

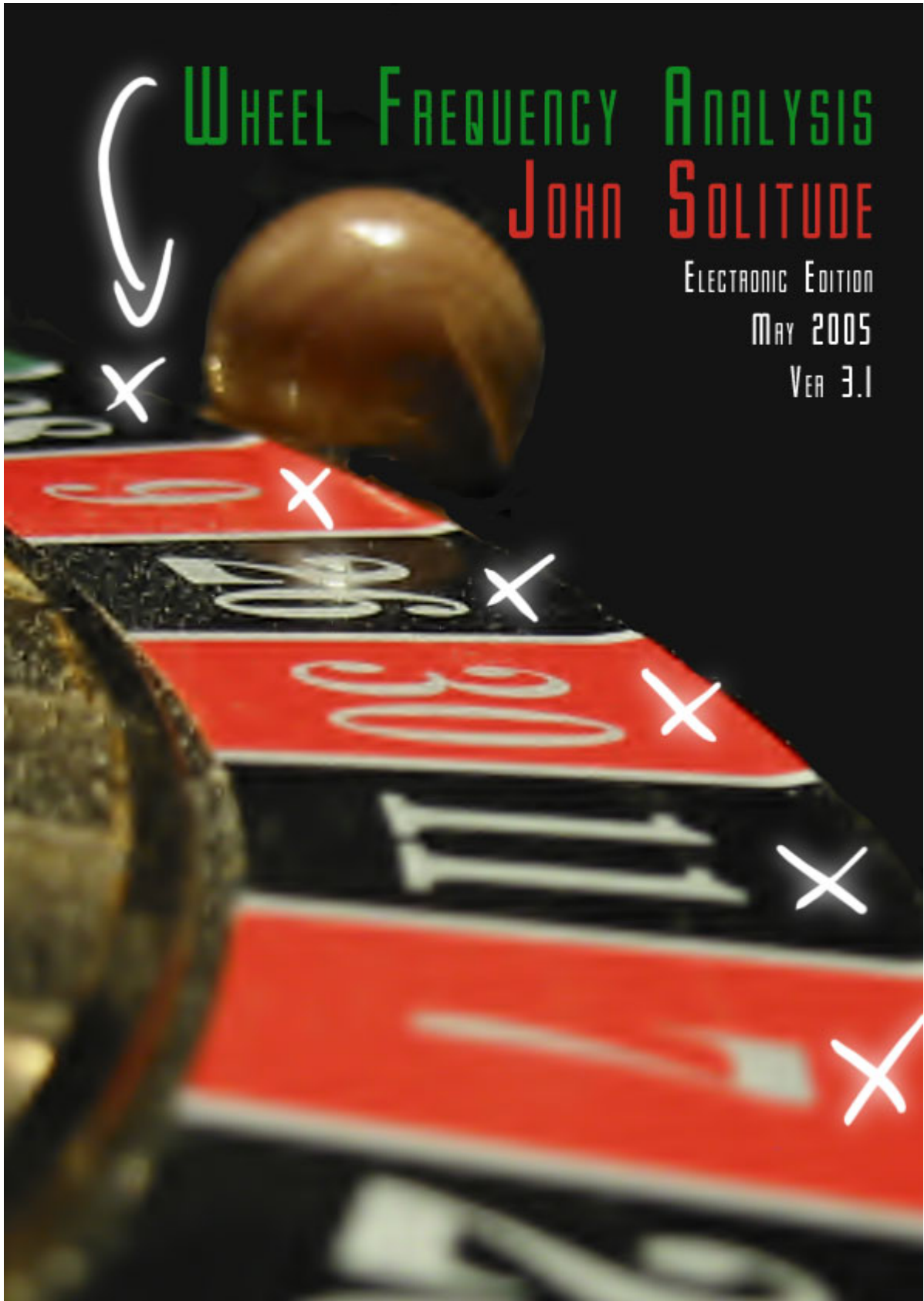
WHEEL FREQUENCY ANALYSIS

JOHN SOLITUDE

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INTRODUCTION AND THANKS TO

'Le hasard ne favorise que les esprits préparés'
'Coincidence only favors the prepared mind'

Louis Pasteur 1822-1895

Who is John Solitude? John is a very common name in the English language. The most well known is John Doe, a name which is used to describe an anonymous figure or a defendant. Each language has its own version of the expression 'John Doe'. In Belgium, the expression is Jan Janssens, in France he is called Jean Dupont, in Germany it's Max Mustermann, in Japan they address him as 名無しの権兵衛 (Nanashi no Gonbei). Every language has its own John Doe. So John Doe is a universal character.

Solitude is used to describe the existential loneliness of the John Doe character. Playing roulette is essentially a loner's game: although many times played in the company of others, there is no team play in roulette. The essence of the game is man versus machine.

Lots of John Doe's are to be found in casinos and gambling halls. The common man, mostly with a moderate income and a dissatisfying dead end job or no job, hoping that luck will come his way when he enters a casino. John Doe is looking for an escape for the greyness and spiritual emptiness of everyday life, the loss of dreams and partners experienced along the way. The casino offers John Doe exactly what he or she wants: escape from the grey existence. The far distant dream on each visit to the casino that he or she will make a fortune so he or she could financially free himself from the chains that make him or her dependant and elevate him or herself from his or her ordinary life.

John Doe looks with envy to the high rollers (gamblers who bet decadent amounts of money) and decides to take a shot at it by himself. John Doe loses more than he wins in the process but he or she will try again. He or she then wonders why the others seemed to always be more succesful than he or she does in gambling?

This is a completely free gift from one John Doe to another. You might as well be Jane Doe, it doesn't matter. This is an act of solidarity with all John Doe's, male or female. I have nothing to sell: I'm not a businessman, I'm not affiliated with casinos, nor stores, nor business enterprises, nor do I want to be or aspire to be.

Yes, it is really FREE, can you believe that in this day and age, no strings attached what so ever, no product to sell, no personal profit to gain, and as such I was able to write something that is honest and exposes the difference between fact and fiction.

This work is copyrighted, but this is just a measure to keep the integrity of this guide together, so no one, especially commercial system sellers, would use the content or parts from this guide for financial reproduction. The guide is as such a labour that has been done in the common interest of all John Doe's. This was and will remain the only aim. (Part from people thanking me and boosting my ego that is).

This time it is us, as human beings, as occasional or addicted gamblers, as John Doe's versus the casino.

This guide contains information for the novice as well as for the more experienced player. The only prior knowledge needed is knowing the basic rules and payouts of the game. This guide will teach you how to become a more successful player in roulette. It doesn't promise you unrealistic get rich overnight scenarios, but offers plain, straight forward, logical and human advice, which will make your roulette sessions more profitable. And you don't have to be a math genius to follow the calculations, everything will be explained so that even someone who only knows basic calculus can understand. When there are frightening terms like 'standard deviation', I'll try and explain in an easy way.

The casino and gambling are metaphors for taking it up against forces which are far more powerful than you. Deep down you know from the very moment you enter a casino the odds are against you, that the chance of success in the long run is far smaller than the chance of winning. As such the casino for John Doe is an example of his everyday life; he doesn't seem to succeed as a winner, and he longs so much for this. Becoming a winner is what westernised society is about, it is what we long for. To be special, it's everything else other than being John Doe. To feel that we were able to face a fierce enemy (in this case the casino) and conquer it. To defy the odds and get away with it.

This guide contains everything I know about gambling in general and especially roulette, which is still my favourite game. It took much study, practice and a change of playing attitude to become a successful player. An approach how this can be done, is explained in this full guide.

It's an all in one package: strategy always comes with money management and attitude. None of these can do without the other in the process of becoming a successful player. Therefore this guide deliberately contains no contents page so you could not quickly flick thru. It is essential you read this guide in chronological order, otherwise essential ingredients of the method will be missed. Print it out, distribute it for free, take your time, sit back and enter the world of the defendant John Doe.

This extensive work could not have been done without the direct or indirect aid of others. Some provided the exchange of ideas, others were helpful by giving feedback or asking questions which made me think or inspired me. There are too many people who in some way or another all contributed to the final development of this guide, and I apologise to all those who I may have left out unintentionally.

I would especially like to thank: Rudi (who joined me observing, tracking and playing thousands and thousands of spins), Master Yazdani (from the numerology, timing, luck and roulette Yahoo forum who revised this guide for English language errors –I'm not a numerologist myself, nor does my method use numerology, only probability theory, so all questions concerning numerology should be addressed to Master Yazdani), Turbogenius (moderator from the VIP-forum who supplied his community with countless ideas), Peter Webb (for his excellent site on probability theory), Kelly (excellent contributor to the VIP-forum and for supplying a tool concerning standard deviation), Teo Rulte (for his righteous fight against commercial system sellers), Muckanara Jayclub (for feedback), Daniel Swart (for his excellent site on the law of the third), Bokske (for pointing me out to an interesting math site), Damian (for pointing me out to an excellent online course on probability), JapJap (for his straight forward explication on standard deviation), Karl Walbert (for feedback), Gohan (for his kind words), Buffster (for his straight to the point one liners like 'it's crap, don't waste your money), Arno Schreuders (for feedback) ... and to the numerous contributors I can not all mention by name and all the John Doe's out there.

This one is for all John Doe's who are out there: we are numerous and it's time to use our common experience for our common advantage. This time it's us versus the casino.

John Solitude, 09-05-2005

Probably anyone reading this document, can mentally picture the atmosphere of a casino.

Everything in a casino, is deliberately designed to bring you the state of mind in which you will be prepared to risk a lot of money. Casino owners not only have the house edge (the odds of all the games they offer are in favour of the casino), they will also deliberately try to distract and seduce the player.

The psychological techniques used by the casino vary from very subtle to harsh.

First thing a successful player should always be aware of, is knowing how the casino techniques affect him on a personal basis, and how he will cope with them.

- Entering a casino, is entering an atmosphere which oozes luxury and wealth. The casino staff is nicely dressed up, the interior often looks expensive, the roulette wheel is made of high quality wood, the games look stylish or flashy, jackpots are blinking for attention. It's an **exciting atmosphere** in which money quickly changes hands. The casino wants you to be excited and entranced into this atmosphere: it's up to you to look thru this veil and remain very calm and cautious with every bet you take.
- The casino taps into **human desire**: wouldn't we all like to be financially safe and secure, escape from daily life in which often things don't look so spectacular and money isn't gained that quickly? The casino seems like offering you a fair chance to make money the easy way and become part of the elite high rollers who can spend enormous fortunes of their income to gambling. The casino likes to be portrayed as a possible **shortcut to a better life**, offering harmless entertainment. The real odds are if you frequently visit a casino and see gambling as entertainment, at the end of the year your bank account will decrease enormously.
- Without exception **the pace of all games are very high**. The casino deals in **quick satisfaction and escape**. The less time a player can think or wonder if one can afford the financial risk he's about to take, the better for the casino. Don't go into the flow: **keep thinking**.
- Unprepared players will often get **emotionally involved and aroused** by the game, forgetting along the way that those plastic chips or credits represent cash - your income. All of you probably had the experience that it's easy to win small or larger amounts of money each time you visit the casino, but it's much harder to hold on to that profit until you come out and not be tempted to keep increasing the bet in order to win even more or to gain back what you have lost along the way. Then the fatal streak shows: suddenly you have lost all your winnings and your starting bankroll. You feel frustrated: maybe you'll have another go, maybe it will all come back. Maybe you will even enlarge your starting bankroll... Finally, most of us come out, having spend more than they were willing to, feeling frustrated because we lost not only our winnings but more bankroll than we planned. My friends and I have been there, I know the feeling.
- Some casinos offer **(free) beverages** at the tables. **Alcohol** decreases the awareness of the player and the personal safeguards we all have. The safeguards that would tell us: maybe it's not wise to bet such large amounts of money. It may feel good to drink a beer or a cocktail while gambling to ease down the uncomfortable feeling when your streak doesn't show up, or to bet more than you would want to risk if you were sober. The fact is: the casino likes you to have a drink, that's why some even offer it for free (as long you are not a nuisance to other customers

or would disgrace the respectful image the casino business wants to radiate). After the casino has got the money of the intoxicated player (who now feels aggressive since he had lost a large amount of money), the casino will throw him out. Intoxicated gamblers spend and lose more money unlike the player who is sober and constantly aware of the risk.

- All casino games are designed as an almost **ritual event**. The ball spinning, the final call on the bets, the fluent movement of the dealer, the shuffling of cards, the stacking of chips ... Rituals bring to humans a sense of well being and security. The outcome of this ritual is however insecure, that's the part where the casino cashes in. Although rituals can be very healthy for human beings, the casino has used **the potency of rituals to bring you in a state of mind in which you will be entranced in playing long sessions**, will be less thinking about the risk your taking in each and every bet and finally will surrender to the casino by playing without self-control or rational thought.
- Winners are often held in the spotlight by the casino so each player will think: if he or she can do it, I can do it as well. **The casino advertises with big checks the largest wins**, never speaks out on those huge losses. The latter is kept in silence: this is by far the situation of the majority of gamblers. Winners (as long as they don't keep winning) are the best promotion a casino can get: it will tap into human desire to become a winner as well. One should always ask a winner how much he has lost in the process to get a clear picture of the financial gain or loss in the long run.
- There is one player the casino doesn't fancy: it's the player who is always fully aware of the techniques the casino uses to seduce the player into the game. It's the player who walks into the casino with caution: this player knows it is a real challenge to beat the casino and the odds are not in favour of the player. It's the player who quits (= hit and run) when he has reached his realistic win goal for the day, leaving the building as fast as possible so he would **keep the exposure to risk as minimal as possible**. It's the player who no longer sees the casino as an entertainment but as a struggle with mostly himself, not to be emotionally seduced by the game but to choose in taking a very well calculated risk in order to gain some financial profit. This player not only succeeded in winning money, he has also won his self control as well as an increased amount of self power. Just as David faces Goliath and chooses to take up the challenge. This player knows he has a chance of being successful by **setting limits**, but it takes a long road to get there. You will not get rich overnight, unless you were to hit the mega jackpot.
- Let's face reality once again: the casino is not there for your entertainment, the casino-owners want your cash, offering addictive games in which **the casino ALWAYS has the edge**.
- It is up to the player to be fully aware and to avoid of getting seduced and distracted by the psychological techniques the casino uses and in this guide we're going to have a look how this can be done.
- And there is **good news**: the well informed player who has gained self control, knows the odds of the games and how to reduce the risk as much as possible can become a regular winner. The professional player is not a fortune teller, nor is he extremely lucky: he is an expert in **risk analysis** and has obtained the **right balance between attitude, strategy and money management**. He knows fully that there is always risk at hand when he is playing but he chooses to do so the best way possible. When he loses he doesn't lose his shirt, he only lost a session but he won't walk out bankrupt. He will come back because in the end the net of his losses and wins will still come out to be positive.

- You should be that player: it took me two years to learn how to achieve this, one year I have brought it into practice with much success. **By playing less, you can gain more.**
- In **Chapter Two 'The attitude of the professional player'** I'll explain how attitude was part of beating 54 roulette sessions in a row without a single loss. And even when I would encounter a losing session in the future, it will be the casino's money that is lost: not my own anymore.

