to copy <u>selected</u> lines from the **Logged Bets** box to either an Auto-Bet file or a **text** file of your choice.   **Paste From** allows you to paste the contents of an Auto-Bet file into your current Auto-Bets starting at the <u>Focus</u> point.   You can copy and paste just snippets of code or entire betting schemes.

When you exit Animated Craps without saving your Auto-Bets, a backup file called **default.bet** will be created which contains them and will automatically reload the next time you run the game.

Chip-Stacks

Chip-Stacks are simply areas where you can stack <u>Chips</u> to total any amount you wish.   Each stack can then be used in a variety of different ways, such as to make bets.   There are a total of 100 Chip-Stacks available for your use, all of which can be viewed on the <u>Chip-Stack Values</u> screen found under the <u>Statistics</u> menu.   Additionally, any four of the 100 Chip-Stacks can be displayed on the side <u>Rail</u> of the main game table.

You can choose which four Chip-Stacks to display on the side rail by selecting the **Options** Menu on the <u>Chip-Stack Values</u> screen.   Once selected, they appear on the <u>Rail</u> as appropriately numbered blue chips in separate boxes with enough space next to them to stack your chips.   You put chips on a stack the same way you would put chips on a bet (see <u>How to make a Bet</u>), and you can see the stack's exact value by placing the mouse-pointer over it and looking at the <u>Status-bar</u>.   At the present time Chip-Stacks are limited to whole numbers but can be either positive or negative values.   On the main game table, negatively valued Chip-Stacks are always shown as numbers and not <u>Chips</u>.

All 100 Chip-Stacks can also be used in conjunction with <u>Auto-Betting</u> where their values can be set, modified, or tested.   Auto-Betting also allows you to give them names to make it easier to remember what their values are supposed to represent.

Here are some possible uses for Chip-Stacks:

■ **For making bets:**   If you have certain amounts you always want to have handy, you can stack them up and use them to make bets.   For instance, let's say you frequently make $32 bets.   Instead of having to click on a $25 chip, then the bet, then a $5 chip, then the bet, then a $1 chip, then twice on the bet, you could instead stack these chips up on the <u>Rail</u>.   Then whenever you wanted $32 you could select the whole stack by clicking on the numbered blue chip and using it to make bets just as you would with any other selected chip.   Note that negatively valued Chip-Stacks can be used to reduce the size of table bets but cannot cause the bet values to also become negative.

■ **As counters:**   Perhaps you'd like to keep track of how many times certain events have occurred.   Just add a $1 chip on a stack each time and you've got a running total.

■ **For calculations and statistics:**   During <u>Auto-Betting</u> you can use Chip-Stack values to perform math on other Chip-Stacks or on bets.   Although the game keeps track of many statistics, there may be something not covered that you'd like to know.   For an example of this try loading the file **Sample6.bet** or **Sample7.bet** from the Auto-Bet screen.

■ **As Flags:**   <u>Auto-Betting</u> provides for naming and using true/false <u>Flags</u>.   However, you can just as easily use the value of a Chip-Stack to make decisions.

■ **As Pointers:**   <u>Auto-Betting</u> allows you to use the value of one Chip-Stack to reference another.   See <u>Chip-Stack ref #</u>.

Chip-Stack ref

Auto-Betting allows you to use the value of one Chip-Stack to reference the value of another.   For instance, look at the following Auto-Bets:

Do this ...
      Bet $20 on Chip-Stack #1
      Bet $5 on Chip-Stack #20
      Bet 100% of Chip-Stack ref #1 on Pass Line

How large is the resulting bet on the Pass Line?   Did you guess $5?   That's correct.   **Chip-Stack ref #**1 uses the value contained in Chip-Stack # 1 (which is $20) to refer to the value contained in Chip-Stack # 20 and returns $5.   In other words, **Chip-Stack ref #**1 means that Chip-Stack #1 points to the value of Chip-Stack #20.   So why not just say Bet $5 on Pass Line?   Well sure if that's all you need.   But there are times when it can be extremely useful to step through lists of items using a variable pointer. Remember that since there are only 100 Chip-Stacks, the Chip-Stack being used as a pointer must have a value between 0 and 99 to be meaningful.

Warning!   Are you a beginner?   Is your head spinning yet?   The **Chip-Stack ref #** function is an advanced feature.   It can be confusing to a novice and in most cases is not necessary to perform desired tasks.

For an example of how to use **Chip-Stack ref #** try loading the file **Sample9.bet** from the Auto-Bet screen.

Hyper-Drive

So you want to test your betting systems over thousands or millions of rolls?   Here it is!

The Hyper-Drive is a feature that allows you to run your Auto-Bet simulations completely hands-free for up to 10 million rolls.   You can even minimize the game and let it run in the background while you do work in another application.

Running Hyper-Drive   is easy: Just click on Bankroll / Hyper-Drive under the Statistics menu and then click on the button that says **Start Hyper-Drive**.   That's it.   Hyper-Drive runs with whatever game options and Auto-Bets you have selected with the following exceptions:

▪ If you have Auto-Handle Winning Bets selected to **Manual**, then Hyper-Drive will assume **Take Bet and Winnings** instead.

▪ If the Auto-Roll box is unchecked then Hyper-Drive will treat it as if it were checked except that any time delay and Auto-Stop's will be ignored.   If you have zero rolls entered then Hyper-Drive will enter the maximum of 9,999,999.

▪ Any Sounds or general Notices you have selected from the Configuration screen will be ignored.

There are only two screens you can observe while Hyper-Drive is active: the Bankroll / Hyper-Drive screen and the main game table.   The Bankroll / Hyper-Drive screen shows the graphic results of your simulation.   There's not much to see on the main game table because the updating of graphics has been suspended for speed.   However, it's from there that you can minimize the game.   For most computers, Hyper-Drive runs the fastest with the Bankroll / Hyper-Drive screen closed.

There are a number of ways to stop Hyper-Drive:

▪ Click on **Stop Hyper-Drive** on the Bankroll / Hyper-Drive screen.
▪ Log an Auto-Bet Action that performs a **Stop Auto-Roll / Hyper-Drive**.
▪ Reach the number of rolls entered on the Auto-Roll counter.
▪ Break the Bank or exceed the max loss limit at plus or minus $9,999,999 !
▪ Click anywhere on the main game table (you'll be queried).

You can turn the Hyper-Drive on or off at any time.   For instance, you could load some Auto-Bets and Roll the Dice manually for a bit to see how things are going and then crank up the Hyper-Drive.   Then stop and go back to manual play again.

You don't have to run Auto-Bets during Hyper-Drive.   If you wanted, you could just record rolls into a Dice Roll File.   Or you could use it to accumulate statistics and observe different Roll Totals or Roll Frequencies.

Game Files

Working with game files is fairly straight forward.   You can **Open**, **Save**, and **Delete** files just as you can with most programs.   The only requirement is that the game file names use the file extension: **.crp** .   (If you don't enter the extension, it'll be added for you).

When you select **New** from the Game menu, the following happens:

- You'll be asked if you'd like to save the current game and any unsaved Auto-Bets.
- The table is cleared of all Bets and Statistics.
- If any Auto-Bets are present (saved or not), you'll be asked if you want to keep them with your new game.   If so and they're active, they'll be re-initialized.
- If the Dice Roll Recorder is running, you'll be asked if you want to rewind it for playback.   If the recorder is not running but a Dice Roll File is open, you'll be asked if you want keep it open.
- A new game is started with whatever Configuration settings are already present.   This makes it easy to play multiple sessions with the same-settings.
- The game will begin with a new Come-Out Roll.

Animated Craps does not use separate **configuration files**.   Rather, each game you **Save** contains all the Configuration settings in use at the time.   This preserves the integrity of your saved games and assures that you can continue playing them exactly the way you left them.