CHAPTER II: THE ATTITUDE OF THE PROFESSIONAL PLAYER

I can not stress enough **the importance of attitude in the process of becoming a successful player**. With 'successful' I mean that in the end the balance of your wins and losses will be in your favour. You will leave the casino with more than you came in on most occasions. **You will not get rich overnight**, but you could earn **extra income** by playing casino games, or if you choose to do so and have the amount of reserve that is needed to make this decision, to become a professional player (you earn your full income by playing casino games).

In the latter case you will have to spend a lot of time playing casino games, unless you would already have a large financial reserve you could put at risk. One should always be fully aware, that even when you have found the optimal attitude and strategy, **one is ALWAYS at risk of losing his bankroll**. Let nobody tell you otherwise: playing roulette involves risk and if you want to earn more than you lose, you would better accept the notion that unless you already HAVE large amounts of money you can put at stake, that **it is impossible for a small player to gain enormous amounts of money**.

It's ironic but even in the casino you encounter the world, those who have more than enough can play strategies which are more risky and back them up, small players should stick with small risk and gradually build up their profit.

I have chosen to play roulette as an extra way of income, because I don't have the enormous amounts of money in reserve I could stake, and perhaps even more importantly as a challenge in spiritual and intellectual capacity. I could not imagine I would have to sit at a roulette table to earn my full income (it would be quite stressful and a risky way of life and probably I would become bored with it very quickly).

The fact of casino games is: the less your bankroll, the less chance of leaving with huge amounts of money, unless you would by chance win an enormous jackpot while playing slots.

✘ **A successful session for me is gaining 1/5, in optimal cases 1/4th of my starting bankroll.**

That is it - nothing spectacular. This may seem small but it is realistic and in order to gain that profit, I will not take huge risk but rather the opposite: I will **avoid risk as best as possible**. I will **exploit any probability edge** I can find and every bet I lay down is embedded in a strategy. **I NEVER take a wild guess**, I can observe a long time without betting, waiting for the best moment to strike. I will only visit a casino when I'm in the right mindset: this means I will be able to concentrate fully, I will not drink alcoholic beverages, I will **work as an accountant** calculating each and every bet and I will **never divert from my betting strategy**. I have my money management worked out BEFORE I enter the casino and I stick to it.

This should be your motto: **find an optimal strategy which works for your initial bankroll and stick to it**. Do not take larger risks than you can afford, otherwise in the long run it will surely be at your expense.

My strategy I have carefully build up and practiced intensely at home, without playing for money, before going into the casino so I know the calculations are right and I feel comfortable and relatively secure with the strategy.

I have tested my method using **simulation software** (Roulette Xtreme) playing against real numbers from the Hamburg casino to see what my win-loss chances were, what the best entry point in the game of roulette was, when to strike and when I would leave the premises. I have fine tuned this strategy in order to get the best possibility edge. After all this, it was time to go back to the **real roulette table** with the right attitude. When I reach my win goal (gain 1/5 or 1/4 of my initial bankroll) I walk out. I don't hang around, I do not shout out when I have reached my win goal. I walk out a winner and it feels good: I didn't win large amounts of money, but eventually winning 54 sessions without a loss in a row adds up.

When I lose my initial bankroll I would decide to come back at a later time, I would not reach for my credit card to have another go at the same day. I'm always aware that whatever the strategy I would use, I might lose my initial bankroll when hitting that fatal odd streak and so should you, whatever strategy you decide to use.

When this happens I will not go broke, I know fully and accept the risks that this might happen and I will not blame the casino for it. If it was my fault (I would make a mistake in laying down the bets or I made larger risks than planned) then I am the only one to blame. If I would lose the initial bankroll, I will only have myself to curse at because I chose to take the risk in the first place and **the casino is a very fierce adversary**. I would analyse what went wrong and try to improve my attitude and the strategy in order to avoid further losses as far as I can.

However, as stated before I have at this time **54 roulette sessions in a row without any loss**, so I guess the strategy has its benefits for those who are willing to accept my advise. I refer to my strategy as a 'method', not as a system because the parameters are only partially mechanic and lots is left to the skill of the player for interpretation of the wheel outcomes and quick probability analysis on the fly.

Everyone can learn this but it takes time, lots of practice and only when you feel relatively secure with what you are about to do, you should play for money. The challenge I took for myself was that I would beat 100 Hamburg sessions in a row, only using a piece of paper and the Wheel Frequency Analysis graphic in the software package Roulette Xtreme (more on that later) BEFORE I would try this method out for money.

✘ **I suggest you try and do the same: beat 100 Hamburg sessions with this method or combined with other systems you find interesting, only using the bankroll you would be able to risk for one session if you would play for real. Mark down your win-losses after each session. Don't cheat: it will give you a pretty good idea what you might expect if you play for real money.**

If you lose one of those sessions, you have to start over, AGAIN and AGAIN and AGAIN until you are able to beat 100 sessions in a row.

Practice: the professional player is no different than an athlete, both invested a lot of time to increase their skill to gain enough edge to beat the adversary. And believe me: when you have chosen to beat roulette, you've picked a world champion heavy weight contender to fight against. Choosing Blackjack as the opponent would have been far more easier, especially if you are able to count cards without being noticed.

Consistently winning is far from easy, it requires determination, self control, study and practice.

I'm always willing to share and discuss for free what I have learned: by staking less, taking less risk, and using probability theory to my advantage, I have gained more eventually to come out in front of the casino. (I did make more than I lost). It took me three years to achieve this level, **playing thousands of roulette spins against the Hamburg files for practice. I studied probability theory, learned how to use Excel, bought simulation software (Roulette Xtreme) and practiced nearly every day.** I only go out to play roulette on a real table once or twice a week. I reach my win goal and I leave.

In chapter three we'll look at the frequently asked questions which I received thru e-mail, concerning my method or gambling in general.

CHAPTER III: FREQUENTLY ASKED QUESTIONS

One should always examine in depth the rules of the game he's about to play. I've studied the rules of the game on a technical and seductive basis.

First, I'll answer a lot of frequently asked questions which I received by e-mail or which were posted in the threads concerning this method on the gambling related internet forums being the **VIP-forum** or **Gamblers Glen**.

In the course of developing and publishing the method **Master Yazdani** invited me to become a moderator of his Yahoo group for numerology, timing, luck & roulette. I am not a numerologist myself, nor does my method use numerology, only probability theory. However, I only go out to play when I'm feeling focussed, as my method involves on the fly risk analysis and generally feeling comfortable with the risk one is about to take. All questions regarding numerology should be addressed to Master Yazdani.

Readers of this guide who are not a member of the above mentioned internet forums, I suggest they become member of one or all boards. All boards offer free exchange of ideas and experiences with gambling.

These threads are still alive and can be seen here.

Please add any of your experiences, bad or good results, any questions you might have, to one of the below forums:

- ✘ **MasterYazdani: numerology, timing, luck & roulette**

<http://MYaz.fateback.com/>

- ✘ **The VIP-forum thread on the JS Wheel Frequency Analysis Method**

<http://gambling.projectsydney.com/viewtopic.php?t=1513>

- ✘ **The Gamblers Glen thread on the JS Wheel Frequency Analysis Method**

http://www.gamblersglen.com/cgi-bin/teemz/teemz.cgi?board=_master&action=openopic&topic=4077&forum=Roulette_Message_Board

Q: Is roulette a 'fair' game

A: Fair I consider to be that if one decides to take a risk, the reward should be as high as the risk. As such **roulette is NOT a fair game**. Your risk is always higher than the reward on each and every spin.

On a single zero roulette table, if you would bet one number only you are taking a chance of 1/37 because there are 36 numbers and a zero (total 37 numbers). If your number comes up, your stake (1

credit) will be multiplied by 36, receiving in total 36 credits. However, you have only gained 35 credits (36 credits – 1 credit that you put up of your own money). The risk that you took however was 1/37. If it were a 'fair' game you should have gained 36 credits for taking this risk in stead of 35 credits. This is what the 'house edge' is all about: in each casino game you have to take more risk than your award for taking that risk.

Q: Can someone beat roulette consistently?

A: This is a very difficult question because we would have to define 'consistently'. **If consistently means that you will be able to win every time you play a session I would say NO. If 'consistently' means that the sum of your losses and wins will balance in favour of wins, I would say YES.** I have done it and so can you. A professional player is not an always and every time winner, but he is able to cut down his loss at the right time, and is able to increase his gain without taking huge risk. I can not express how important the last part is. If you take huge risk you will fail, maybe you'll have some lucky moments but in the end you will lose everything so if you are planning to get rich overnight with a small initial bankroll, it can NOT be done, I'm sorry to shatter your illusions.

Q: What about the 'dealer's signature' or 'biased' tables

A: Most questions I received, were concerned about dealer's signature or other events that would make the table 'biased', which would have a negative effect on my method.

'**Dealer's signature**' is a common gambler's term used to describe the idea that the dealer of a roulette table, would be able to deliberately aim the ball towards certain sections or even individual pockets. Another interpretation is that because the dealer has developed a subconscious routine in launching the ball, skilled dealer watchers would be able to predict with more or less accuracy in which section the ball is going to land.

'**Biased**' refers to a table of which the outcomes would differ from random outcomes. Because, of the large amount of standard deviation (we will get into that later) involved in the outcomes of roulette, it would take thousands of spins to determine with scientific accuracy that a table is biased, which would be needed to gain sufficient edge. An '**edge**' is every strategy of playing which offers enough security to be able to beat the house edge.

Older roulette wheels (which are now rarely to be found in casino's), had **deep, not scalloped pockets**. Some people like Christopher Pawlicki (of whom you can read the interesting book 'Get the edge at roulette', argued that by watching the dealer and analysing the wheel outcomes, one could gain an advantage sufficient enough to beat the house edge.

The technique and concentration required to do this needs a lot of practice, and most players will find the learning curve too time consuming or too complex to be practical.

Illegal roulette computers are still being used today to determine the launch speed of the ball and the wheel (often referred to as **ballistics research**) to make an estimate in which sector the ball is about to land. I do not own such a computer, so I can not comment on their value, nor do you need one to learn my method. Most members who commented on the use of a roulette computers, argued that the use is impractical in a casino environment due to the severe casino security and if one gets caught using such a illegal device a lawsuit will follow and the equipment will be confiscated. Also, the introduction of

scalloped pockets on which the ball is far more likely to scatter around on impact, has made the use of ballistics far more difficult to apply, because as such wheel outcomes became even more random. Sometimes the ball will scatter, other times it will nearly drop dead on impact.

Even then, if one would go thru the months of practice needed to be able to pinpoint dealers signature or biased tables on the fly without using a computer (and remember to be accurate enough you would need not a couple of hundred but thousands of spins), these days casino's installed **state of the art bias detection software** which alerts the casino immediately, if a wheel is in danger of becoming out of balance. Such a table would be immediately closed down before you could gain advantage out of it. In any case you can be sure that any respectable casino will spot dealers signature or bias with far more accuracy, before a player could, because the wheels are supervised and updated with each consecutive spin.

Wheels with deep pockets have been replaced with wheels with scalloped pockets and each wheel has numerous ball stoppers (these are the diamond shaped obstacles on the spiral down path of the ball), making these wheels truly random. **Dealers work in relatively short time spans on each table**, and these time spans are far too short to scientifically determine the dealers signature.

A friend of mine worked at a local casino as a dealer operating the roulette wheel, and when I asked him about 'dealers signature', he had a laugh.

Think of it, he said:

- The slightest millisecond or milli-speed of difference, the smallest amount of different angle on the trajectory of the ball hitting the ball stopper or pocket, dust, draft or change in air density (which the dealer doesn't control) will make an enormous difference where the ball finally comes to rest.
- And even then, if you still would believe in **the myth of dealers signature** after all these facts, would you think that the casino would be interested in hiring such a dealer who would create a 'biased' wheel? Casino's have the largest financial interest in having non biased wheels, because the dealer who would have such superhuman skill could invite friends over to bet on his dealers signature: it would lead to massive financial loss of the casino.
- To be scientifically correct one should compare the statistical analysis of thousands (not hundreds) spins of the same dealer on the same wheel with scalloped pockets, and only when the dealer would be able to consistently beat the standard deviation (we will get into this later on) one could say there is a bias. As far as I know of such scientifically correct analysis does not exist, and if it exists it would show that dealer's signature on a modern wheel is a myth. There would be no significant difference between random outcomes, and the outcomes of the dealer who would admit that he has such a skill. If there would not be significant difference between random outcomes and the outcomes of a dealer who has the superhuman skill to pull this off, one could not state that he has found an edge by betting on the dealers signature.

So why is the myth still out there, you might ask?

Well, dealers make most of their income by tipping: they have a **financial interest** in making people believe that they can pull this off. People selling books or video's about their skill have **financial interest**. I do not sell my guide, nor do I claim to be able to predict where the ball will land. My method only consists of probability theory, combined with the right attitude of the player.

I do not have any commercial interest if you believe me or not. I wrote this guide as a fellow player who has gone thru a long learning process, and in the process I saw many friends and other people lose a lot of money, so I chose not to make money from players who in most cases have already lost a large amount of money playing roulette or other gambling games. You should not believe me: you should try and practice my method yourself before you play for money, then decide if I'm right or wrong.

When players believe that the dealer deliberately or subconsciously would be able to influence the outcomes, then players will be more willing to tip the dealer, because they believe the dealer was in their favour. So some dealers will give the impression that they would be able to do this, because they know that this myth creates more tipping. Do not fall into this trap.

Q: How did you design your method?

A: If one takes as goal to earn an income (partially or full) by playing roulette or any other gambling game, you should have a thorough understanding of **probability theory** and add the risk factor you can take (your initial bankroll), and still always fully accept the risk that things can go wrong (you lose your initial bankroll).

Each strategy should be tested against simulation software BEFORE you walk into a casino. This will give you a general idea if your calculations are valid or not and what the risk is.

I worked out my strategy using **Roulette Xtreme and Excel**. I'm not affiliated with the developers of Roulette Xtreme (I bought my copy as a regular user), but as they did a very good job of creating a program which can be used to test (and avoid bad systems before you lose money on them) I recommend the purchase of this package to anyone who wants to design a system and put it to the test (as you should always do before playing any method or system for money).

I use Roulette Xtreme to generate the Hamburg Casino roulette numbers (these are real numbers from the tables of the Hamburg casino) and to create statistics, Excel I've only used to calculate the money management.

Money management is essential: it is knowing and calculating in front how much you should stake at any given moment in your strategy, to reduce the risk and gain as best as possible versus the odds. Whenever I'm in the casino, I have a small sheet with me, so I know exactly in every step of my betting strategy how much I should stake to gradually build up my profit. When you stick to the rules you designed and tested yourself BEFORE going in, you will have a far better chance to walk out with a profit.

Q: Can everyone adopt your strategy?

A: Everyone can learn my strategy on a technical basis, but the most difficult part will be **changing your attitude** towards playing roulette and gambling in general. Both are essential to increase your chances of coming out a winner.

Q: Why don't you charge money for your method?