However, let's say you'd like to be able to save and re-use the settings for several of your favorite casinos.   You can easily treat game files as if they were **configuration files** as follows:

1)   Set up the table as you like it.
2)   Select **Save** under the Game menu.

Then whenever you're ready to play one of your favorites, just do this:

1)   **Open** the saved game file.
2)   Select **New**.

Alternatively, you could just open the game file and begin playing.   Then when you're done you could either avoid saving it or save it under a different name and your configuration file would remain intact.

When you exit the game all your settings, Bets, Statistics, Bankroll and any Auto-Bet or Dice Roll files in use will automatically be saved in a file called **default.crp**.   This is true whether you've already saved the game under another name or not.   If you have Auto-Bets present but didn't save them then they'll be saved in a back-up file called **default.bet**.   The next time you run Animated Craps, these default files will reload and you'll be right back where you left off.

When you **Save** a game, a reference to your current Auto-Bet file (if any) will be included.   Then later when you reopen the saved game, the referenced Auto-Bet file will reopen also.   But since you can use the same Auto-Bet file with as many different games as you want, beware that modifying the Auto-Bet file will affect any saved games that reference it.   If this happens, a message will appear when you open the saved game stating that the referenced Auto-Bet file has been changed.   The same holds true for Dice Roll Files.

Roll the Dice

You may cause the Dice to be rolled any of the following ways:

- Select **Roll the Dice** from the Action menu
- Press the right mouse button
- Press the **F2** key
- Choose Roll Your Own Numbers from the Action menu, and click on a number.
- Choose Bankroll / Hyper-Drive from the Statistics menu and start the Hyper-Drive.

The dice are normally kept with the Stickperson, in a bowl at the side-center of the table.   When everyone is ready, the Stickperson uses a long stick to rake the dice to the Shooter.   If the Shooter is rolling for the first time, the Stickperson will offer a number of dice (generally 4 to 8) from which the Shooter selects two.   The Shooter then throws the dice at the opposite end of the table,   where they must strike the back wall to ensure a random roll (this is the reason for the pyramid shaped protrusions on the wall).   The Stickperson or Boxperson   will probably consider the roll valid even if the dice don't hit the wall, but will admonish the Shooter and take the dice away if he or she persists.   If the roll is unacceptable or unreadable such as when a die has gone off the table surface, the Stickperson calls "No Roll", and offers the Shooter a new selection of dice.   If desired, the Shooter (and only the Shooter), can quickly call out "Same Dice" and wait for the ejected cube to be retrieved.   Many Shooters do so because of superstition.   After a brief inspection by the Boxperson, the same dice are returned and rolling continues.   When the roll is good the Stickperson calls the number of the dice total, and adds a little banter to describe the roll, such as "4, Hard 4, in the Field, Pay the Line and Take the Don't!"

Everyone at the table has an opportunity to be the Shooter.   When one Shooter Sevens-out, the dice are passed clockwise to the next player.   A player is not required to shoot and may pass the dice.   Most casinos require the Shooter to place a Line bet thus ensuring the Shooter not only has a stake in the game, but hopefully will not leave before a Pass or Seven-Out.   However, you're not obliged to keep rolling if you don't want to - just tell the Stickperson you want to pass the dice.

There are any number of restrictions on handling the dice, and one of the Crew will surely let you know if you do something unacceptable.   Just pick up the dice with one hand, keep them over the table, and smoothly throw them to the opposite end of the table.   Showing off your "Behind-the-back and over-the-Stickperson's-head" trick-shots, or performing voodoo rituals and magic acts on the dice are not going to win you any points (pun intended)!

An Auto-Roll feature is available from the Auto-Play screen.   When activated, Auto-Rolling is initiated in the same fashion as a normal dice roll (any of the first 3 options above) and once set in motion, the same options are used to stop Auto-Rolling.

Dice Roll Files

Dice Roll Files allow you to record, playback, edit, and print out any sequence of <u>Dice</u> rolls.

To get started, select Dice Roll Files from the <u>Action</u> menu.   Then select **New/Open** from the File menu and enter the name of a Dice Roll File.   Dice Roll File names end with the extension: **.rol** .   Files are not limited in size as long as you have drive space available.   One byte of disk space is needed for each roll of the dice.   So a Dice Roll File containing 50,000 rolls would be 50KB in size.   A Dice Roll File of 10 million rolls would be 10MB.   Since Animated Craps is presently restricted to 10 million rolls, there should be no reason to create a file larger than that.   You could do it if you wanted, but you wouldn't be able to play it all in one session.

Because of the potentially large size of Dice Roll Files, they're created and handled a bit differently than any of the other game files.   Each file is recorded, edited, or played directly to or from your disk drive.   That's why there's no "Save" item under the File Menu - because it's automatically saved as you create it.   This presents one caution however.   Let's say you had recorded 1000 rolls and wanted to create a second file using the last 200 of those rolls.   If you were to delete the first 800 rolls thinking you could just do a "Save as" operation, you'd be out of luck.   As soon as you hit delete, your first file would become 200 rolls long.   Instead you should select the desired rolls and choose **Copy to Roll File** from the Edit menu.

Once a Dice Roll File is open, the list of dice rolls will appear on the left-hand side of the Dice Roll File screen.   One line will be highlighted in blue and white - this is called the **Next Roll** line.   It's the point at which the next roll will be recorded into or played back from depending on what you decide to do.   It's also used to select rolls for editing.   You can move the Next Roll line around by simply clicking on the dice roll list, or by entering the desired roll number in the box on the upper right-hand side of the screen. You can select entire blocks of rolls by clicking on the roll list while holding down the **Ctrl** or **Shift** keys. For instance, lets say you have 100 rolls in the list and you want to select roll number's 10 thru 20.   Just click on roll number 10 and then Ctrl-click on roll number 20.   The whole block will then appear in dark blue and you can choose one of the editing options from the Edit menu.   (Note: Clicking on the roll list with the right mouse button has the same effect as Ctrl-clicking with the left button.)

■   **Recording:**   You can record rolls from either the Dice Roll File screen or the main game table.   Either way, you can choose the exact numbers you want or select random rolls.

When recording from the Dice Roll File screen, you have the option of **Inserting** or **Typing-Over** your dice rolls.

When recording from the game table, a graphic recorder with a red light will appear on the lower portion of the table to remind you that you're recording.   Every roll is recorded, regardless of how you <u>Roll the Dice</u> (even while using the <u>Hyper-Drive</u>).   Recorded rolls will be entered into the Dice Roll File starting at whatever **Next Roll** line you have selected (see above).   So if you have a Dice Roll File that already has some rolls in it and you place the Next Roll line at the end of the file, any new rolls will append on to the end of the file.   On the other hand, if you place the Next Roll line at the beginning or middle of the file, any new rolls will **Type-Over** the old rolls.   There is <u>no</u> **Insert** capability while recording during game play. To stop recording just click on the recorder or press the **Esc** key.   You'll be asked if you want to rewind and replay the rolls.   Whether you want to or not, the rolls have been recorded and can be replayed at any time.

■   **Playback:**   To playback a Dice Roll File you must first open the file and then set the recorder for playback during game play.   You can set the **Next Roll** line anywhere you like, and playback will begin from that point (see above).   You can also return to the Dice Roll File screen at any time and change the Next Roll line to wherever you'd like.   During playback, a graphic recorder will appear on the lower portion of the table to remind you that your rolls are coming from a recorded file (the only exception to this would be if you selected a number from the <u>Roll Your Own Numbers</u> pad, in which case the chosen number would be rolled).   When all the recorded rolls have been played back, you'll be asked if you'd like

to rewind and play them back again.   If you answer no, the recorder will disappear and dice rolling will return to normal.   You can stop playback at any time by clicking on the recorder or pressing the **Esc** key.