A: In the first two years I played with my friends we all lost increasing amounts of money playing roulette. We were ignorant of the real odds coupled with an enormous amount of seduction which the casino successfully offered. I saw with my own eyes how players lose their shirt in the process.

It was by witnessing these terrifying events that I decided to study the game of roulette and the psychology of gambling in general. I think it is the right of every player to be informed free of charge, and that every player who universally choose to take the risk by entering a casino should help each other out by sharing their experience.

It is US versus the casino.

A lot of **system sellers are affiliated with casinos**. They will offer systems they want you to play using the links they offer at their websites. System sellers often get a bonus for your subscription in an online casino, or even a percentage on your loss. Think of it: would any casino affiliate themselves with a system seller who was actually offering you a system which would ruin the casino in the long run?

Most **system sellers do not give information on the risk** you take using their systems. They will rave about their system to make you curious, will be charging you for the purchase, even encourage you to sign up a casino on their website and eventually take a cut on your loss. Theo Rulte has done an excellent job gathering experience of players using commercial systems. Please check the document <http://www.freewebs.com/sellersexposed/> first before buying a commercial roulette system.

This is reality and it is a sick state of affairs. If you see a system being sold on a website which has links to casino: stay away from it. You might as well ask the casino how to blow your money.

Q: If your method works why didn't you retire on your winnings and live in a mansion?

A: What most players refuse to believe is that **EVERY method or system involves risk**, and unless you already have a lot of money that you're willing to let go, it is impossible to gain enormous amounts of money playing roulette... unless you're also willing to take a huge risk. In the latter situation the chance is very real that it will bankrupt you in the long run. You can have a couple of lucky runs making bets which involve a huge risk, but this will never last: it will eventually lead to the **gamblers ruin**.

I personally use a **relatively small bankroll** (500 credits, equivalent of 125 euros) and in each session I aim for a gain of a fifth or a fourth of my starting bankroll using 25 eurocent chips in each session I play.

It would be possible to play this method using a larger denomination of chips (let's say 1 dollar/chip), but then your bankroll should also be four times higher (600 euros or dollars) in order to face negative streaks. If you would choose to play using 5 dollar chips you would need 3000 euros or dollars. The larger the value of the chips you are using, the higher your initial bankroll requirement. So it's better to buy a lot of chips of low denomination, than only a few chips of high denomination.

Although the chance is small that you will lose your initial bankroll if you fully stick to the figures I will give, there is **ALWAYS** the risk that this can happen.

Even more, this small risk can happen the first time you are at the table: you would be a very unlucky person and you would lose your entire bankroll (you probably could not afford to miss in the first place).

Although we can relatively calculate how much the risk is, nobody can calculate when this small risk will happen: it can never happen, it can happen the first time you choose to take the risk. The risk is small but it remains, nothing can be done about this, nor will anyone ever be able to do anything about this unless the rules of roulette changes.

A professional player never take more risk than he could afford, and I frantically could not afford to spend 3000 euros on one bad streak.

If one decides to carry on based on fully accepting the risk he's about to take, carry on to **chapter four: roulette as a balance / imbalance game.**

4.1 Basic ideas of the JS Wheel Frequency Analysis Method

There are many approaches out there in order to design a working strategy. Mine is based on probability theory as explored by Pascal and Fermat and on common statistics.

Probability theory can teach us a lot on risk and odds, that something which we consider to be positive or negative when we relate it to gambling could happen.

Statistics are used to make a prediction on what we might expect in the future based on previous outcomes (commonly known as observations). As such statistics are not perfect as well and surely we are not fortune tellers. Statistics tell us only what is most possible that may happen in the future, but it is NEVER a complete certainty. So for instance if you make a statistical analysis of all the Hamburg Spins (more than a million) you would see for instance that it is unlikely that a dozen would show up 20 times in a row, but you can never conclude that in the future it could not turn up 21 times in a row while you are at the table. You can only say it is unlikely to happen: it is not a certainty as such.

However, probability theory and statistics helped me enormously to analyse the game of roulette and seriously increase my winning chances.

This is not a course in probability theory nor in statistics, because there is already huge information on these subjects to be found out there, in book form as well as on the web, so I would recommend that each player consults such information in order to fully understand how to calculate his chances when placing a bet.

When this material seems intimidating, there are also pretty straightforward books available on these subjects. See the last chapter for recommended literature.

Recommended sites on these subjects are:

✘ The layman's guide to probability:

(<http://www.probabilitytheory.info/>)

✘ A fully featured free online course in probability can be found here:

(http://www.dartmouth.edu/~chance/teaching_aids/books_articles/probability_book/pdf.html)

✘ A fully featured basic course in statistics and how to apply them, can be found here:

(<http://www.psychstat.smsu.edu/introbook/sbk00.htm>)

And there is good news, even when you would not wish to explore probability theory fully, there are some excellent, even **free probability calculators** out there.

Personally I use this one which is free, but you do need Excel to be installed on your computer and subscribe to the mailing list (I am not affiliated with the site in any way, so this information is only given to facilitate the finding of the right tools out there).

Subscribe by clicking on the link below to receive a fully working and decent probability calculator.

(Warning: this probability calculator is based on 37 numbers -French roulette-, so for American roulette you should always consider that the probability percentage will be slightly lower, adding to the risk.)

(<http://www.gambletowin.bravepages.com/roulette-calculators.htm>)

6. Probability for a chance to show during a sequence of n spins

$m =$

$n =$

Result =

(m = amount of numbers you bet on)

- * single number : $m = 1$
- * split bet : $m = 2$
- * street bet : $m = 3$
- * corner bet : $m = 4$
- * double street : $m = 6$
- * dozen and columns : $m = 12$
- * even chances : $m = 18$

Example : the probability for any of the 6 double streets to show during a sequence of 6 spins is 0,6541
In other words, in 65,41% of the cases, the double street 1 - 6 shows at least once during a sequence of 6 spins (the probability is the same for any of the other 5 double streets).

In this example (a screenshot from the mentioned probability calculator) we can see that the probability for one of six numbers to show within a cycle of 37 spins is 0.99856478. In percentages this is 99.85 %.

You might think: this is it, but those 0.15 % which are not included are the bad streak, in which a double line wouldn't show within 37 spins, wiping out your bankroll. And those 0.15 % can be a whole lot of spins.

4.2 The difference between American and French roulette

One should never forget that in roulette there are 37 numbers (in French roulette one zero and 36 regular numbers) or 38 numbers (in American roulette two zeroes and 36 regular numbers).

So if you would decide to play only one number on a French roulette table, your chance of hitting this number is exactly:

French roulette = $1/37 = 2.70$ % chance
 American roulette = $1/38 = 2.63$ % chance

This clearly shows us that you have a better chance of hitting that one number on a single zero table. On a French roulette table your risk is smaller on EVERY bet you take.

If we were to play 6 numbers at once:

French roulette = $6/37 = 16.21$ % chance
 American roulette = $6/38 = 15.78$ % chance

Now, it's common sense that we should ONLY play on single zero roulette tables, because the edge of the casino is lower. I do understand that some readers may not have access to single zero tables. The method I will be describing can be used for single and double zero tables, but with different safety margins.

Also, one has to consider the house edge: **on American tables you take a higher risk, not only because there is one number more, but this higher risk is not rewarded with higher pay-outs** (see the frequently asked question: 'Is roulette a fair game' in the previous chapter). Playing on so called 'outside bets' (these are even chances for example red-black) on an American table is even worse, because most land based casinos offering French roulette have a rule which is called 'en prison', meaning if a zero shows up while you are playing an outside bets, you get another chance of recovering your money.

My method has only been tested on single zero roulette tables, so let me know how it's doing on American tables. As shown above your chances of winning will be slightly lower, this cannot be avoided due to the higher house edge which is part of double zero tables.

4.3 Roulette is a game of balance / imbalance

A roulette wheel does NOT have memory what so ever. Each spin is considered to be an '**independent trial**'. This means that past outcomes or statistics do not affect future outcomes in any way what so ever. The myth that past outcomes would affect future outcomes in any direct way is sometimes referred to as the '**Gambler's fallacy**' (for instance thinking because the number 1 turned up, now the number 2 has a higher chance of turning up, or because a number showed it has a higher chance to repeat).

The difference between gambler's fallacy and probability theory is that the first one mostly relies on irrational thought (having a feeling this number will show up), the second one uses mathematics and risk analysis to determine the most logical bet.

A roulette wheel is confined to 37 (French) or 38 (American) pockets and a ball spinning. On a non biased table (meaning that for some reason or another some number would have a higher chance of coming up because for instance the pocket was slightly larger) each number has exactly 1/37 (French) or 1/38 (American) chance of showing up.

Now, here comes in the **probability theory** and the **law of large numbers**:

Because in roulette every number has exactly the same chance of turning up in each spin (one spin = one independent trial), eventually the roulette wheel will after many spins (many independent trials), equally distribute all chances (meaning all chances will relatively balance out) even though it has no memory what so ever.

You can check out this phenomenon for yourself: note down about 100 spins from any table you want to use. Now check which huge difference there is between some single numbers that may not have turned up at all in the course of 100 spins, other numbers will have turned up six times or even more.

Now divide the wheel into three sections of twelve numbers and count how many times each section has turned up (if a certain number turns up in a section, no matter which one, we'll count this as one show for the sector). You will see for yourself that certainly after 100 spins every section has turned up,

and that the imbalance in the appearing of sectors is far less extreme than the appearance of single numbers.

Divide the wheel into sections of six numbers each, and you can see that the imbalance in shows is already getting higher, because the lower amount of numbers you choose, the higher the variation in shows / non shows.

If you would take a larger amount of numbers (let's say 10,000 spins) you would notice that the difference in shows / non shows of single numbers and sectors is already slightly diminishing.

Take a million of spins and you would see that the differences of shows / no shows proportionally starts to even out.

Perfect balance will however never be reached.

As stated before, we do not live in a mathematically perfect world, mathematics are only a crude tool to examine and express reality, but they will do for what we are trying to accomplish.

Basic premises of the wheel frequency analysis method are:

- ✘ Roulette is a game of balance / imbalance**
- ✘ The less numbers or the less spins we take as a statistical reference, the higher the imbalance is**

Everyone playing roulette will have seen streaks in which an even chance (red-black, high-low, even-odd) immediately shows up again, but also here the imbalance can become severe (let's say red shows up 18 times in a row), but according to probability theory we can state that the HIGHER the imbalance becomes the more probable it becomes the wheel will return to balance in some way or another (for instance the large increase in probability that black will show up after 18 consecutive reds) because of the law of large numbers.

The probability that black would show up after 1 red is:

0.73630387 or 73.630387 %

The probability that black would show up after 18 reds is:

0.99999683 or 99.999683 %

It could be that black will only drop one time, then go back to a long streak of reds –nobody can predict this- but in our method we only need one return to balance, and we are not going for the even chances, but for the inside (= number) bets.

And, we'll never play only one single number, but at least six numbers at a time because the intervals of showing / non showing are LOWER than you would be playing only one single number and this is founded on probability theory, not gambler's fallacy.

To put it in layman terms, we could explain it in the easiest way by using averages, in technical terms called the **artimic mean**.

The average or frequency of a single number showing up would be $1/37$ or $1/38$
The average or frequency of 18 numbers showing up would be $18/37$ or $18/38$

From playing roulette you and I know that single numbers or even changes do not turn up right on cue because they should average out. Remember, roulette has no memory what so ever, but all numbers have an equal amount of chance to turn up which in the technical terms is referred to as the **law of equal distribution**.

However, there can be huge fluctuations in this average which in the statistic domain is referred to as the **standard deviation**. The calculation of the standard deviation is a rather complex one, which I won't be covering here, but it is important to know that the formula of standard deviation is used to calculate how much fluctuation (in statistical terms referred to as **variance**) there is, outcomes which will be below or above the average.

For instance a single number could show more than once in a cycle of 37 spins, or it could not show at all. The standard deviation is used to calculate how much chance there is that there will be a difference from the artimic mean.

The higher the variance is, the higher the risk you are exposed to, because the bet you choose may not turn up at all while you are at the table or it may turn up immediately. Even someone who has figured out the most extreme standard deviation for the bet he is going to take, cannot predict whether he would be playing a streak that will go beyond the standard deviation: it can only be seen in retrospect.

The lower the variance, the lower the risk you are exposed to, because if you bet consistently on the same chance, you would certainly see it coming up in your session if you were to play it long enough.

A member of the VIP-forum (Kelly) whom I wish to thank for his aid, pointed out to me a free tool for calculating the standard deviation, which you can download here for free:

<http://www.r-droste.de/rubriken/delta-rechner.html>

Unfortunately the software is only available in German, but I'll provide some explanation on how to use this very interesting tool. Interesting because it will confront you with the reality of odd streaks that can and will happen.



Anzahl der Coups = here you can enter the amount of spins you want to check, I entered 37 spins (= one complete cycle on a one zero table)

Then check the bet for which you want to calculate the standard deviation:

- Einf. Chance = Even Chances (Red-Black, Low-High, Odd-Even)
- Kol./Dutzend = Columns and Dozens bets
- Transv.Simple = Single Line (Three numbers)
- Carré = Square (Four Numbers)
- Transv.Pleine = Double Line (Six numbers)
- Cheval = Couple (Two numbers)
- Groze Serie = Covers all the numbers as they are placed on the wheel itself from 22 to 25 included
- Kleine Serie = Covers all the numbers as they are placed on the wheel itself from 27 till 33 included
- Orphelins = Covers the numbers 17,34,6 (first sector) and 1,20,14,31,9 (second sector)

What do all these numbers mean (look at the supplied graphic for reference):

- 'Anzahl der coups' : Here I've entered 37 because we want to calculate the standard deviation for one cycle on a single zero table.
- 'Kol/Dutzend' : I've checked this because I want to calculate the standard deviation regarding to the showing of dozens or columns in one cycle of 37 spins
- ' 1 Delta bereich' : This is German for standard deviation.

Here we see the numbers unten (under) = 9.15 / oben (above) = 14.85. This means that a dozen or column would only show 9.15 times (below the average) or could show up 14.85 (above the average) in a cycle of 37 spins.

' 3 Delta bereich' : Standard deviation can go a long way and in roulette you should always be prepared for the worst case scenario. Remember: we want to reduce our exposure to risk as minimal as possible. The third standard deviation covers 99.73 % of all patterns below or above average. In this case we see the numbers unten (under) = 3.46 and oben (above) = 20.54. Meaning: a dozen could come up only 3.46 times in a cycle of 37 spins or 20.54 times. However, these scenarios would be rare but they DO happen. It's not because of dealer's signature or bias, it's just coincidence which is statistically expected. And in very rare occasions it could even be more extreme because the 3rd step of the standard deviation does not include the 0.27 % streaks that even go higher or lower in shows / non shows.

Why is this tool so useful? This tool gives you a realistic idea of what you might be facing. As an example if I am betting one dozen for 37 spins in a row, it may only show up 3.46 times or even slightly less, or 20.54 times or even slightly more (remember the 3 step of the standard deviation is not 100 %, it only covers 99.73 % and those 0.27 % still in there can make the difference between bankruptcy and success).