Recorded rolls can be played back manually or automatically through the Auto-Roll or Hyper-Drive features.   One reason you might want to use the same set of recorded rolls is to compare different betting schemes especially when using the Auto-Bet feature.

Each dice roll is divided into 3 pieces of information: the roll number, the individual die numbers, and the number called.   For **Print-outs** or for **Copying to a Text File** the number called is always included, but you can choose whether or not to include the other two pieces of information.   Obviously, the more information you include - the larger the print-out or text file will be.   For print-outs you can also choose a font size between 3 and 20 points.   Smaller font sizes will allow more rolls to fit on a page.   If you decide not to include the roll numbers, remember that on each page, the printed list is ordered from top to bottom first, then left to right.

One last point to remember: The sequential dice roll numbers do not necessarily correspond to the game roll numbers.   In other words, dice roll # 500 is not necessarily the same as game roll # 500 unless of course you opened your Dice Roll File and began playback at the beginning of the game.

Call Bets "ON"

A bet may be called **ON** a number of different ways:

- Move the mouse-pointer over the bet and press the **F6** key.
- Click the mouse-pointer on the green ON button and then click on the bet.
- Select **Call bet ON** from the Action menu, and then click on the bet.
- Log an Auto-Bet that calls the bet **ON**.

However, if you have the "Key-in Bet Amounts" feature in use, then the **Betting-window** determines which bet to call **ON**.   In that case you can:

- Move the Betting-window over the bet and press the **F6** key.
- Move the Betting-window over the bet and select **Call bet ON** from the Action menu.

A bet that is called **ON** is said to be Working.   You would call a bet **ON** only if you had previously called it OFF and wanted to reactivate it, or if it were a bet that would otherwise have been automatically **OFF**. The Dealer marks this bet with a green ON button.   During the Come-Out Roll some bets are automatically **OFF** or **ON**.   See Auto-Work on Come-Out Roll.

You can call all bets **ON** by using the **Shift-F6** keys together, or by selecting **Call all bets ON** from the Action menu.

Note: If a bet has been previously called OFF, the first instance of calling it **ON** actually returns the bet to normal status (which may be Working or Not Working depending on the circumstances).   The second instance forces the bet to **ON**.

Call Bets "OFF"

A bet may be called **OFF** a number of different ways:

- Move the mouse-pointer over the bet and press the **F7** key.
- Click the mouse-pointer on the red <u>OFF button</u> and then click on the bet.
- Select **Call bet OFF** from the <u>Action</u> menu, and then click on the bet.
- <u>Log</u> an <u>Auto-Bet</u> that calls the bet **OFF**.

However, if you have the "<u>Key-in Bet Amounts</u>" feature in use, then the **Betting-window** determines which bet to call **OFF**.   In that case you can:

- Move the <u>Betting-window</u> over the bet and press the **F7** key.
- Move the Betting-window over the bet and select **Call bet OFF** from the <u>Action</u> menu.

A bet that is called **OFF** is said to be <u>Not Working</u>.   You would call a bet **OFF** if you wanted to deactivate it for a period of time with the intent of reactivating it later.   This saves everyone the effort of removing and replacing the chips.   Instead, the <u>Dealer</u> marks the bet with a red <u>OFF button</u> until you call it <u>ON</u> again.   During the <u>Come-Out Roll</u> some bets are automatically **OFF** or **ON** even though they aren't marked as such.   See <u>Auto-Work on Come-Out Roll</u>.

You can call <u>all</u> bets **OFF** by using the **Shift-F7** keys together, or by selecting **Call all bets OFF** from the <u>Action</u> menu.

Note: If a bet has been called <u>ON</u>, the first instance of calling it **OFF** actually returns the bet to normal status (which may be <u>Working or Not Working</u> depending on the circumstances).   The second instance forces the bet to **OFF**.

Working / Not Working Bets - "ON" and "OFF"

A bet that is **ON** is active and said to be **Working.**   You would Call a Bet ON only if you had previously called it OFF and wanted to reactivate it, or if it would otherwise have been automatically OFF during the Come-Out Roll. The Dealer marks the bet with an ON button.

A bet that is **OFF** is inactive and said to be **Not Working**.   You would Call a Bet OFF if you wanted to deactivate it for a period of time with the intent of reactivating it later.   This saves everyone the effort of removing and replacing your Checks.   Instead, the Dealer marks the bet with an OFF button until you call it **ON** again.

You may change the working status of any bet, at any time, for any reason with the following two exceptions:

1)   Pass Line and Come bets that have been Established on Points must always work and cannot be called **OFF,** reduced, or removed.   This is to maintain the House Advantage.   See the section titled Flat Bets / Odds Bets.

2)   Don't Pass and Don't Come bets that have been Established on Points must also always work and cannot be called **OFF**.   However, they can be reduced or removed.   By all rights, you should be able to call them ON and OFF if you wanted - it would do nothing to change the Odds.   However, the House doesn't allow it because a bet that has been called OFF is treated as though it had been removed from the table.   Therefore turning it ON again would be like putting it directly on the established position - which is not allowed.

In addition to calling bets ON or OFF, you can change whether or not certain bets are automatically ON or OFF during the Come-Out Roll by using the Bets Auto-Work on Come-Out Roll feature.

Chip-Stacks cannot be called ON or OFF because they're not bets.

Remove Bets

There are a number of different ways to remove bets:

- Move the mouse-pointer over the bet and press the **Del** key (the delete key).
- Move the mouse-pointer over the bet, then hold down the **Shift** key and click the left mouse button.
- Log an Auto-Bet that removes the bet.
- Move the mouse-pointer over the bet, then hold down the **Alt** key, click and hold the left mouse button and move the mouse-pointer to another location.   This is called **dragging** and is used to move your bet. When you release the mouse button the moved value will drop (be added) onto whatever the mouse-pointer is over, and will be treated the same as if you had placed chips there normally.   If not over another bet or Chip-Stack, the value is lost - you have in effect just removed the dragged bet.

However, if you have the "Key-in Bet Amounts" feature in use, then the **Betting-window** determines which bet to remove.   In that case you can:

- Move the Betting-window over the bet and press the **Del** key.
- Move the Betting-window over the bet and select **Remove bet** from the Action menu.

You may remove any bet at any time except for Pass Line, and Come bets after their Points have been established.   (See Working Bets.)   If you remove a Lay or a Buy bet the commission you paid is returned.

Additionally, you can remove partial amounts by holding down the **Ctrl** key and clicking on the bet with the mouse-pointer.   Whatever amount you have selected in the lower left corner of the rail will be deducted from the bet for each click.   For instance, if you had the $5 chip displayed in the lower left corner and you did a **Ctrl-Click** on top of a $100 Field bet, $5 would be removed, leaving a $95 Field bet.

Pressing **Shift-Del** (the Shift key in combination with the Del key) or selecting **Remove all bets** from the Action menu will remove **all** bets except those described above.

Key-in Bet Amounts

This feature, available from the <u>Action</u> menu or by pressing the **F9** key, allows you to use the keyboard to enter your bet amounts.   A small **Betting-window** appears on the table for this purpose.   The Betting-window may be moved from one bet to another by using the **arrow** keys or by pointing and clicking the mouse (the mouse-pointer will not place chips on bets while the Betting-window is present).   Also the following commands, normally focused on the mouse-pointer, will shift to the Betting-window:

- The **Del** key (<u>Remove Bet</u>)
- The **F5** key (<u>Buy Place Bet</u>)
- The **F6** key (<u>Call Bet ON</u>)
- The **F7** key (<u>Call Bet OFF</u>)

If you're using the <u>Roll Your Own Numbers</u> pad, pressing the **Tab** key will shift the keyboard <u>Focus</u> off the Betting-window and onto the pad, then use any of the arrow keys to select the number you want to roll and press RETURN.   To shift the focus back to the Betting-window, press the Tab key until the text in the window is highlighted, or if the betting-window is already where you want it, just start keying in an amount.