4.4 Using extreme imbalance to increase our chances

If we were to play one number straight away immediately when we arrive at the roulette table, we already know that it can take a very long time for one number to show up (more than 400 spins would be an extreme example but this has happened on real tables) or it could show up right away. Your conclusion should there for not be that the table is biased, but that such a result is still within limits of what is to be mathematically expected. This is the very fact why roulette is such a hard game to beat: because of the huge fluctuations that are directly caused by the game concept itself, being 37 chances and one ball.

If you use the above tool, you can calculate that it could take 395 spins before it turns up once (and remember: it can even go higher because the 3 step of standard deviation doesn't include the 0.27 % possibilities).

A scientist will state there is a high variance (in this case this would mean that the intervals between the arriving of the number can largely differ from the arithmetic mean). Now, would you consider this to be a good bet? If your single number does not show up during 395 spins, and you have been playing it since the first spin, you would have lost an enormous amount of money, because after 35 spins you would have to increase your stake to cover your losses.

Chances are real that your bankroll will evaporate when you meet such a negative streak and you could no longer backup the progression needed to earn a small profit. Even if you could back it up financially, you would run into table limits (= the amount of chips you are allowed to place on the table for one single spin).

Conclusion: we have to avoid bets which have a broad variance as best as we can. One possibility to do this is by increasing the amount of numbers we are going to bet, so the average of shows between the intervals of no shows is not as high as when it could be if we only played one number.

However, even if we could bet let's say six numbers, the standard deviation can go a long way and probably more than your bankroll could cover for.

Now here is the idea: what if we wait for an extreme imbalance to happen BEFORE we start betting? You would have to stake less, and in best case playing a progressive bet would not be needed. If a progressive bet would be needed, chances are good you could finance the progression with your bankroll, and that one of your six numbers will show up before your bankroll runs dry.

✘ Imbalance can be used to decrease your risk, without fully avoiding it.

We can never fully avoid the risk with this method as it will eventually meet a negative streak (for instance the streak we are playing is far above the arithmetic mean), but we do know it is less likely to happen because the higher above the arithmetic mean, the higher the probability becomes that one of our numbers will show up. So we can conclude it would be good strategy to:

✘ Once you have picked your numbers, consistently play the same numbers as long as you can until you have a show.

If we would have chosen to play the six numbers right away when we arrive at the table, the probability is higher that one of the six numbers you play will not drop before your bankroll is evaporated. If we wait for a severe imbalance before playing it then the probability is higher that one of your six numbers will show up before you go bankrupt.

However, before you rush in always remember: standard deviation can go a long way, and probably more than you can afford. We are only able to reduce the risk, not to fully avoid it unless you have an unlimited bankroll account and there are no table limits.

As stated before, the smaller your bankroll, the larger the risk you are taking. This is the irony of casino games. A small time gambler will have a very difficult time of making it out there, people who already are rich can risk more to beat a negative streak.

4.5 Betting diagram vs wheel analysis

Have you ever asked yourself the question why the betting diagram does not resemble a roulette wheel at all? You should: the lay-out of the betting diagram does not tell us anything about the wheel distribution.

The physical action and the essence of the game takes place on the wheel, not on the betting diagram, so you should:

✘ Start examining the wheel itself, not the betting diagram

The betting diagram is only there to facilitate the making of bets: the numbers on the betting diagram are placed chronologically as opposed to the wheel.

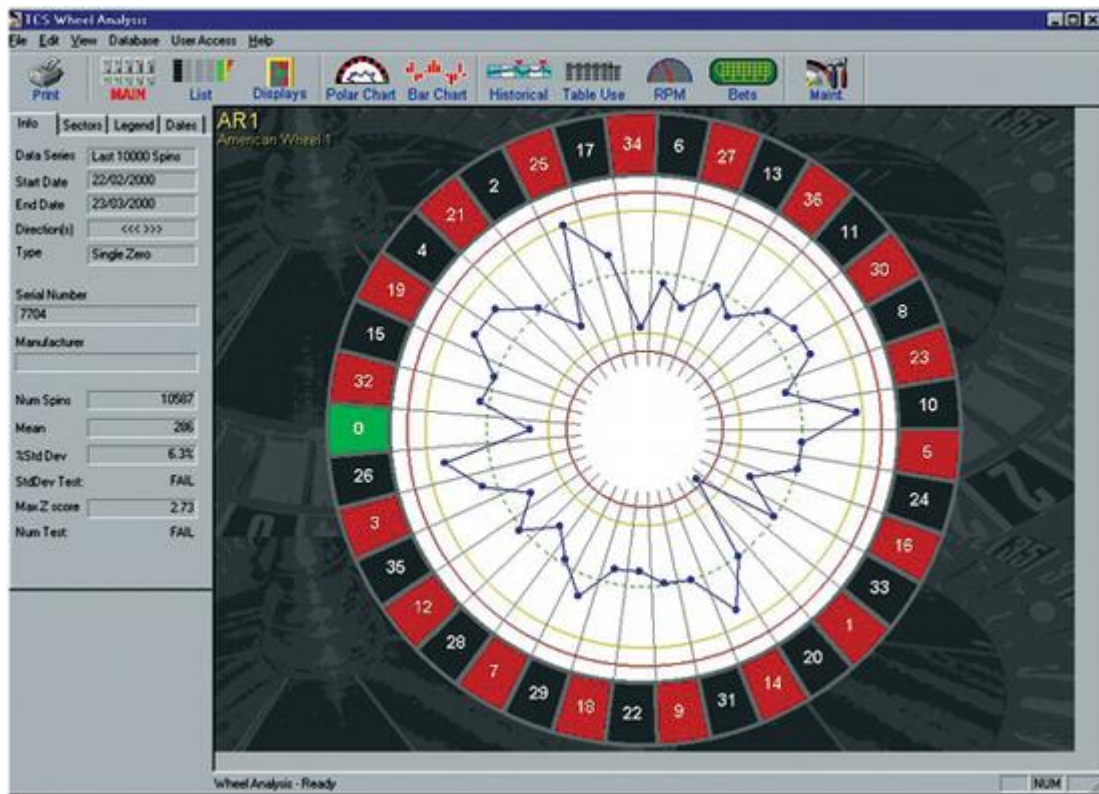
The betting diagram can be quite misleading for the player: for instance you decide to play a double street which didn't show up for while, while in fact the numbers of your double street are positioned in sections of the wheel which have turned up already quite a lot above the arithmetic mean (it's only your mishap that it was not one of the numbers in your double street).

A **diagram better** will in this case choose one of the numbers in his double street bet, a wheel analyst or sometimes called the **section shooter or neighbours better** as I am, will bet that a section which is far below the arithmetic mean of appearing will show up.

The bet choice can be entirely different between diagram and wheel analysis. Only the latter one has chosen to base his bets on the wheel itself, where the physical action of roulette eventually takes place, so it offers a better statistical reference as opposed to a diagram analysis betting.

And, don't you think if we want to develop a method which offers an edge, we should start out from the same analysis-monitoring safety tools that the casino uses? The casino NEVER analyses diagram outcomes (for instance tracking how many times a double street showed up), they use the positioning (which is not chronological) of the numbers on the wheel itself for statistical monitoring.

Following is a screenshot of the John Huxley (one of the leading manufacturers of roulette wheels) security software. As you can clearly see: it's the wheel outcomes that are being monitored and NOT according to the betting diagram. On the left hand bottom side you can see that the statistical values that are being monitored are the arithmetic mean and the standard deviation of the wheel outcomes, not the betting diagram outcomes.



✘ Analyse wheel outcomes instead of betting diagram outcomes

Now you should also ask yourself why the numbers on the wheel are not placed chronologically but all mixed up. Wouldn't it be far easier for the player if the numbers on the wheel were placed chronologically so you could immediately see which sections have turned up a lot already?

You could for instance say, hey the wheel section of the chronological numbers 1 to 6 has shown up a lot already (above the arithmetic mean), except the number 5 in this sector didn't show, so I'm not going to bet that number 5 will show up, but I'll bet that it will be a number between 7 and 36 or zero (the 5 other sections of the wheel that wouldn't have appeared so they would be far below the mean of appearing, increasing to the probability percentages that they will be appearing soon).

A diagram bettor who doesn't take the wheel distribution into account, would for instance bet on number 5 because it didn't show up, a wheel analyst will in the above example not bet on number 5 because if the numbers on the wheel are placed chronologically, number 5 would be sitting in a section which have already turned up above the average.

The wheel analyst isn't looking for shows / non shows of individual numbers, dozens, even chances, double lines, street lines, what so ever, he is looking for the way the balls were distributed along the wheel and how much balance / imbalance there is.

✘ Do not think chronologically (for instance from 1 to 6) but according to the positioning of the numbers on the wheel (for instance from 0 to 26 clockwise)

The last bet would be a smarter bet, not because the wheel has a memory, but because the wheel due to its physical non biased construction is subjected to the law of large numbers and the law of equal distribution (if all chances have the same chance of showing, eventually after a large amount of spins, a relative balance will occur).

However, as mentioned before it would not be practical to use this law on a single number because the standard deviation (fluctuations from the mean) is so large. So we are going to have to find a bet selection with less variance in shows / no shows.

Now let's put two things together: we will note down the outcome numbers as positioned on the wheel itself, as opposed to the betting diagram (so we will NOT track the outcomes in sequential order from 0 > 36, but we will track the outcomes as they sit on the wheel so from 0 > 26 clockwise), this way we have a real visual reference of the wheel distribution, not the betting diagram distribution.

Then we will choose a section which is extremely outbalanced, and we are going to bet that this outbalanced section will appear in the near future.

✘ Base your bets on wheel distribution not on diagram distribution

On the next page you'll find a convenient neighbours chart which depicts the eight neighbouring numbers of each number as they are positioned on the wheel.

So for instance if the outcome is number 32, you can see this is the sector of 35-3-26-0 on the left hand side of number 32, numbers 15-19-4-21 lay on the right hand side.

- ✘ Cutting out the chart and using it as a reference in real play isn't cheating, and offers you a far better idea on the area where the ball landed, instead of watching the betting diagram which has no relationship what so ever with the positioning of the numbers on the wheel.**

12	35	3	26	0	32	15	19	4
5	24	16	33	1	20	14	31	9
15	19	4	21	2	25	17	34	6
7	28	12	35	3	26	0	32	15
0	32	15	19	4	21	2	25	17
30	8	23	10	5	24	16	33	1
2	25	17	34	6	27	13	36	11
9	22	18	29	7	28	12	35	3
13	36	11	30	8	23	10	5	24
1	20	14	31	9	22	18	29	7
11	30	8	23	10	5	24	16	33
6	27	13	36	11	30	8	23	10
18	29	7	28	12	35	3	26	0
17	34	6	27	13	36	11	30	8
16	33	1	20	14	31	9	22	18
3	26	0	32	15	19	4	21	2
23	10	5	24	16	33	1	20	14
4	21	2	25	17	34	6	27	13
14	31	9	22	18	29	7	28	12
26	0	32	15	19	4	21	2	25
24	16	33	1	20	14	31	9	22
32	15	19	4	21	2	25	17	34
20	14	31	9	22	18	29	7	28
36	11	30	8	23	10	5	24	16
8	23	10	5	24	16	33	1	20
19	4	21	2	25	17	34	6	27
28	12	35	3	26	0	32	15	19
25	17	34	6	27	13	36	11	30
22	18	29	7	28	12	35	3	26
31	9	22	18	29	7	28	12	35
27	13	36	11	30	8	23	10	5
33	1	20	14	31	9	22	18	29
35	3	26	0	32	15	19	4	21
10	5	24	16	33	1	20	14	31
21	2	25	17	34	6	27	13	36
29	7	28	12	35	3	26	0	32
34	6	27	13	36	11	30	8	23

5.1 Roulette Xtreme

No method or system should ever be played for money without first practicing it at home, feeling comfortable with the routine, calculating the money management and analysing the risk factor which is, and will always be part of playing roulette.

Do not cheat yourself: write down your losses and wins of each practice session, it will give you a realistic idea of what you might expect if you play a certain system or method for real money.

I personally use the software **Roulette Xtreme** for doing this, as it allows me to import roulette numbers from Roulette tables in the Hamburg Casino, so it is just like playing for real. Some people are opposed to **RNG** (= Computer Random Number Generating), so playing the Hamburg Casino spin files, is just as if you would be at a real table in the Hamburg casino.

I have no affiliation with the Roulette Xtreme developers, so I can highly recommend this software package on an objective basis because this software let's you practice whatever system or method you would choose, comes with a lot of pre-designed systems ready to use and will offer you a realistic view on the merits and downfalls of systems or your personal style of playing.

This software package can save you a lot of money and is reasonably prized, so I would advise instead of cashing out on chips, you buy a copy so the programmers can develop it further and so you would know how to earn more or lose less chips in the future.



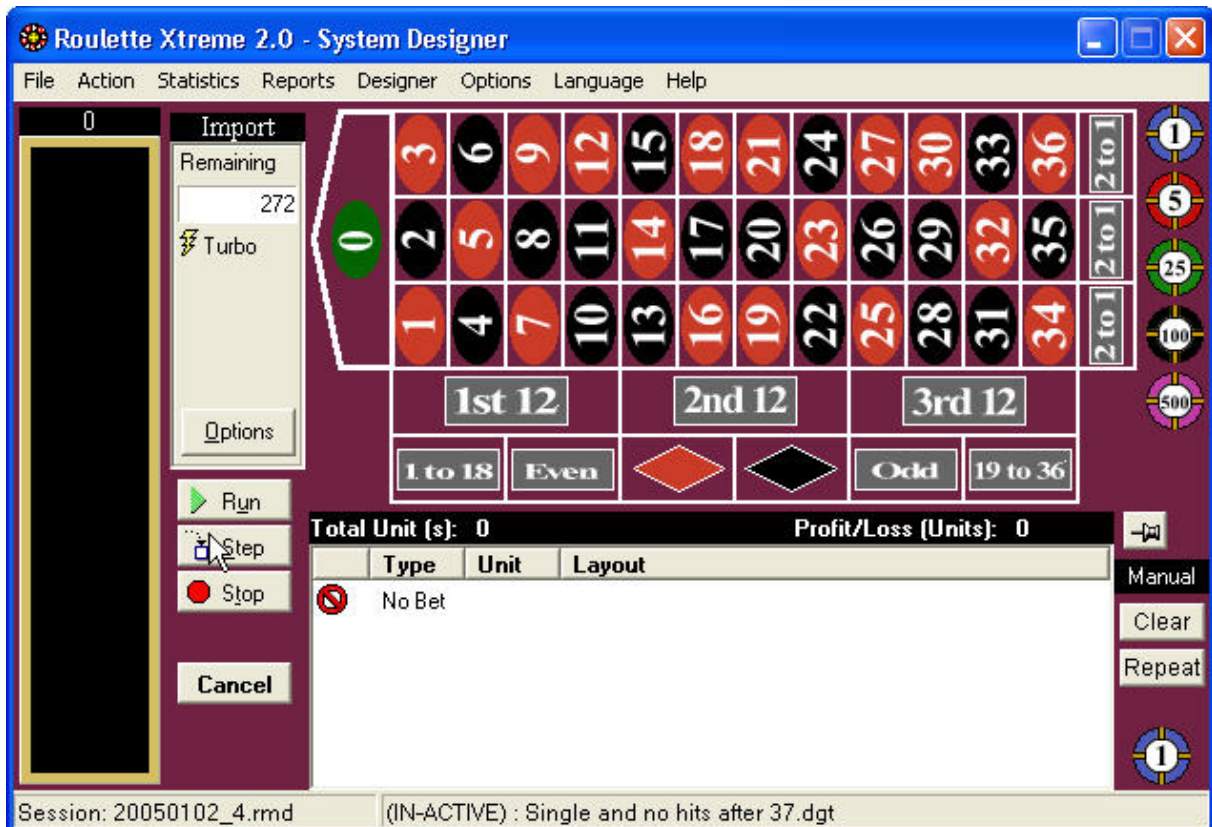
A full working trial version of Roulette Xtreme can be downloaded here:

(<http://www.uxsoftware.com/pages/index.html>)

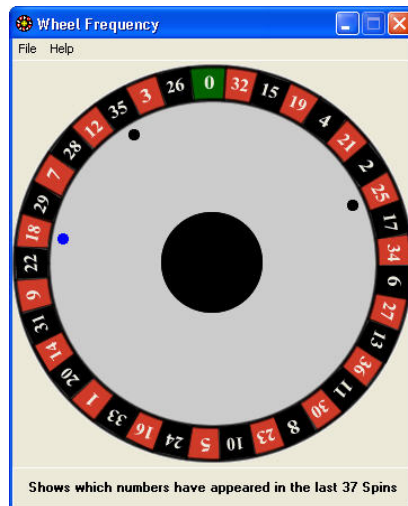
● Our first observation exercise:

After you've installed the trial version, take some time to get comfortable with the software, then go to:

- 1) Options > Download from website > Hamburg Spins
- 2) Click on Spin setup and make sure the option 'Separate tables into individual filenames' is active and that the option 'Combine all spin data into one filename' is not active. **This is very important because otherwise the spin files you download will all be merged into one spin file, which is statistically not correct for the method we are about to learn.**
- 3) Click on 'Download setup'. Choose the starting and end date you desire and click on 'Download'. Depending on the time span you have chosen and your internet connection it can take some time before all files are downloaded. You'll see the files gradually coming in. When everything is in, click on 'Quit'.
- 4) Now choose 'File' > 'Import Data' > 'Regular format'. You should see the import folder which contains all the spin files we have just downloaded.
- 5) Double click the spin file you wish to use.
- 6) Now you should see the 'Import' screen, similar to this:



- 7) Each time you click 'Step', one number of the Hamburg roulette spin file will be generated. In the 'Remaining' box you'll see how many numbers are left in the session.
- 8) Now, for the interesting part: in the menu bar open 'Statistics' > 'Wheel Frequency' (or choose the shortcut F12) and you'll see something similar to this



- 9) Drag and position the windows of the Wheel Frequency Chart and the main interface in such a manner you can see them both at once.
- 10) Whenever you click 'Step' a new blue spot will appear on the Wheel Frequency Chart next to the number that came up, the black spots are from previous spins.
- 11) Click 'Step' several times and watch how the graph slowly fills up with dots.
- 12) Observe: some sectors remain open (no numbers have dropped in them), while other sectors are slowly filling up. Gaps will start to appear.

5.2 Roulette is just like rain

Try to mentally picture a roulette wheel as this: each spin of the wheel is like a raindrop landing on the pavement. Each raindrop is independent from other drops.

Although each drop is not conscious of where the other drops have landed, the more drops land (in our case numbers), the more the pavement (the wheel) gradually gets wet (filled with numbers).

Although the pattern in which this happens will be always be different, in essence the mathematical process is the same: after the rain starts pouring in, you will never have a situation in which let's say several stones sitting asides of each other on the pavement will not get wet at all, and others would be soaking wet.

Probability theory in this aspect is ideal for getting an idea how this process will happen. These are only estimates, but they are close enough for our purpose. I refer to probability theory or the previously discussed probability calculator on how to count these figures by yourself.

Let's say our session starts with the first spin (the first raindrop) and we pick six numbers (stones) to see if they would get hit by the ball (a raindrop) or not.

The probability chance for the first drop landing on one of our six stones would be 16.21 %.

If we picked the same six stones (numbers) and waited for the second drop, then the chance would be 29.80 %, that one of our previously chosen stones would be hit.

On the 25th raindrop we already would have 98.80 % probability that one of our adjacent stones would have been hit at least once.

✘ **Never change your numbers once you picked them until you have a show.**

This actually means the longer it rains, the higher the probability that one of the six stones that we have chosen would be hit by a raindrop. So, why choose other stones in the process?

✘ **Be patient, be consistent.**

What is the difference if we pick six stones that are not adjoined to each other of being hit? Well, a mathematician who doesn't overlook the complete process, would tell you that the probability is the same and this is where I take a different approach.

Let me explain by returning to the metaphor of the rain: have you ever seen it raining while six stones adjoined to each other would not be hit at least once, while other stones asides of it would be getting soaked?

We do not know for certain when one of our six pavement stones (our six numbers) will be hit, but we know the longer it rains (the more balls the machine spits out), the higher the probability becomes that one of our six adjoining numbers will be hit at least once.

And this is what we are after: only one hit on our stones is enough to make a profit or breakeven.

What if we were to pick only one stone?

The probability for the first drop landing on our stone would be 2.7 %
On the second drop 5.3 %. On the twenty-fifth spin 49.58 %

What this tells us is if you bet on a single stone to get wet, you might have to wait for a very long time.

On the probability calculator which I referred to earlier, compare the percentages between one of six numbers coming in (if you play consistently the same numbers) or if you would only choose one number. The difference is astonishing.

In the worst case your single stone might not even get wet at all while you are sitting at the table. It would take 150 raindrops (spins) to make the probability 98.35 % that your single number would show.

It only takes 25 drops for 98.80 % probability for one of six stones to get wet.

✘ **Never play less than six numbers.**

Now, here is the problem: we could choose six numbers the moment we rush in, but when we rely on probability theory, we know that it could take more than 25 spins for a 98.80 % probability of a hit, It will take 5 spins before we have 50.72 % security (just over half) that our stones would get hit.

In fact this would be a pretty risky bet, and you would have to spend $5 * 6$ chips to get just over 50 % security that one of your stones will get hit.

This means we will have invested already a lot of money and we can never be sure when one of our numbers will show up: could be soon, could be late, who knows. Only thing that is sure is that it will cost us a lot of money if it takes a long time (or a very large bankroll to play the progression that would be needed to cover our expenses).

✘ A professional player will never take risk which he cannot afford to lose.

Now, here's an idea: we will wait, see how the pavement is filling up with water, then bet that sometime soon one of the dry places will get hit by the rain. And we will bet that it will be one of at least six stones that are adjoined to each other to even further increase our chances, because we overlook the whole process of the rain coming in.

It only needs to get hit once, and we will make a profit. But the problem remains: the moment we start playing it, it could take a very short while and mostly this is the case, or it could be longer. In the latter case we need our reserve bankroll to back it up. However after 45 spins (we only invested in 20 spins, since we only started at the 26th spin) the chance for one of our numbers being hit is an astonishing 99.96515 %.

Now, this is what I call a risk calculated bet. It's a risk, because the probability is not 100 %, but the chance that you'll hit it at least once (that's all we need) is in favour of the player.

In fact in all the sessions I played personally from the Hamburg spins I never saw a section of six numbers adjoined to each other not showing up within 55 spins. However, the risk, however small it is, remains. Those tiny probability percentages not included (in this case 0.03485 %) can still include several spins which our bankroll might not be able to cover.

5.3 Determining the entry points

5.3.1 The first probability formula

We already have discussed why we will choose 'sleepers' (this is the common word used in gamblers talk to describe numbers which have not shown up yet). The longer our adjoined numbers sleep, the higher probability rises that one of them will suddenly awaken. Once again: in our case only one of at least six sleepers need to awaken just once. That's right: only once and we will have a profit or break-even depending on the money management you chose.

We have also seen why we choose to observe the position of the numbers on the wheel itself, not as they are placed on the betting diagram.

Now we should choose an **entry point** (= the moment we start to bet), that takes into consideration the probability factor, but also the amount of our bankroll and the amount of time we can spend at the table.

This entry point can differ, because not everyone has the same amount of bankroll they wish to risk. The lower your bankroll the higher your entry point should be and vice versa.

✘ **Setting the entry point too low can wear out even your highest of bankroll in no time.**

How can we come up with a formula for an entry point that sets our probability percentage of getting it right as high as possible, and the opportunity may still be there of seeing such an event.

It's a difficult question because each session we observe the pattern will be different of the wheel filling up. But the basic principal always stays the same: eventually all stones will get wet.

Check out this formula, I've come up with myself to easily calculate your best probability chances for deciding when it's the best moment to start betting.

John Solitude's Wheel Frequency Analysis The first probability formula (medium risk version)

1. Amount of numbers on the table (37 on a French roulette table) (38 on an American roulette table)
2. Divided by the amount of stones AJOINED to each other (I will refer to adjoined as 'neighbours' in the future)
3. Multiplied by the variable four.

Maybe your are already pinching your front head, so let me explain:

1. First we need the total amount of numbers that are on the table, this is easy (it will always be 37 or 38 numbers).

2. We divide by the amount of adjoining numbers that we are going to play (for instance 8 adjoining numbers).

The figure you will become as such is $37/8 = 4.625$ which is the arithmetic mean or average that each section consisting of eight numbers, would get hit if the roulette table would throw out each ball perfectly balanced over all the sectors.

3. Now, we know for certain when it starts to rain, raindrops will not be evenly dispersed over the whole surface, but that this can take a while, so we must take this into account, if we want to reduce our risk that our numbers would not hit before our bankroll is vanished.

We do this by multiplying the average, in this case $4.625 * 4$ which makes 18.5. In this case you could start playing a section of 8 adjoining numbers only if they didn't hit in the last 18 consecutive spins. So, we start betting on the 19th spin and we will keep consistently betting only these numbers until we have a show or until you have exhausted your bankroll.

Why the variable four? People have been asking me this since I came up with it.

Well, here it is: if you multiply by the variable four, and now you would take your probability calculator to calculate the numbers out, which I referred to earlier on, you would see that the probability for one of 8 numbers to show on the 19th spin is 99.02 %.

Pretty impressive probability that your number will show up any time soon now, isn't it?

Well, let's face it: there is still 0.98 % chance that it can still take some time, but that's why we need the bankroll, which I will explain later on. Although we can never say, that it will arrive on the next spin, we can only say that it will probably arrive soon.

See, this roulette machine is actually very stupid. It is confined to a circle consisting of 37 or 38 pockets and eventually over time all of those pockets will be hit. It can take very long for one pocket to be filled, but it will take much shorter time for let's say one of a sector of eight neighbouring pockets to be hit.

The machine doesn't think: hey, it's about time I throw a ball into this pocket, because these sections are overdue; no it isn't thinking at all, and that's where we come into the play with our brain. Just because the machine is plain stupid, it's time for you to think:

✘ When you are standing in the rain, would you bet that the eight pavement stones sitting next to each other will not get wet during the process, while it's pouring down?

Exactly: you would say that I would be an idiot to propose such a bet to you.

Now, if I say to you: hey, just bet right away which of the pavement stones is going to get wet, when it just starts raining (the moment you arrive at the table) and you have only felt some drops, and I will only pay you the same reward if you get it right for taking a higher risk: then what would you say? Well, that's exactly what you do when you dive in immediately upon arrival at the table.

✘ **Have patience and observe the rain coming down on all players who have no umbrella.
We will not dive in.**

What I am saying is: hey, if it's pouring, chances are increasing that one of the pavement stones I picked is going to get wet pretty soon, the longer it rains and you would be right and it would not be gambler's fallacy: probability theory and the law of large numbers will back you up, and mind you, the people who invented this theory more than two century's ago where some pretty intelligent people for which I take my hat off.

However, even these wise men are no fortune tellers: they cannot say exactly when one of our pavement stones will get hit, but they know that the probability is becoming extremely high and keeps increasing with every consecutive spins.

On the next page, ready to cut out, you'll find the aritmic means, the entry points and probability chances for single zero wheels. In case of double zero wheels add at least ONE to the entry point. This is the result of the 1st formula.

The entry points have been rounded to the nearest integer.

John Solitude's Wheel Frequency Analysis
The first probability formula table
(medium risk version)

Adjoining Numbers	Mean	Entry point 1 zero table	Probability
6	6.616	25	98.80 %
7	5.285	21	98.77 %
8	4.625	19	99.02 %
9	4.111	16	98.84 %
10	3.700	15	99.11 %
11	3.363	13	98.98 %
12	3.083	12	99.09 %

These probability percentages are already looking pretty good, but what bothers me, if we take the easiest integer multiplier (in this case 4) to arrive at the 99 % probability range, some probability percentages are still below 99 %.

Following is the table with corrected entry points, set for all reaching at least 99 % for the probability of a hit, the moment we start to play a certain sector.

John Solitude's Wheel Frequency Analysis
The second probability formula table
(medium risk version)

Adjoining Numbers	Entry point 1 zero table	Probability
6	27	99.15 %
7	22	99.00 %
8	19	99.02 %
9	17	99.12 %
10	15	99.11 %
11	14	99.28 %
12	12	99.09 %

Some of you have asked me about the probability percentages for sectors below 6 or above 12. Well, here they are, and they are all calculated out to start within at least 99 % chance of a hit.

- ✘ **Keep remembering the metaphor of the rain we used to explain the bet chosen: we chose to pick adjoined numbers or neighbours, not separated numbers, that's why I ALWAYS go for a sector of at very least 6 adjoining numbers.**

The numbers given below are for information purposes only, but they can give you a clear idea how long it can take for other amount of numbers, before they reach the 99 % probability figure.

John Solitude's Wheel Frequency Analysis
Min. 99 % probability threshold
(medium risk version)

Numbers	Entry point	Probability
1	169	99.02
2	83	99.00
3	55	99.04
4	41	99.08
5	32	99.03
6	27	99.15
7	22	99.00
8	19	99.02
9	17	99.12
10	15	99.11
11	14	99.28
12	12	99.09
13	11	99.14
14	10	99.13
15	9	99.07
16	9	99.38
17	8	99.27
18	7	99.05
19	7	99.35
20	6	99.05
21	6	99.34
22	6	99.55
23	5	99.22
24	5	99.46

5.3.2 The holy grail

In the previous formula, the main idea was to start out at 99 % probability of a hit, the moment we start betting. The previous formula and recommended entry points try to compromise between risk analysis and actually getting to play.

You can determine your own style of playing by reducing the entry points (increasing risk) or increasing the entry points (lowering risk).

Some players may find the time waiting annoying, but this is what it takes if you want to increase your chances on success. There is no other way, unless you would be psychic or would use illegal devices.