The Betting-window must have the keyboard <u>Focus</u> before you can move it with the arrow keys.   When the betting-window has the focus, the numbers in the window are either highlighted or a blinking cursor is present.

Special note: Whenever the Betting-window first enters the <u>Don't Pass</u> bet area and a <u>Point</u> is already <u>established</u>, the window is positioned to address the Don't Pass <u>Odds</u> bet.   By pressing the right arrow key, you can shift it to the Don't Pass <u>Flat</u> bet.

Using the Keyboard

To select menu or button items, hold down the **Alt** key while pressing the underlined letter listed on the menu or button.   For instance, to select the Game menu, press and hold **Alt** while also pressing **G**. Then press another underlined letter of one of the menu items, or use the **arrow** keys to highlight it and then press **Return**.

Items in the Action menu can also be accessed by using the shortcut keys listed next to each item.   For instance, the **F2** key can be used to Roll the Dice.

To select an item in a list, such as those on the Auto-Play screen, first press **Tab** until you've shifted the Focus to the list, then use the **up/down arrows** until the item you want is highlighted, then press the **Spacebar** to select it.

You enter bets from the keyboard by activating the Key-in Bet Amounts feature.

On the Auto-Bet screen:

You can **Tab** through all the items used to build bets.   Pressing **Spacebar** while an item is highlighted will expose a list.   Then use the **arrow** keys to make your selection and press **Spacebar** again to execute.

To Log a bet, **Tab** to the appropriate command button (e.g. Condition) and press **Return** or **Spacebar**. The line will highlight and focus will shift to the Logged Bets area.   Finally, use the **arrow** keys to select the position for the bet and press **Return** or **Spacebar** again to execute.

To select a line in the Logged Bets box, first make sure the box has the focus (press **Tab** if necessary until a dotted outline appears), then use the **up and down arrow** keys to move the Focus to a different line and press **Spacebar** to select it.   You can select multiple lines by using **Ctrl-Spacebar** and **Shift-Spacebar**.

Focus

The object toward which all keyboard activity is directed.   Just like you must direct the mouse-pointer to objects to click on them, you must also direct the keyboard to objects.   You change the keyboard focus to other objects by pressing the **Tab** key or in some cases by pressing the **arrow** keys.

Objects display when they have the focus in a number of different ways such as highlighted text, blinking cursors, or dotted outlines.

Display Bets as Numbers

This feature, located on the <u>Action</u> menu, allows you to view all bets on the table as numerical readouts. It can be activated or de-activated by clicking on the menu item or by pressing the **F11** key.   You can continue to play the game while the numbers are displayed or switch back and forth between numbers and chips.

Roll Your Own Numbers

This feature, which is accessed from the <u>Action</u> menu (or with the **F12** key), allows you to roll any number combination you so desire.   How lucky can you get?   Needless to say, it's not a feature you'll find in any casino, but it serves a number of very good uses:

1)   **A learning tool**.   You can try out different bets or schemes and see what affects certain rolls have on them.

2)   **A way to input real dice rolls into the game**.   If you have a pair of real dice handy, you can roll them and enter your results into the game.   You can even record them with the <u>Dice Roll Recorder</u> and play them back again later.

3)   **A quick way to test your <u>Auto-Bets</u>**.   After you've programmed your bets, you can roll the right numbers and see if what happens - is what you intended.

4)   **A feel good, stress-reliever**.   Had a bad day?   Put a few <u>Checks</u> on the <u>Hard 8</u> and roll yourself a pair of 4's!

The **Roll Your Own Numbers** pad appears in the upper right-hand corner of the game table.   If you wish, you may still <u>Roll the Dice</u> in the normal fashion even though the **Roll Your Own Numbers** pad is visible.

Display Hop Bets

You can display the Whirl, Over 7, Under 7, and Hop bets by selecting **Display Hop Bets** from the Action menu or by clicking on the small tongue sticking out of the bottom of the Prop bet box.

Status-bar

The bottom <u>Rail</u> is used as the Status-bar.   It displays the following information:

- **Bankroll**:   The total amount of money at your disposal including bets on the table and cash in hand. Bankroll adjustments can be made through the ATM on the <u>Configuration</u> screen or through <u>Auto-Betting</u>.
- **Won / Lost**:   The total amount of money you have won or lost.
- **Individual bets**:   When the mouse-pointer is over a bet, the amount of money on that bet is displayed as well as its <u>Working</u> status.   For <u>Lay</u> and <u>Buy</u> bets, the appropriate <u>Vig</u> amount is shown as well. When you have the <u>Key-in Bet Amounts</u> feature in use, the betting-window determines which bet is displayed rather than the mouse-pointer.
- **Total bets / Available**:   The total amount of money on all table bets, including any <u>Vigs</u> that have been collected up-front.   If your bankroll is restricted (see <u>Configuration</u>) then the amount available for betting also appears and represents your bankroll minus your total bets.

Summary

The Summary screen, which is accessed from the <u>Statistics</u> menu, shows general results since the beginning of the game.

There are two percentage figures given: one for the net number of bets won/lost and one for the net dollar amount of bets won/lost.   The dollar amount figure tells the real story.   It represents your net win or loss against the <u>House</u>, and you can compare it with figures from the <u>Table of Odds and House Advantages</u>. For instance, start a <u>New</u> game and make a $6 <u>Place</u> bet on the 8.   Then using the <u>Roll Your Own Numbers</u> pad, make the Place 8 bet win five times and lose six times (obviously you'll have to replace the $6 each time it loses).   What you will have done is rolled the <u>True Odds</u> of the 8 versus the 7 of **6 to 5**. Now look at the Summary screen and you'll see that the dollar amount percentage shows a net loss of 1.52% (which matches the Table of Odds for the Place 8 - magic!)

A small box is present where you can enter a **Rolls Per Hour** value.   This value is used to give you an estimate of the number of **simulated hours** you've been playing as well as to calculate statistics for numbers and dollar amounts of bets per hour.   Any value entered here will also appear on the <u>Bankroll / Hyper-Drive</u> and <u>Bet Results</u> screens.   The actual number of rolls per hour at every table varies as determined by the speed and proficiency of the <u>Dealers</u> as well as the number of bets being placed and whether the <u>Shooter</u> holds a religious ceremony before each throw.

Summary figures can be reset by starting a <u>New</u> game.

Bankroll / Hyper-Drive

The Bankroll / Hyper-Drive screen, which can be accessed from the Statistics menu, shows a graph of your Bankroll to help you visualize the relative success of your betting.   Each time the Dice roll a new point is plotted on the graph.   525 such points will fit on a full graph, after which it is cleared and plotting continues.

An **Auto-Adjust Graph** feature, available from the Options menu, will automatically adjust the Bankroll scale up, down, or increase it's spread in order to keep all the plotted points in view.   You can manually adjust the graph at any time by clicking on any of the 4 black triangles.   The 2 triangles in the upper left of the screen are used to increase and decrease the spread of the graph, and the 2 triangles just to the left of the graph are used to shift the graph up and down.   If the Auto-Adjust feature is on then you'll only be able to manually adjust the graph so far.   But if it's off then you can adjust the graph however you like. There are two types of automatic adjustments available: **Expanding scale** means that the scale will expand as necessary but will not automatically contract when each new plot is begun.   This has the effect of letting the largest swings in Bankroll determine the scale size.   **Snap-back scale** means that the scale will expand as necessary during each plot but will snap back to a predetermined size at the beginning of each new plot.   This allows you to keep your graphs more optimally sized.   The snap back size is determined by either the beginning scale or by what you select through manual adjustments.   If you're attempting to set a new snap-back scale in the middle of a plot, then depending on the degree of change desired, it may be necessary to turn the automatic adjustment off, then set your desired scale with the black triangles, then turn automatic adjustment back on.