You may think: well, we have only one percent left to cover, that's easy, let's become millionaires right now and settle for a house on paradise island.

The truth is that the one percent that we still have to cover the moment we start betting, can still go a long way according to spins, but at least we have reduced our risk so far. You already have a good chance of hitting your qualified sector before your bankroll dries up, but what if we don't even want to risk that?

✘ **Let's say we want 100 % security of a hit according to probability theory.**

I strongly stress, before you would attempt a shot at the holy grail –if you would have the patience of a monk that is- that math is an abstract way to approach reality. Never the less, probability theory and math are the weapons that casino's use against players, so we'll use the very same tools to take a theoretical shot for the title as best as we can. Probability 100 % is a paradox in itself, but we can state with a fair amount of certainty, that it is highly unlikely you would be witness of such an event.

Casino monitoring software that would spot roulette outcomes going regularly over 100 % probability, would lead to a closing down of the table for maintenance, as then it could be decided that the table is biased. Actually the monitoring software would already alert before the 100 % is reached (for instance if a ball dropped far above the average in a certain sector compared to other sectors, and the 3rd standard deviation would be exceeded regularly the table would close down for maintenance if security is tight).

Never forget: the casino is using probability theory to decide on the game rules (the payouts) and the cut they want to take, so it's up to the player to also use probability theory as best as he can, to make his chance of success as high as is possible.

Let's say you would want to attempt this: you would need to stay day and night at the table, could be weeks, months or a year maybe, maintenance shouldn't come along to adjust the table or make a couple of test spins which you wouldn't be able to play, then if you see that for instance six numbers didn't come up for 100 times, get ready and make sure you've got enough money to back it up around 20 times just to make sure and throw everything you have at these six numbers. Hope before the wheel spins, the casino monitoring software (depending on the tolerance levels the casino chose) doesn't alert because if I were the owner of the casino the security would surely be blinking. In all the times I have played I never saw a section go over 100 % probability, that's why I state you have the best chances if

you delay as far as possible, then make your bet on the section which according to probability theory has over 99 % chance to drop.

That's it: there you have it, the mathematical holy grail for a single zero table. For a double zero table the entrypoints should even be higher, which is why beating a double zero wheel would be even more impractical. Take a deep breath, before you turn the page:

John Solitude's Wheel Frequency Analysis
 The holy grail
 (will theoretically beat every non biased single zero roulette wheel)

Numbers	Entry point	Probability
1	698	100
2	344	100
3	227	100
4	168	100
5	132	100
6	109	100
7	92	100
8	79	100
9	69	100
10	61	100
11	55	100
12	49	100
13	45	100
14	41	100
15	37	100
16	34	100
17	32	100
18	29	100
19	27	100
20	25	100
21	23	100
22	22	100
23	20	100
24	19	100
25	17	100
26	16	100
27	15	100
28	14	100
29	13	100
30	12	100
31	11	100
32	10	100
33	9	100
34	8	100
35	7	100
36	6	100
37	1	100

And don't forget: if you would back up 37 numbers you would actually make a loss.

Payout for the number you would surely get is: $1 * 36 = 36$ (payout) – 1 (the chip that you laid on the table which is actually your own money) = 35 credits gain, but you invested 37 credits of which 36 is returned = loss -1. So if 37 people were playing the table, and each picked a separate number, the casino would have won 1 chip no matter what the outcome. 38 people picking a separate number on a double zero table, leaves the casino 2 chips of profit in each spin.

Back up 36 numbers on a one zero wheel and you would break even (that is if the number that comes out isn't the one you didn't backup).

Now we know the figures, have determined the risk factor we want to take, the next step is money management.

We can never fully overcome the dishonesty of the game (your reward for taking a risk –the payout- will always be lower than the risk itself), however we can use probability to design the most logical and reasonable bet possible.

The professional player doesn't go for a 'hunch', he follows his fully worked out plan to the letter and does not divert from it whenever he is at the casino.

As important as the method you decide to use, is the money management.

Do not walk into the casino, before you've done your homework. I always carry little sheets with me which tells me exactly how much to bet in which stage of the strategy I've decided to use for that given moment. I work like an accountant when I'm at the table. You must see each bet as a risk involved enterprise: when the risk is high you do not invest, when the risk is low you invest. The first road may bring you a short run of luck, the second version is for players who have decided to invest wisely on a risk involving activity which gambling will always remain.

If you decide to use the 99 % probability threshold version (the one which I play myself) because of its optimum balance between getting to play and reducing the risk, I've worked out the money management of the deal.

There can be different approaches according to your playing style:

1. Some players who tried out my method choose to flat bet as long as they can, then go into a mild progression when there is no hit during the flat betting stage. The progression will be cut off, when they reach their maximum loss for the session. The mild progression is just enough to allow a small win on a hit, and to stretch playing the same sector numbers as long the maximum loss isn't reached. This is a **medium risk** approach if you set a maximum loss for the progression.
2. Others go for a more aggressive attack: these players flat bet first as long as they can, then increase the stake with one credit on each progressive spin because the probability is increasing that the sector will be hit on each consecutive spin. On a hit, the amount gained is higher than the first approach, but it involves **higher risk**. Your bankroll will dry up more rapidly, and in the strategy we are following, it's best to stick in there as long as we can, meaning the longer you play the imbalanced sector, the higher probability becomes that you will have a hit.
3. The most conservative players, choose to set the entrypoints even higher than 99 % and then go for flat bets only. If they don't get it with flat bets: they keep on flat betting with a loss or drop playing the sector all together. This is the **lowest risk** approach.

✘ **Work out your personal preferred money management before you enter a casino: a more risky money management is better than no money management at all.**

I myself use a 500 credits bankroll: why not higher you might ask?

If you look at the 99 % probability entry points and you compare these to the holy grail, you will notice that the 1 % we do not cover can represent a whole lot of spins a 500 bankroll cannot cover.

But, here is the good news: the bad streaks in there only represent a very small percentage (less than 1 %) of all mathematical patterns. And if you are playing at the far end of standard deviation as we do, with our 99 % threshold entry point, the bad streaks are statistically decreasing dramatically.

So, probability chances are good you will not experience such a bad streak while you are at the table, and if you would be on that bad streak it is better to cut your losses at 500, than to blow away all your savings on one bad streak that goes beyond the 3rd standard deviation (99.73 %).

This way your gain, can compete with the loss of a bad session. As said before, no one can predict when the bad streak may arrive: could be the first time you are on the table, could take weeks, even months before you see it. In case it take weeks or months before you see your first bad streak, the gain of the positive sessions will be enough to cover for a bad streak if you cut your losses in time.

✘ **Set a maximum bankroll loss for one session, do not be tempted to cross this line.**

If you however increase the bankroll and you are on a bad streak, and you are no longer able to progress due to bankruptcy or table limits, you'll need a whole lot of positive streaks to recover.

To cover the holy grail (see the table in the previous chapter), let's say we would see a sector of 6 adjoining numbers, and we would decide to put the entry point at 80, you would certainly have to cover six numbers for 29 spins at least (better to add a safety margin, even when probability is mathematically 100 % that you'll get it on a single zero table). You would have to spend a whole lot of time tracking one table in the casino from opening till closing hours, day in day out, could be weeks, could be months.

Another problem you have to face is that the risk increases the longer you play: remember what can mathematically happen, will eventually happen (a bad streak).

When all streaks you play are positive and you reach your wingoal for that day: get out, because you have tempted the house edge with an insufficient bankroll and got away with it.

✘ **Better to leave when your realistic win goal has been reached, than to wait for bad luck to happen.**

If probability theory dictates that it can take up to 109 spins on a single zero table before one of six numbers would be hit, you may be sure that this streak –however astronomically small the chance is- is in there.

✘ **What can happen, will happen. So, the longer you are at the table, the longer you are exposed to risk and tempting your luck.**

Professional players ALWAYS set a maximum win goal for a given session. The higher you set the win goal, the longer you are exposed to the house edge, and the higher probability becomes that you will meet a bad streak.

✘ **The lower the amount of spins you play, the lesser you are exposed to the house edge, that's why we choose to invest when the time is right.**

That's why when you reach your win goal your first objective should be to look for the exit. You will come out with a glorious feeling, because you left with more than you came in with and you actually expand your bankroll reserves.

✘ **Set a realistic win goal for one session and leave the building when you've reached it with a victory grin on your face**

I myself use a maximum win goal of 1/5 to 1/4 of my initial bankroll. Nothing spectacular but it adds up, having experienced 54 winning sessions in a row.

Also, the longer you are in the casino environment, the worse your concentration will be and the more you will feel tempted to increase your risk to win more, or in the bad scenario to recover your loss, in which most cases you'll lose even more.

On the following page, the amount of credits you need to cover sectors between 6 and 12 numbers, if you play them straight 'en plein' (on the number itself).

Before you start scratching your head: this is the way you should look at the table:

First column	S	=	The number of the spin you start betting
Second column	B	=	The amount of chips to bet on EACH of the numbers in your section (so if it says 1 and you would be playing a section of 6 numbers, you put 1 chip on each of the 6 numbers)
Third column	-	=	The amount of chips in total you have lost at this stage
Fourth column	+	=	The net amount of chips you'll win in the ball drops in the section you are playing
Green color		=	Indicates only flat betting strategy
Yellow color		=	Indicates all bets that are possible for a 500 credits bankroll

Some members asked me to include the progression for higher bankrolls. I've done this up to a 5500 credits bankroll. It is true that probability increases the longer you keep playing the same numbers, but even with the 99 % threshold entry points there are still some bad streaks, a 5500 bankroll won't cover.

If you would want to play **the holy grail streak** (probability = 100 %) you must look at the 100 % entry point in the previous chapter (for instance for a section of 6 this would be 109 non shows) and deduct the number of spins which you would be able to cover with your bankroll.

Let's say you would have a **bankroll of 500 credits** and you would be playing a section of 6 adjoining numbers, you could start betting at the 109 non shows (100 % probability for a show of a section of 6 on a one zero table) – 18 spins (because this is what a bankroll of 500 would cover) = entry point holy grail = 109-18 = 91 non shows. It would be better to add a safety margin to this, because as stated before this refers to a mathematically perfect world. Chances would be astronomically small you wouldn't get it.

Let's say you would have a **bankroll of 5000 credits** and you would be playing a section of 7 adjoining numbers, you should start betting at the 92 non shows (100 % probability for a show of a section of 7 on a one zero table) – 26 spins (this is what a bankroll of 5000 credits would cover) = entry point holy grail = 92 – 26 = 66 non shows. Same remark as before.

S	SECTOR 6			SECTOR 7			SECTOR 8			SECTOR 9			SECTOR 10			SECTOR 11			SECTOR 12		
	B	-	+	B	-	+	B	-	+	B	-	+	B	-	+	B	-	+	B	-	+
1	1	6	30	1	7	29	1	8	28	1	9	27	1	10	26	1	11	25	1	12	24
2	1	12	24	1	14	22	1	16	20	1	18	18	1	20	16	1	22	14	1	24	12
3	1	18	18	1	21	15	1	24	12	1	27	9	1	30	6	1	33	3	2	48	24
4	1	24	12	1	28	8	1	32	4	2	45	27	2	50	22	2	55	17	3	84	24
5	1	30	6	1	35	1	2	48	24	2	63	9	2	70	2	3	88	20	4	132	12
6	2	42	30	2	49	23	2	64	8	3	90	18	3	100	8	4	132	12	6	204	12
7	2	54	18	2	63	9	3	88	20	4	126	18	4	140	4	6	198	18	9	312	12
8	2	66	6	3	84	24	4	120	24	5	171	9	6	200	16	8	286	2	14	480	24
9	3	84	24	3	105	3	5	160	20	7	234	18	8	280	8	12	418	14	21	732	24
10	3	102	6	4	133	11	6	208	8	9	315	9	11	390	6	17	605	7	31	1104	12
11	4	126	18	5	168	12	8	272	16	12	423	9	16	550	26	25	880	20	47	1668	24
12	5	156	24	6	210	6	10	352	8	16	567	9	22	770	22	36	1276	20	70	2508	12
13	6	192	24	8	266	22	13	456	12	22	765	27	30	1070	10	52	1848	24	105	3768	12
14	7	234	18	10	336	24	17	592	20	29	1026	18	42	1490	22	74	2662	2	158	5664	24
15	8	282	6	12	420	12	22	768	24	39	1377	27	58	2070	18	107	3839	13			
16	10	342	18	15	525	15	28	992	16	52	1845	27	80	2870	10	154	5533	11			
17	12	414	18	19	658	26	36	1280	16	69	2466	18	111	3980	16						
18	14	498	6	23	819	9	46	1648	8	92	3294	18	154	5520	24						
19	17	600	12	29	1022	22	59	2120	4	123	4401	27									
20	21	726	30	36	1274	22	76	2728	8	164	5877	27									
21	25	876	24	44	1582	2	98	3512	16												
22	30	1056	24	55	1967	13	126	4520	16												
23	36	1272	24	68	2443	5	162	5816	16												
24	43	1530	18	85	3038	22															
25	52	1842	30	105	3773	7															
26	62	2214	18	131	4690	26															
27	74	2658	6	162	5824	8															
28	89	3192	12																		
29	107	3834	18																		
30	128	4602	6																		
31	154	5526	18																		

Important remark:

As you can see for yourself in the table, when you start out from the basic idea you want to risk a maximum bankroll of 500 in one session, the amount of spins we can play differs from sector to sector. However, according to probability theory the difference in percentages is only small, if you would be playing a sector of 6 for 18 spins, or a sector of 11 for 9 spins. In the first case your chance is 6/37 for 18 spins, in the latter case it's 11/37 for 9 spins. You can see the effect on probability percentages for yourself in the table below.

- S = Sector amount of numbers
- E = Entry point for min 99 % probability of a hit
- Sp = Spin amount you can play for your bankroll
- T = Total: this is the amount of spins we did not play + the amount of spins we can play with our bankroll
- B = Bankroll we need for the amount of spins we will play
- AP = Accumulated probability (the probability for a hit if we count out the probability for the non played spins + the amount of spins we will play)

John Solitude's Wheel Frequency Analysis Accumulated probability table

S	E	Sp	T	B	AP
6	27	18	44	498	99,95 %
7	22	16	37	420	99,95 %
8	19	13	31	456	99,94 %
9	17	11	27	423	99,94 %
10	15	10	24	390	99,94 %
11	14	9	22	418	99,95 %
12	12	8	19	480	99,94 %

The problem is: when you count the amount of spins you can play (and you want to keep the bankroll below or equal to 500 credits), the probability percentages for a hit within our bankroll differ from sector to sector. The difference may seem small in percentages but the percentages that are not included can represent a whole lot of spins. So it's up to you to decide if you find it a better strategy to stick to the 500 credits bankroll for four sessions, or let's say only play one session a month in which case you would decide to risk a larger bankroll to get the probability percentages up as high as possible. **In my experience playing less but with more credits for one session is a good idea, as your exposure to the house edge is kept minimal due to the minimal amount of spins played, but with a higher chance of success to beat the standard deviation of the outcomes.** The longer you are at the table the higher the possibility rises that an unfavorable pattern will happen. Even more, this unfavorable pattern might happen the first time you decide to play this method: it would be unlucky but as you can see for yourself it is possible. The probability of success is high, but it is not waterproof when using 99 % entry points. So you still may encounter a session loss that might be expected.