At present, only the current graph plot is saved.   Therefore, if you'd like to save the results of previous graphs, you need to print them manually before they're cleared, or activate the **Auto-Print** feature to do it for you.   Normally, three graphs are printed per page for a total of 1575 rolls.

Your current Bankroll is plotted together with your total investment in the game (which is your beginning Bankroll plus or minus any ATM withdrawals or deposits you make during play.   However, you can change the plot to display a moving average instead by selecting **Display Moving Average** from the Options menu.   The moving average can be set up to 525 rolls or (by entering zero) to a cumulative average of all rolls since the beginning of the game.   For instance, if you had the moving average set to 100 rolls, then each time the dice were rolled, a new Bankroll average would be computed using your ending Bankroll over the last 100 rolls.

Two moveable **Reference Lines** are available from the Options menu.   They allow you to pick points on the graph and read the corresponding roll numbers and Bankroll amounts in boxes at the side and bottom of the graph.   The color of the lines match the color of the text in the boxes to make it easier to see which is which.   Since each reference line can be moved to any point on the graph, the values that appear in the boxes are not necessarily in any order.   Their positions next to the graph are significant only insofar as the roll numbers are on the roll scale and the Bankroll amounts are on the Bankroll scale.   If a reference line is not over a graphed point it will display the roll number only and not a Bankroll amount.   If both reference lines are over graphed points the difference between the referenced roll numbers and Bankroll amounts can be read in the lower left hand corner of the screen.   To position the lines, move the mouse-pointer anywhere over the graph area and click the left button for one line and the right button for the other.   You can also drag the lines back and forth by clicking and holding the mouse buttons.   Fine tuning can be accomplished with the scroll bars at the bottom of the screen or by using the arrow keys. The reference lines can also measure either the invested Bankroll or the moving average by holding down the **Ctrl** key during positioning.   Also, holding down the **Shift** key while positioning either reference line will cause both reference lines to join together with one measuring the current Bankroll and the other measuring either the invested Bankroll or the moving average.

The Options menu also has an item titled **Show Auto-Bet Messages** which allows you to quickly turn on or off the display of any of your Auto-Bet Messages during play.   This option can also be set from the Show Logged Messages During Play menu item on the Auto-Bet screen or from the **Auto-Bet Messages** check box on the Notices section of the Configuration screen.

When manually increasing or decreasing the Bankroll scale, the new scale is centered on the current Bankroll amount.   However, if one reference line is over a graphed point, then the scale is centered on the referenced Bankroll amount.   If both reference lines are over graphed points then the scale is centered around the average of both of them.

A small box is present where you can enter a **Rolls Per Hour** value.   This value is used to give you an estimate of the number of **simulated hours** you've been playing as well as to calculate statistics for numbers and dollar amounts of bets per hour.   Any value entered here will also appear on the Summary and Bet Results screens.   The actual number of rolls per hour at every table varies as determined by the speed and proficiency of the Dealers as well as the number of bets being placed and whether the Shooter holds a religious ceremony before each throw.

It's from this screen that you can activate the Hyper-Drive feature.

Roll Totals

The Roll Totals screen, which can be accessed from the <u>Statistics</u> menu, contains two graphs.   One in blue (red for the number 7) depicts the **actual data** for each number rolled as a percentage of total rolls. The other one in gray depicts the <u>Probable</u> data for each number to use as a comparison.   For instance, the probability of rolling the number 2 is approximately 2.78%, so if the actual % at some point is higher, then you know that a greater than average number of 2's have been rolled.

Notice how the actual percentages come closer and closer to matching the probable percentages as the number of rolls increase.   While no set of rolls can be expected to exactly match the probable values, a graph that generally conforms to the same shape is your assurance that their distribution is realistic. When you <u>Roll the Dice</u> the game makes <u>no</u> attempt to balance the graph in any way.   For instance, if a greater than average number of 2's have been rolled, no effort is made to compensate by rolling fewer 2's.   The numbers are chosen **randomly** in such a way that each has number has the correct <u>Probable</u> chance of appearing.   The fact that the graph balances itself out over time is simply the nature of probability.   It's entirely possible to have a skewed graph and while playing to observe **streaks** of numbers as well as streaks of missing numbers.   Actually that's when craps really gets fun!   A long streak of numbers devoid of 7's would be viewed as a <u>Hot roll</u> and players betting <u>With the Dice</u> would be jumping with excitement!

There are also two columns of data: one containing the actual number of rolls for each number, and the other containing the number of rolls since each number was last rolled.

As an example: If 3 Sevens were rolled and then 9 other numbers (for a total of 12 rolls)   the graph would indicate in red that the number Seven was rolled 25% of the total and in gray that the probable was 16.67% (thereby indicating that a higher than normal percentage of Sevens had been rolled).   The first column would show 3 Sevens and the second column would show 9 numbers had been rolled since the last Seven.

These figures can be reset by starting a <u>New</u> game.

Roll Frequencies

The Roll Frequency screen, which can be accessed from the <u>Statistics</u> menu, shows how often each number or group of numbers has rolled since the beginning of the game.   For instance, let's say that after <u>Rolling the Dice</u> a while you looked at the roll frequencies for the number 7 and saw:

1	**20**
2	**14**
3	**22**
4	**10**
5	**8**
-	**-**
-	**-**
-	**-**
35	**1**

This would mean that 20 times, a 7 appeared on the first roll of the dice (since the previous 7), 14 times a 7 appeared on the second roll, 22 times on the third, etc., and 1 time it took 35 rolls for the 7 to show up - now that's a <u>Hot roll</u>!

These figures are reset when you start a <u>New</u> game.

Bet Results

The Bet Results screen, which can be accessed from the <u>Statistics</u> menu, shows a variety of data for wagers made during game play.

To select a bet for display, simply find it in the list at the left side of the screen and click on it.   To select more than one bet at a time use a **Ctrl-Click** (hold down the Ctrl key while clicking on the bet with the mouse-pointer).   To select an entire block of bets, first click on one end of the block, then **Shift-Click** on the other end, or simply click and hold the left mouse button, then drag the mouse-pointer up or down the list.

For instance, if you want to know how the <u>Place 10</u> bet has been doing, just select Place 10 from the list. If you want to know how <u>all</u> the Place bets have been doing as a group, select all 6 Place bets at once.

There are two different kinds of data that can be displayed:

1)   Display results of actual decided wagers: Only those wagers <u>you</u> actually made that resulted in wins or losses are included in the data.   Any wagers made and subsequently removed before reaching <u>Decisions</u>, are not factored in.

2)   Display results of continuous phantom $1 wagers: Imaginary $1 wagers are made and decided on each and every bet whenever possible according to the rules of the game and any applicable settings you have selected.   The results are a gauge of how each bet has been performing and allow you to compare the total #'s and %'s of bets that you <u>could</u> have made versus those that you actual did make. For example, let's say that the <u>Shooter</u> rolls a 7 on the <u>Come-out Roll</u> but you didn't have a <u>Pass Line</u> wager on the table.   The phantom stats will record a win but your actual stats will not.   In another example, let's say you have a <u>Place 4</u> bet that you've <u>Called OFF</u> and the Shooter rolls what would normally have been a winning 4.   Neither the actual nor the phantom stats will record a win since the bet was Called OFF.   Note that phantom <u>Odds</u> bets are also $1 and therefore equivalent to <u>Single Odds</u>.

The figures in the row titled **Last $** refer to the last occurrence of those events, which may or may not have been on the last (most recent) roll.   To see the results of the last roll, look at the two rows titled **Last rolled #** and **Last rolled $**.

The **Net** figures are the result of combining wins and losses.   The **Net $** amount is the true measure of success or failure and can be compared with the <u>House Advantage</u> (See also <u>Summary</u>.)   There are two columns shown under **Net**.   The left column simply displays the net win or loss for each row, and the right column displays the net win or loss as a percentage of the amount wagered.   (Note: The net values for the **High**, **Low**, **Average**, and **Last** rows might not be particularly useful but are provided nonetheless.)

Figures that include fractional amounts are shown to an accuracy of 3 decimal places.   Fractions smaller than that are not shown but are indicated by decimal points without any numbers following them.

Be aware that the results for <u>Come</u> and <u>Don't Come</u> bets cannot be viewed in the same manner as the <u>Pass Line</u> and <u>Don't Pass</u> bets.   This is because Come and Don't Come bets get moved when their points are established.   So to view the complete set of results for Come bets you need to select **Come 4** through **Come 10** as well as **Come** from the list (a total of 7 selections).   For the Don't Come you need to select **Don't Come 4** through **Don't Come 10** as well as **Don't Come**.

A small box is present where you can enter a **Rolls Per Hour** value.   This value is used to give you an estimate of the number of **simulated hours** you've been playing as well as to calculate statistics for numbers and dollar amounts of bets per hour.   Any value entered here will also appear on the <u>Bankroll / Hyper-Drive</u> and <u>Summary</u> screens.   The actual number of rolls per hour at every table varies as determined by the speed and proficiency of the <u>Dealers</u> as well as the number of bets being placed and whether the <u>Shooter</u> holds a religious ceremony before each throw.

Bet Trends

The Bet Trends screen, which can be accessed from the <u>Statistics</u> menu, shows the short-term winning or losing trends for bets you actually made.   The primary purpose is to assist <u>Auto-Betting</u> in determining when your bets have Won/Lost and how many times they've Won/Lost   in a row.   The figures do <u>not</u> represent cumulative totals.   Take a look at the following example using just the <u>Pass Line</u> bet:

Bet	Event	Bets Won / Lost shows
$5	Pass Line wins	1
$5	Pass Line wins	2
$0	Pass Line loses	2
$0	Pass Line wins	2
$5	Pass Line loses	-1
$5	Pass Line loses	-2
$5	Pass Line wins	1

Notice that in the third and fourth steps where no bet was made, the counter did not change.   It only changes when you actually win or lose money.   Also notice how the counter resets itself when the trend goes from winning to losing or vice versa, and that losing figures are shown as negatives.

You can reset these figures by <u>Logging</u> Auto-Bet reset <u>Actions</u> or by starting a <u>New</u> game.

Chip-Stack Values

The Chip-Stack Values screen, which can be accessed from the <u>Statistics</u> menu, displays the current values of all 100 <u>Chip-Stacks</u>.   You have a choice of displaying all 100 values at once or in a scrollable list together with any names you've given them through Auto-Betting.   An **Options** menu allows you to display **Grid Lines** and/or **Zero Values** as well as to select which four of the Chip-Stacks to display on the side <u>Rail</u> of the main game table.

Chip-Stack values and names are reset through <u>Auto-Betting</u> or when you start a <u>New</u> game.

Flag Values

The Flag Values screen, which can be accessed from the <u>Statistics</u> menu, allows you to monitor and set the true/false value of any <u>Flags</u> that are in use.

Flags are typically invoked and set with your <u>Auto-Betting</u> script.   However, you can invoke and set them with <u>Hot-Keys</u> as well.   In either case, changing their true/false value on the Flag Values screen could be used as a debugging tool or a natural part of your play.   It's up to you.

Hot-Keys

The Hot-Keys screen, which can be accessed from the <u>Game</u> menu, allows you to assign <u>Auto-Bet</u> files to any of 36 different key combinations.   Pressing a Hot-Key during game play will cause the assigned Auto-Bet file to load and run through one cycle.   The file is then abandoned and game play is allowed to continue.   For instance, let's say you created a short 2-line Auto-Bet file called INSIDE.BET that added $5 to all the inside <u>Place</u> bets as follows:

Do this ...
        Add $5 on All Inside Place bets

And on the Hot-key screen let's say you assigned INSIDE.BET to **Ctrl A**.   Then during game play each time you pressed Ctrl A, $5 would be added to each of the Place 5, 6, 8, and 9 bets.   Press Ctrl A twice in a row and $10 would be added to each of the bets.   You could also make another file that subtracted $5 from each of the inside bets and assign it to Ctrl S.   Then using these two Hot-Keys you could easily play a game of increasing and decreasing inside Place bets without having to manually place <u>Checks</u> on each of the individual bets every time.

By using <u>Auto-Bet</u> files to create Hot-Keys you can make your Hot-Keys do just about anything you want. You can have Hot-Keys that make various combinations of bets, call certain bets on or off, take or lay odds, gather statistics, remove bets, play sound, etc.   You can even have Hot-Keys that interact with an active Auto-Bet file that's loaded on the Auto-Bet screen.   They can use all, some, or none of the same <u>Bets</u>, <u>Chip-Stacks</u>, and <u>Flags</u> that active Auto-Bet files use.   Note that a Hot-Key that uses different <u>Labels</u> and/or Flags will add the referenced Labels and/or Flags to the appropriate lists on the Auto-Bet screen together with any others already in use by the active Auto-Bet file.   This doesn't affect the active Auto-Bet file in any way.   However, the lists will be purged if you load a new Auto-Bet file.

There are three fields to enter when creating Hot-Keys: the Hot-Key combination, the Auto-Bet filename, and a short description.   First choose which Hot-Key you'd like to define and then enter the path and filename of the Auto-Bet file you'd like to assign to it.   You can type it in directly or click on the **Select Auto-Bet File** button and a dialog box will appear from which you can select a file (you can also raise the dialog box by double-clicking the filename field.)   The description field is an optional entry that allows you to write a short reminder of what the key is supposed to do.   When ready, click on the **Add** button and the new line will turn red indicating that it's ready to be placed in the active Hot-Key list.   Just click on the spot in the list where you'd like the new entry to appear (if using the keyboard, press the up or down arrow until the <u>focus</u> is on the spot you want and press the spacebar or return key.)   Hot-Keys can appear in any order and can be moved about by cutting and pasting or by clicking and dragging them. Double-clicking on an active Hot-Key will copy it into the assembly boxes at the bottom of the screen where you can modify and then re-add it.   Note that it's possible to have the same Hot-Key appear more than once in the list.   The first one listed is the one that will be used when the key is invoked.   However having more than one allows you to quickly swap key assignments if you want different Auto-Bets assigned to the same Hot-Key at different times.   For instance, let's say that you had two different Auto-Bet files that handled <u>Odds</u> bets and you assigned them both to Ctrl O.   Whenever you wanted to switch the one being used, you could go to the Hot-Key screen and switch their order in the list with a quick drag/drop (or cut/paste) operation.

Since Hot-Keys invoke their Auto-Bet files for only one cycle, there are a couple of differences you should be aware of:

1)   When a Hot-Key encounters the Initializing Auto-Bet <u>Condition</u>, it always treats it as true.   In other words, since the Hot-Key is a one-cycle process, the assigned Auto-Bet file is always initialized with each invocation.