To mathematically avoid risk, entry points should be set up to 100 %, then deduct the amount of spins you can play within your bankroll, and check if the table limits allow this. Even then a safety margin should be added as we do not live in a mathematically perfect world, so you should set your amount of success as high as possible.

I refer to Chapter 5 in which I covered a first observation exercise, to demonstrate the phenomenon which we are going to exploit.

In practice and in real play, you'll notice that there are all kinds of different possible scenarios. No session will be the same, but the underlying principal is similar: you decide to take a risk in order to win some money and we want to approach this goal as best as we can.

Some practical questions which were raised by players who have been practicing this system or played it for real are:

- ✘ during a session there is a gap of seven numbers and one of eight numbers, which one should I chose?
- ✘ there are two sections which qualify which have the same amount of numbers, which one should I go for?
- ✘ there is a section of twelve which I have been playing and it dropped only very late, should I risk playing it again?

The experienced player who regularly practices his skill to determine risk analysis (for instance in Roulette Xtreme as I do), will do better when it comes to evaluating certain practical situations in real play. You will develop a feel for a realistic probability analysis in which you feel comfortable (because you've evaluated and trained yourself doing it at home), which is necessary before you decide to risk your cash. Confrontation with the risk you are facing and realistic expectations are keys to developing a more strategic playing style.

- ✘ **It's the combination of theory and an increased practical skill of applying probability theory on the fly, that's crucial if you want to increase your edge by playing the most logical bet.**

The method described here is one of my most successful methods to beat the table, but when playing for real I combine it with a lot of different methods to acheive the win goal in the least amount of played spins possible. However, I usually have to wait for many spins before the best moment arrives. The longer you play (meaning chips are on the table) the longer you are exposed to the risk.

All methods which I use are always fully embedded in probability theory, so I never go for a 'feeling' or an emotional bet. Every bet I make, any attack point, any decision according to the money management have been calculated upfront at home, so I'm fully aware ahead of the risk which I'll be facing. Although the casino bystanders might think that I'm going for a hunch, I have always calculated the risk, then decide if the risk is worth it or not. As with any game you should not enter the premises unprepared, especially if you are facing such a fierce contender as the casino.

In short these are some practical answers, which I apply to myself in order to make a decision, which I'll demonstrate later on with some screenshots of the Roulette Xtreme frequency wheel analysis.

Questions and answers:

Q: There are two gaps, one of seven numbers, and one of eight numbers: which one should I choose? Both sectors qualify according to the entry point.

Look at the surrounding neighbouring numbers of the section that qualifies according to the entry point. For instance the section of seven numbers which qualifies has four shows of the nearest neighbouring numbers, the section of eight numbers has two shows of the nearest neighbouring numbers.

Always go for a section which qualifies for the entry point and has the least amount of shows in the neighbouring numbers. This increases the imbalance of this part of the wheel, adding to the probability percentages that some part of this section will be hit soon.

Q: The sector I play has not hit, only the neighbouring numbers have been hit several times. Should I continue playing the section and increase the stake or the progression?

I wouldn't go into progression because I had the misfortune that the ball landed several times right next to the sector I'm playing. Although the ball did not land in our sector, this is decreasing the imbalance of the sector indirectly. Especially when this happens while you are playing on smaller sections (6 or 7 neighbouring numbers) it's recommended to choose continuing flat betting with a loss.

On the other hand if you are playing a relatively large section (10,11 or 12 neighbouring numbers) and the ball is landing far away from our section on each spin, I would go for a mild progression.

Q: The sector I play has been hit but it only brought a small win, should I play it immediately again?

I only decide to play the same section again if the imbalance is very severe. Let's say you were playing a section of twelve numbers, and only one number dropped in the course of 37 spins. Yes, I would play it again because here the imbalance is quite severe. The probability of streaks going beyond the 99 % standard deviation & happening back to back is extremely remote but it can happen. Still the risk is small. Always determine your bet choice according to the risk: high risk = do not play, low risk = play. But always remember that low risk can also go wrong unless you decided to go for the holy grail entry points (see earlier chapter).

On the other hand if it was only a section of six, and only one number showed up in the course of 37 spins, I would first evaluate if there is no other section that qualifies.

Q: Do you prefer smaller or larger sections?

According to probability theory and the bankroll we have it does make little difference if you play a small section for a long amount of time (we can play it longer because a bankroll of 500 will allow it), or a large section for a smaller amount of time (in this case our probability chances are higher on each spin). If in doubt I prefer to play larger sections because of the higher probability on each spin, and when I reach my wingoal using the least amount of spins that need to be played my exposure to the game is minimal.

When I go, I go for profit, not for entertainment and I have a drink elsewhere. This is the main difference between a professional and a entertainment player: the first one plays for profit, that is his only goal (apart from busting the system), for entertainment he will go elsewhere. When the professional is playing: it's as intensive as doing a job, he can not allow himself to be distracted at any time.

Q: In the course of playing a section, some neighbouring numbers also qualify to be added to the sector I'm playing, should I add them or not?

Suppose I have chosen a sector that qualifies and also the next neighbouring numbers qualify to be added to the sector after I started betting, I add them but then you have to recalculate the money management on the fly for a profitable hit. It's not advisable to do this when have you just started practicing the method.

Q: Two sectors qualify at the same time, should I play both of them at once?

Yes: your probability chances would be high on each spin (let's say there is a section of eight and seven on the same time which qualify then your probability on a one zero table would be 15/37 on each spin and increasing on every consecutive spin. The moment one of your sections hits, leave it away and continue on the other one, starting out again as a flat bet. If the money management was right you already made a profit from the first section hit, so it's better to reduce the risk by starting out again with a flat bet.

Q: I didn't see the correct entry point for hours, but now there are some gaps which are less than 6 numbers, but if I add all the gaps together, they add up to six numbers. Should I play these?

Remember the rain metaphor which we used in a previous chapter, to explain the strategy. Mathematicians would say that there is no difference in playing six sleepers, or playing six sleepers that are adjoined to each other into a sector.

The problem with mathematics is, that numbers are approached in an abstract way as if these numbers were floating in empty space. Most mathematicians will not take into account the fact that the numbers are placed into a circle, so wheel distribution is often an overlooked but crucial part of the game.

Casino's monitoring security software analyses wheel distribution in a relationship with the positioning of the numbers on the wheel, as you could see in a previous chapter on the screenshot of the Huxley monitoring software.

If irregular wheel distribution exceeded 100 %, probability bias would be detected.

It is this very phenomenon that we will take advantage of. Due to the increased in technology, roulette wheels will become more random, but because roulette is restricted to 37 or 38 pockets and wheel distribution will be relatively balanced, if you split the wheel up into sectors which are showing gaps during a longer period of time, your best chance is to go for this gap. Don't go for sleepers which sit in a section that already appeared a lot: you could say that these so called 'sleepers' have already been hit indirectly and as such are not sleepers at all. When you would have analysed only the betting diagram outcomes these numbers seem to be not hit, but in fact the ball would have dropped into this sector many times. That's why we also do not play for single numbers, but for adjoined numbers.

The wheel does not have memory where it dropped the balls, but because this roulette wheel is a balanced machine, in the long run the different parts of the wheel will be hit in a relative balance. It might not always hit before your bankroll is dry (depending on the amount of your bankroll and the entry point that you have chosen), but you have a very good chance that it will.

Q: Can I combine the numbers of the qualifying sectors into carre's, double lines, lines or other betting combinations?

YES, and this is a good idea to further decrease your risk. Especially if you are playing for a relatively low bank account, it's always a good idea to spread your chances.

Let's say there are 8 numbers in our section. Now look at which numbers are bordering these numbers on the betting diagram.

Then choose for bordering numbers which have the least appearances or numbers that sit in sectors which had appeared below the average. So for instance you could be playing 8 couples (cheval in French), of which 8 numbers have been picked because they sit in a sector that qualifies, and the 8 bordering numbers are numbers that sit in the least appeared sectors.

Use any combination as long as the main numbers you picked are adjoined on the wheel in a sector which is under balanced. Of course you should work out the money management on your type of preferred combinations BEFORE you enter the casino.

Q: How do I keep track of the wheel distribution in real play

There are two possibilities according to your taste.

On the next pages you'll find:

1. A horizontal graph which depicts the numbers as found on a single zero table.
2. The other possibility is using a circle graph.

I prefer the latter because it is exactly as the wheel, others find the linear approach easier. It's just a matter of choice in the end. When you arrive at the table you just mark the number of the spin next to the number in the graph. For instance, if the outcome of the first spin you see is number 26, you mark number 1 next to number 26. On the second spin number 13 shows up, you mark number 2 next to number 13 on the graph. This way you have a visual reference according to the wheel distribution. Be precise and practice the routine at home, so you will feel comfortable with it at a real table later. When you see a serious gap appearing, evaluate if it is coming close to the entry points. What is the situation in the neighbouring numbers of the section: did they already drop a lot (this decreases the imbalance) or did all previous spins hit far away from the section that you intend to play (this increases the imbalance)? Then decide if you will go for it or not.

Print out the graphs and take them with you in real play, they can be used as a reference for the 99 % threshold entry points. Also print out the money management table or make one up yourself if you would

decide to place combination bets instead of playing the straight up numbers in a section after qualifying the entry point.

Q: How can I work out my own preferred money management?

You need four columns.

The first one is the bet amount (if you are playing sectors this is the amount of chips you will invest per number). The second one is the total amount of chips invested on this spin. The third one is the sum of all spins until now (just add up all the chips of the second column). This third column is your loss (what you invested until now). The fourth column is the gain or the profit if one of your numbers would show up on this spin (see example below).

Let's say we play a sector of 8

In the first column you mark 1 (this means one credit on each of the numbers in our sector)

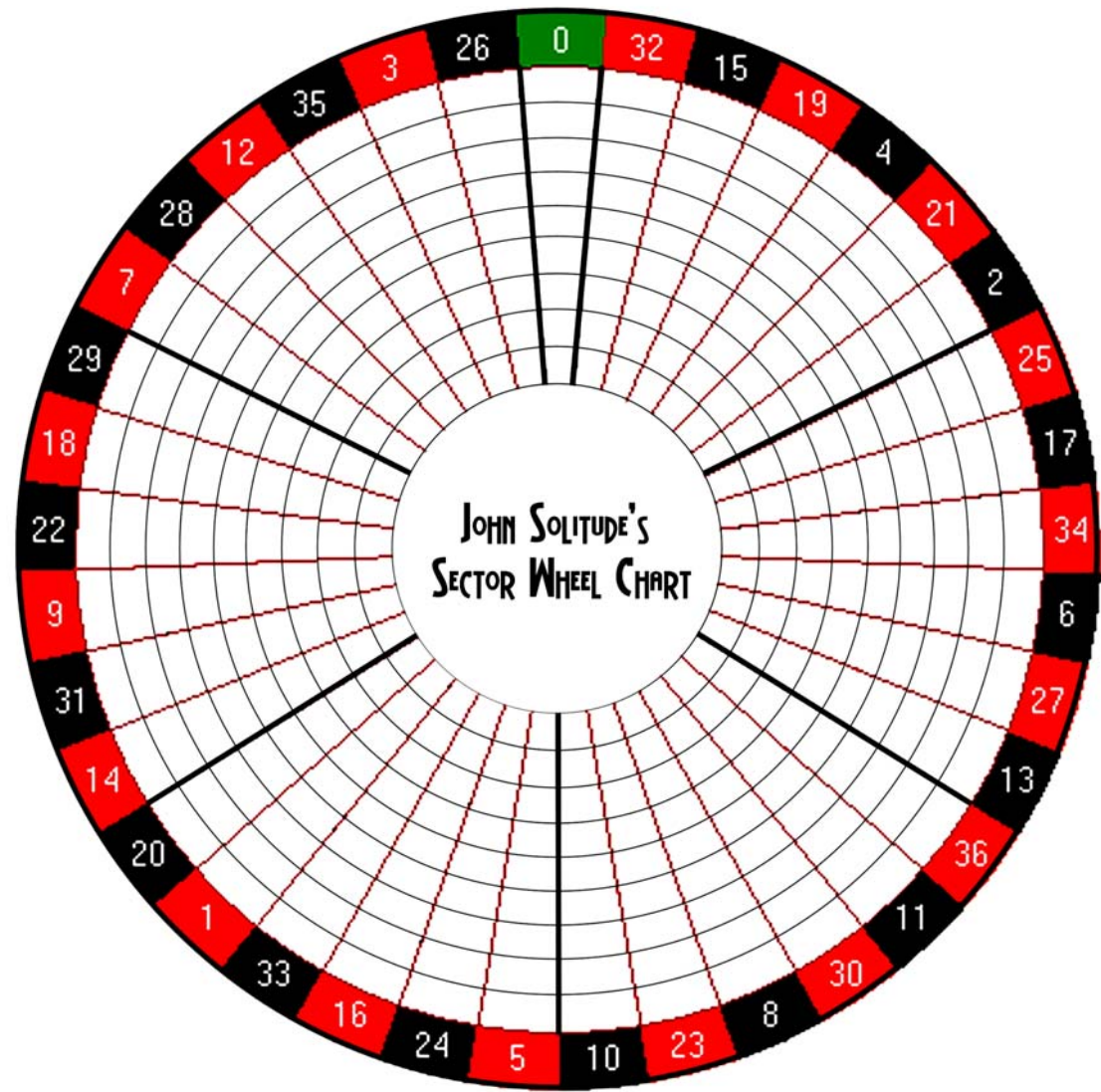
In the second column you mark 8 ($1 * 8 = 8$ because we are playing eight numbers)

In the third column the total amount of chips invested until now (8) (this is your total loss)

In the fourth column the gain or the profit which is calculated as follows

1. $1 * 36$ (because only one of our numbers in our sector can hit) = 36
2. $36 - 8$ (because you invested 8 credits)
3. the gain would be 28

Take the chart with you and once you begin using the strategy do not divert from your plan: this way you have a realistic view of how much you want to invest, what the possible loss or gain would be. If you do this on each visit, it will give you a far better idea how much you are losing or winning.