2)   When the Hot-Key encounters an On each roll Condition, it treats it as false.   This is because Hot-Keys are not event-driven like normally run Auto-Bets, they're invoked manually by you.

You can press one or more Hot-Keys as many times as you like.

Configuration

The Configuration screen, which can be accessed from the <u>Game</u> menu, is where you customize your <u>Table Layout</u>.

Checks / Dice Tab

You can select different <u>Checks</u> and <u>Dice</u> to play with.   The checks and dice that are already on the table will be replaced with your new selections.

Dice action:

- **Stationary:**   the dice will roll and remain in the lower right hand corner of the table.
- **Return after thrown:**   The dice will roll on the open table and then immediately return to the lower right corner.
- **Return on decision:**   The dice will roll and remain on the open table unless a decision is reached on any wager, in which case they will immediately return to the lower right corner.
- **Remain on table:**   The dice will roll and remain out on the open table.

In all cases, if any betting activity takes place, the dice will return to the lower right hand corner of the table.

Sound Tab

You can select different sounds for the <u>Stickperson</u>, <u>Dice</u>, <u>Checks</u>, and the times that you <u>Win</u>.   Each category has an option titled "none" which allows you to turn that category off.   Or you can check **Disable all game sounds** to turn everything off.   The check box labeled **Disable Auto-Bet sounds** allows you to disable any sounds called for in an <u>Auto-Bet</u> file.   You can test each sound you select by clicking on the command button next to the selected sound.   You can also enter your own sounds in the game.   See <u>Sound</u>.

Bets Tab

<u>Table Limits</u>:   You can set the maximum and minimum betting amounts from 1 to 9,999,999!   During play, amounts greater than $3000 will be displayed with a special $ chip, with the exact amount displayed on the <u>Status-bar</u>.

<u>Odds Allowed</u>:   You can set Odds Allowed Factors for the 4/10, 5/9, and 6/8 to any amount from 0 to 999! Fractional amounts are also allowed, e.g. many casinos allow 2.5X odds on the 6 and 8.

Odds Calculation Method: You can select different methods to calculate how large odds bets are allowed to be.   Depending on the Odds Allowed Factors you've selected and the size of the wagers you're making, you may or may not notice a difference in the calculation methods.   For more information see <u>Odds Allowed</u>.

- **Auto-Select**:   Selects one of the following methods based on the Odds Allowed Factors entered.
- **X Flat w/ Minor Push**:   Multiply the <u>Flat</u> bet by the Odds Allowed Factor, then allow a push to the nearest amount that squares with the odds.
- **X Flat w/ Color Push**:   Multiply the Flat bet by the Odds Allowed Factor, then allow a push to the nearest amount that squares with the odds and considers the denomination of the <u>Checks</u> used to make the wager.
- **X Flat - Single Odds**:   Multiply the Flat bet by the Odds Allowed Factor, then allow an amount equal to the Single Odds amount for that figure.
- **Flat - Single Odds X**:   Figure the amount of Single Odds allowed for the Flat bet amount, then multiply the result by the Odds Allowed Factor.

Vigorish: You can choose whether to charge Vigs for <u>Buy</u> and/or <u>Lay</u> bets on all wagers or just winning wagers.   You can also choose what percentage to charge and how to round fractional amounts.   Remember that the Vig for Buy bets is figured on the amount bet, whereas the Vig for Lay bets is figured on the potential payoff.

You can also choose between four different payoffs for the <u>Field</u> bet, and between Bar 2 and Bar 12 for the <u>Don't Pass</u> and <u>Don't Come</u> bets.

<u>Put</u> Bets Allowed: Not all casinos allow Put bets, so you can allow or disallow them here.

Bankroll Tab

You can adjust your <u>Bankroll</u> at any time throughout the game.   Withdrawals and deposits are made through an ATM which adds to or subtracts from your total amount invested in the game.   ATM transactions can also be made through <u>Auto-Betting</u>.

Allow negative bankroll amounts:

■ **Unchecked**:   This is a <u>normal</u> Bankroll.   You can only make wagers with the funds you have available. Once you've exhausted your funds, you must either make another ATM withdrawal or start a <u>New</u> game.
■ **Checked**:   This is an <u>unlimited</u> Bankroll.   It can be positive or negative and does not limit how much you can wager.

Options **For every new game:**

■ **Start bankroll with**:   Each <u>New</u> game will start with the amount of <u>Bankroll</u> specified.
■ **Prompt for starting bankroll**:   Each new game will start with a box prompt where you can enter your beginning Bankroll.
■ **Carry forward bankroll from previous game**:   Each new game will start with the amount of Bankroll remaining from the previous game.
■ **Carry forward bankroll and net from previous game**:   Each new game will start with the amount of Bankroll remaining from the previous game.   Additionally, the amount won or lost will be carried forward. Basically this means that the amount invested will be carried forward as well.

You can set the ATM to withdraw or deposit any amount you wish by clicking on the green numbers and entering a value.

Comps Tab

A **comp** is a <u>comp</u>limentary service, discount, or thing offered by the casino as an inducement to gamble in their establishment.   The <u>House</u> fully expects to profit from your gambling ventures and is usually willing to offer some gratuities to get and/or keep your business.   Comps come in all shapes and sizes. At the most basic level they might include things like free drinks just for playing.   More meaningful comps like meals, rooms, shows, airfare, etc. are a function of many (often subjective) things.   However, at the core the House is looking for <u>action</u>, and this basically means time and money.   The longer you gamble and the more money you spend, the more substantial you can expect your comps to be.

The process of determining what if any comps you might receive is called being **rated**.   Many things can go into your rating such as how much you buy in for, how long you play, how much you bet, what bets you make, speed of the game, etc.   However, since keeping an exact record of each and every variable for each and every player being rated would be impractical if not impossible, most of these criteria are aimed at estimating or averaging how much action you've given the House.   The requirements for various comps can vary greatly from casino to casino.   What might get you a room in one establishment might only get you a meal in another.   Of course if it's a marginal room versus a knock-out meal, the latter may in fact be of greater value to you.   It stands to reason that it takes more to qualify for comps in more lavish establishments.

Typically, short periods of play at minimum levels will not get you anything other than a free drink to keep you at the table.   Many places use a standard of four hours of play and then use various average bet levels to qualify for comps.   For instance, a $25 average bet for four hours might get you a free meal - $50 might get you a room.   Shorter periods of time can still qualify depending on the amount bet.   e.g. $100 average bet over 2 hours would probably qualify at the same level as $50 average bet over 4 hrs.   You can pretty much count on the fact that the casino is going to take care of their high rollers.   If you're giving them a substantial amount of action, chances are they'll offer you something or ask if you'd like to be rated.   At lower levels however, you may in fact qualify for a comp but might have to ask to get it.

Generally comps are given independent of whether you win or lose.   The casino's main objective is to see that you come back again and gamble some more - that's how they make their living.

In Animated Craps, simulated comps are <u>not</u> measured in terms of meals, rooms, etc.   The value of these things depend entirely upon the casino in which you're playing.   Rather, a **total comp value** is calculated and given in dollars which you can then equate to real-world comps.   For instance, a $30 comp value might equate to a meal, $80 - a room, and $500 - airfare, etc.

Animated Craps offers three methods for figuring comps.   Each of these methods begins by adding up the total value of all decided wagers on those bets that you have selected on the Configuration screen.   This is called the **total comp action**.   Some casinos count <u>Odds</u> bets - some don't.   Some count <u>Prop</u> bets - some don't.   It's a simple matter to select which bets you want to include in the total comp action by choosing either "yes" or "no".

▪ **Based on theoretical vig:**   This method calculates the amount of <u>vig</u> that the <u>House</u> should earn on the total comp action by virtue of the calculated <u>House Advantage</u>.   For instance, if you had $200 in action on the <u>Pass Line</u>, the House would on average earn 1.41% of $200 which equals $2.82.   Whether you actually did or didn't lose that amount is immaterial.
▪ **Based on total comp action:**   This method simply uses the totaled comp action without any modifications.
▪ **Based on average action and time:**   This method divides the total comp action by the total number of comp action bets to derive an average action figure.   Average action is then multiplied with the simulated elapsed time.

Using the theoretical vig method, it doesn't matter whether you've selected <u>Odds</u> bets or not because the <u>House Advantage</u> on odds bets is 0%.   This means that the theoretical vig on odds bets is $0 and therefore they make no contribution to the House's expected earnings.   However, with the other two methods the odds bets (if selected) do matter.

The final step in computing the **total comp value** is to multiply the total produced from the method selected above with the **comp rate**.   The comp rate may or may not correspond to any known comp rates in use at any casinos due to differences in methodology.   However, you should be able to choose a method and adjust the comp rate to give a reasonable approximation of the comps you might receive.   For instance, using the total comp action method let's say your casino figures on average to keep 5% of your money but is willing to give 1% back to you in comps.   Just enter 1% for the comp rate.   In essence you're telling it what percentage of your selected wagers to give back in comps.   Using the theoretical vig method you might find comp rate values anywhere from 20% to 200% to be useful depending on the generosity and methodology used by the casino.   (In this case, a value greater than 100% would mean that the casino would in fact be comping you for more than they could expect to make strictly according to the <u>House Advantage</u> of the selected bets.   For various reasons this may be valid.)   The total comp value also appears on the <u>Summary</u> screen.

Misc. Tab

<u>Notices</u>

Color printer: unchecking this box allows you to print in black and white only.

Snap mouse-pointer: checking this box causes the mouse-pointer to jump to the default command button whenever certain screens or boxes are displayed.   (Note: your current mouse software may already have a similar option.)

Configuration Files: See Game Files.

RNG (Random Number Generator)

The **Random Number Generator** is an algorithm used to produce random dice rolls.   There are 5 different RNG's to choose from.   Each requires an initializing **seed** in order to create a unique random sequence.   When you start Animated Craps all 5 RNG's are automatically seeded using your system's date and time.   During play there are two different ways to re-seed the currently selected RNG:

1)   Press the **Seed RNG now** command button on the Configuration screen.
2)   Check the box marked **Re-seed games** on the Configuration screen.   Then each time you select New from the Game menu the RNG will be re-seeded.

There are also two different kind of seeds you can use:

1)   **Seed normally** - Animated Craps uses your system's date and time to produce a seed value.
2)   **User seed** - a box will appear where you can supply your own seed value.

Here are some of the differences in the 5 RNG's:

RNG #1 - Accepts seed values from -9,999,999 to 9,999,999 including fractions.   Using the same seed value will always produce the same random sequence.   Sequence is interrupted if you exit Animated Craps.

RNG #2 - Accepts seed values from -9,999,999 to 9,999,999 including fractions.   Using the same seed value does NOT produce the same random sequence.   Sequence is interrupted if you exit Animated Craps.

RNG #3 - Accepts seed values from -999,999 to 999,999 in whole numbers only.   Using the same seed value will always produce the same random sequence.   Sequence is NOT interrupted if you exit Animated Craps.

RNG #4 and RNG #5 - Accepts seed values from -9,999,999 to 9,999,999 in whole numbers only.   Using the same seed value will always produce the same random sequence.   Sequence is interrupted if you exit Animated Craps.

If your system clock is operating properly a **normal seed** should produce a different random sequence each and every time you play.   However, if you suspect problems you can choose a different RNG and/or choose your own seed value.   Choosing your own seed for RNG's #1, #3, #4, and #5 has the added benefit of being able to reproduce the same random sequence by entering the same seed again.   This is useful for running multiple trials using the same roll sequences without having to record and replay a Dice Roll File.   RNG #3 also has the benefit of being able to save the current state of the random sequence whenever you Save a game file and pick it up again when you resume the saved game, however RNG #3 may not be as accurate as the other RNG's when running extended simulations in excess of approximately 100,000 rolls.

Notices

Animated Craps will notify you when certain actions are being taken or denied.   For instance, charges imposed by the House on certain bets, or Maximum or Minimum Bet Limits reached.   You can turn these Notices on or off with the check-boxes found on the Configuration screen.   If you're a novice, you may want to leave them on until you understand the game a little better.   If you're more advanced, you may want to turn them off so they're not a nuisance.

You may want to turn Notices off while running Auto-Bets for two reasons.   First, your Auto-Bets will run quicker since you won't have to continually acknowledge any Notices, and second, you may already know that some of your bets will generate Notices, so being reminded is just a bother.   However, for any Notice that appears as a result of an Auto-Bet you can click on the small dice picture in the Notice box to see which line number generated the message.

The check-box marked **Auto-Bet Messages** refers specifically to the display of any messages that are present in your Auto-Bet files. This option can also be set from the Show Logged Messages During Play menu item on the Auto-Bet screen or from the **Show Auto-Bet Messages** menu item on the Bankroll / Hyper-Drive screen.

If Hyper-Drive is active, all Notices except for **Auto-Bet Messages** are ignored regardless of their settings.

Sound

You may activate or deactivate any or all game sounds and adjust the volume from the Configuration screen.   The sound quality is best   with a sound board, but the PC speaker will work fine if you have a PC Speaker Driver installed.

If you like, you can add and use your own sounds in the game! Animated Craps uses standard wave files, just with different filename extensions to categorize them.   Here's what you need to do:

■ Stickperson   If you have a microphone setup on your computer or have a friend who does, just run the Windows™ sound recorder or any other sound wave recording program and create the following sound files:

PERSON01.STK - "Please keep your hands off the House money"
PERSON02.STK thru **PERSON12.STK** - Actual number, e.g. "Seven" for **PERSON07.STK**
PERSON13.STK - "Pay the Line, Take the Don't"
PERSON14.STK - "Pay the Don't, Take the Line"
PERSON15.STK - "Push the Don't, Take the Line"
PERSON16.STK - "Hard"
PERSON17.STK - "Come-Out roll"

Note: In place of PERSON, enter whatever name you'd like, e.g. GEORGE14.STK .   The name can be from 1 to 6 characters long, and you must include 2 digits after it (e.g. GEORGE01.STK not GEORGE1.STK).

■ Dice sounds use any wave file (just change the extension to .DCE) and should be approximately 1/2 second in duration to synchronize with the dice rolling.

■ Chip sounds use any wave file (just change the extension to .CHP) and should be as short in duration as possible so as to synchronize with the placing of chips.

■ Win sounds use any wave file (just change the extension to .WIN) and may be of any duration.   They play when you win a bet.

All sound files should be placed in the same directory as ANICRAPS.EXE.

Note: Sounds can also be played through Auto-Betting.

Speaker Driver

If you have neither a sound board nor a PC speaker driver, you can enable the game sounds by installing the Microsoft® speaker driver included with this program.   This driver is included simply for your convenience and there is no charge for its inclusion.   You could obtain this same driver freely from Microsoft's Driver Libraries or through services like CompuServe.   Cloud City Software® assumes no liability for its performance.

The driver comes with 5 files:

> AUDIO.TXT
> LICENSE.TXT
> OEMSETUP.INF
> SPEAKER.DRV
> SPEAKER.TXT

You should read the text (.TXT) files for information on the driver and instructions for installation.   The driver works with your whole Windows™ system and not just Animated Craps!   These 5 files are packed together in one self-extracting file called SPEAK.EXE.

Caution: With a sound board installed, you don't need the PC speaker driver.   Activating it may cause distorted sound.

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