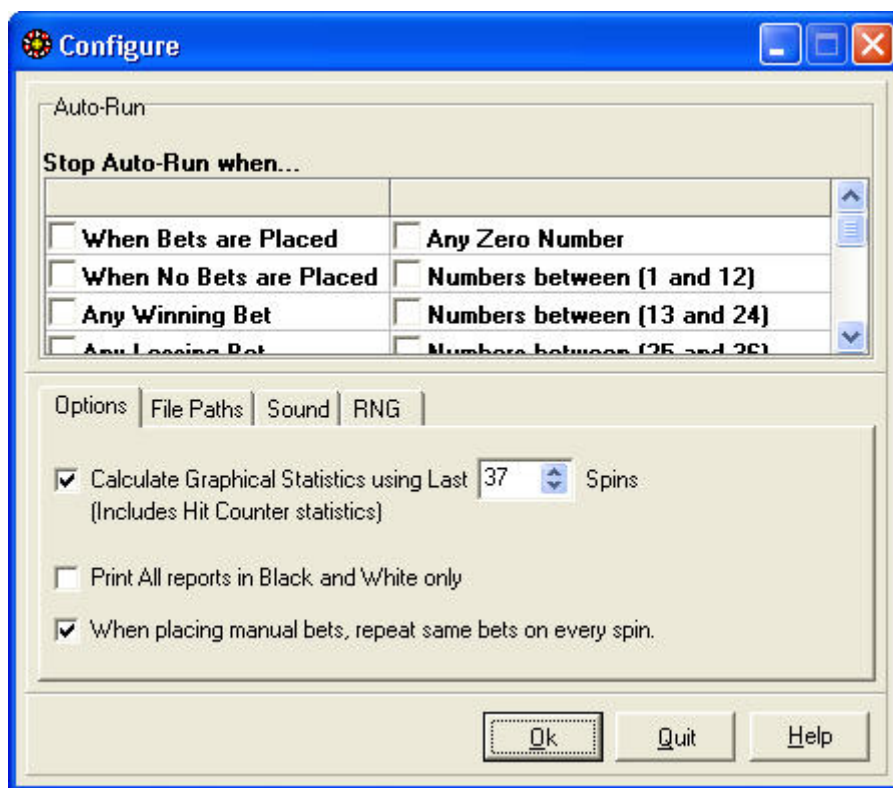


This is a session from the Hamburg Spins which I downloaded today (21/04/2005 table 1), and I will play it the usual way I would practice each day for about an hour.

To increase visibility of the wheel distribution, in Roulette Xtreme you can adjust the amount of spins that is shown on the Wheel Frequency Graphic, which make it's easier to judge which sectors are relatively cold. When starting out it's also better to note down the number of each spin on the wheel frequency graphic of the previous chapters so you develop a routine in reading the wheel distribution.

Setting up Roulette Xtreme for optimal view of wheel distribution:

1. Go to Options > Configure



2. Choose 'Calculate Graphical Statistics using last 37 spins'.

Along the way I'll use a combination of techniques explaining when and why I decide to take a bet. At this time, I do not know the numbers which are in this session, and of course you should not believe me based on my own words. I agree I could have manipulated the results to fool you or replay the session to get the best result possible.

So, that's why I offer to play together with each person who visits my country.

I like playing automated (but still mechanical) roulette tables, because I find these machines very practical because you can just push 'same bet', so errors are avoided when laying down or counting out the chips. And I can push the 'neighbours' bet, so I don't have to rush in to put chips all over the table.

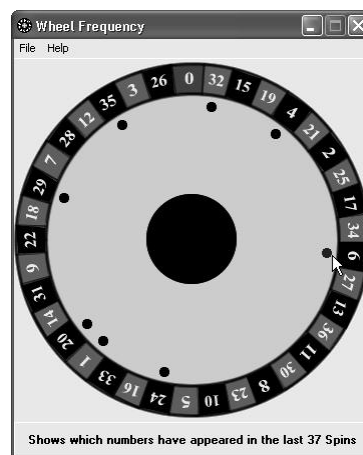
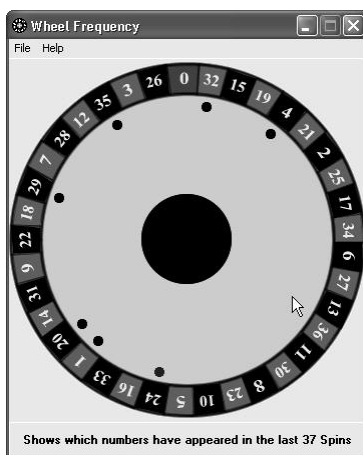
When you play you are exposed to risk, things can go wrong, no matter how much you are prepared, but this is the deal: if you reach your win goal while I'm in your company, you pay for the drinks afterwards 😊

So to continue: at this time I don't know which numbers that will show up, I'll take a screenshot each time before I make a bet, not knowing what will come up, and after the bet came up. I'm playing this session blind. (I'm not noting down the spin number on the wheel frequency graphic which I supplied in the previous chapter: something you should only attempt after lots of practice). I only have the Wheel Frequency Graphic in Roulette Xtreme to monitor the outcomes, which does not display the spin number on which a certain number was hit in the past.

As I'm not playing for money, I will take some risk, but when I would be playing for serious money, I would strictly stick to my 99 % threshold method. I'll even throw in a couple of variations of the main method explained along the way.

Are you ready, here we go (you can also download the full file yourself: this is the Hamburg spin file of 21/04/2005, table 1). I've reduced the screenshots to 50 % of their original size and in grey colors, to keep this manual size as compact as possible for distribution.

1. First opportunity presents itself at the 7th spin, there is a large gap of 15 numbers appearing. At this time I have a bankroll of 500 credits. According to the 99 % threshold entry point discussed in a previous chapter, I should only play it at the 9th spin. I decide to take the risk, because I'm not playing for money at this time, so I'm increasing the risk that it could turn out wrong. I'm betting on all numbers between 21 and 5.



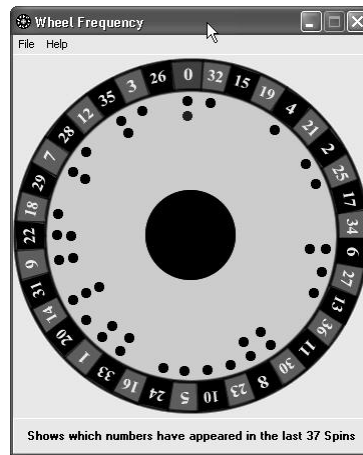
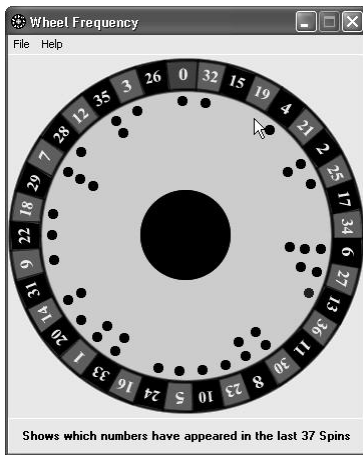
2. It turned out right, I had a probability of 15/37 to hit it on the eight spin, but if you calculate the probability percentages in total (15 numbers which did not appear yet, to hit on the eight spin) it was already up to 0.98437688 or 98.43 %. Let's be honest: it could have gone wrong too, in the worst case I could have blown my whole bankroll on this one, but a high probability at the time of entry increased my chances of getting it right.

Bankroll = 521

Let's observe further

- On the 44th spin, there is a sector appearing which contains 6 sleepers relatively close to each other. However I'll never play isolated sleepers, I always go for the complete sector in which the sleepers sit.

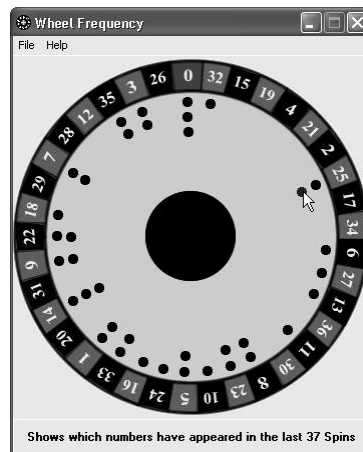
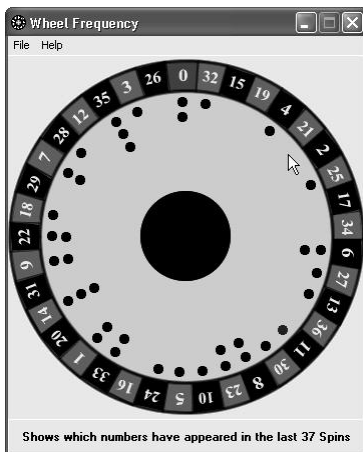
I'll play for the numbers 26 till 34 included (so also the numbers that did already fall into this sector): because of the higher risk I will flat bet as long as I can, at most I will continue with a mild progression.



- On the 48th spin, the sector came in hitting number 0. I flat betted as long as I can, because we took a relatively high risk and I only added the smallest possible progression. So I played 11 numbers, three flat bets and the fourth bet I increased to two chips per number.

Bankroll = 538

- On the 51st spin, I notice that the sector we played earlier still has 6 sleepers sitting in it. I go for it and play numbers 15 till 34 (8 numbers in total)



- On the 59th spin, our sector came in. Notice how the ball didn't fall in one of the sleeping numbers, but that it dropped on number 25 which already dropped!

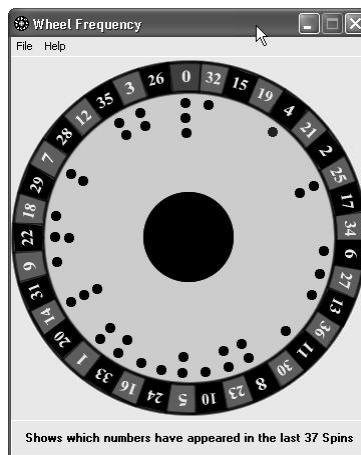
So if we would have decided to play only the sleepers in this sector and exclude the numbers in the sector that already arrived, it could have damaged my bankroll seriously.

Once again: analyse the wheel as a whole.

I played this progression for a section of eight numbers: 1-1-1-1-2-2-3

Bankroll = 562

7. Let's continue to play the sector in it's totality: it is already seriously outbalanced and it still contains 6 sleepers.



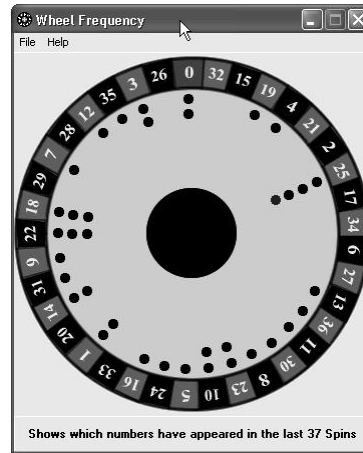
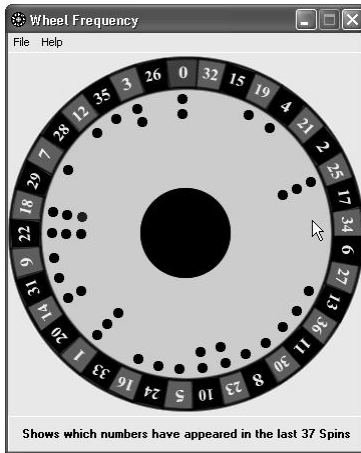
8. Bingo: there it is again on the next spin: number 4 came in of the same sector

Bankroll = 590

It may be tempting at this point to play the same sector again, but I will not go for it immediately, because now two balls dropped in the same area consecutively which is severely decreasing the probability chances it would happen right again. Of course there will be times you will see this happen (an unbalanced sector gets hit three times in a row, but on average this will not be the case).

Let's see how the situation evolves.

9. On the 73rd spin I decide to take another shot at the unbalanced sector. There are now eight sleepers in this section. I choose for numbers 32 till 27. (11 numbers)



10. On the 74th spin it came in: as you can clearly see it fell on number 25 (so if we only would have played the sleepers in this section, and left out the number that already appeared a lot – number 25-) we would have missed out.

Again this is a clear illustration you should try to visualise the wheel in it's totality. We picked this sector because in it's totality it's severely outbalanced according to the rest of the wheel.

Bankroll = 615 (win goal reached)

I have reached my win goal (= 1/5th of my bankroll) and I already observed 74 spins, so I decide to cash in and look for the exit.

I'm up + 115 credits for this day, now doesn't that feel good and at maximum I've could have lost 500 credits.

Lowest point was 450 credits and I left at my maximum peak of 615 credits.

✘ Leave at a peak

On the next page you'll find the full session I played exported from Roulette Xtreme into Word format. Look at the amount of bets – no bets.

By playing less, I have gained more. If I had played for each spin, I would surely have lost. If I would have rushed in without waiting for imbalance to occur: I would have lost because then I have no reference what so ever according to probability theory on which section to pick.

This session went relatively well, there are some sessions I'll sink deeper but fortunately I did not meet the negative session in the last 54 sessions which I played for money. Even when I encountered it, my bankroll of max 500 will now be enough to counter a loss. Was this lucky, or does my method offer an edge: practice, experiment, note down the outcomes of the test sessions you play in Roulette Xtreme then you decide. Always use outcomes of real tables, not RNG.

Hope you have enjoyed this little demonstration and may it help to increase your game based on probability analysis.

In the final chapter we'll have a look into several interesting literatures.

John Solitude's Demonstration Session / Hamburg Spielbank 21/04/2005 table 1
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Spin	No.	Type	Bet Unit	Win	Loss	Net	Unit Bal.	Bet Layout
							500	
1	35	No Bet	0	0	0	0	500	
2	1	No Bet	0	0	0	0	500	
3	4	No Bet	0	0	0	0	500	
4	29	No Bet	0	0	0	0	500	
5	20	No Bet	0	0	0	0	500	
6	32	No Bet	0	0	0	0	500	
7	24	No Bet	0	0	0	0	500	
8	6	Bet	15	36	-15	21	521	1 : 2,5,6,8,10 ,11,13,17, 21,23,25, 27,30,34, 36
9	27	No Bet	0	0	0	0	521	
10	7	No Bet	0	0	0	0	521	
11	2	No Bet	0	0	0	0	521	
12	20	No Bet	0	0	0	0	521	
13	2	No Bet	0	0	0	0	521	
14	30	No Bet	0	0	0	0	521	
15	24	No Bet	0	0	0	0	521	
16	28	No Bet	0	0	0	0	521	
17	4	No Bet	0	0	0	0	521	
18	6	No Bet	0	0	0	0	521	
19	1	No Bet	0	0	0	0	521	
20	35	No Bet	0	0	0	0	521	
21	23	No Bet	0	0	0	0	521	
22	30	No Bet	0	0	0	0	521	
23	9	No Bet	0	0	0	0	521	
24	6	No Bet	0	0	0	0	521	
25	7	No Bet	0	0	0	0	521	
26	14	No Bet	0	0	0	0	521	
27	32	No Bet	0	0	0	0	521	
28	27	No Bet	0	0	0	0	521	
29	14	No Bet	0	0	0	0	521	
30	33	No Bet	0	0	0	0	521	
31	0	No Bet	0	0	0	0	521	
32	22	No Bet	0	0	0	0	521	
33	33	No Bet	0	0	0	0	521	
34	35	No Bet	0	0	0	0	521	
35	8	No Bet	0	0	0	0	521	
36	5	No Bet	0	0	0	0	521	
37	1	No Bet	0	0	0	0	521	
38	10	No Bet	0	0	0	0	521	
39	18	No Bet	0	0	0	0	521	
40	25	No Bet	0	0	0	0	521	

41	3	No Bet	0	0	0	0	521	
42	7	No Bet	0	0	0	0	521	
43	8	No Bet	0	0	0	0	521	
44	13	No Bet	0	0	0	0	521	
45	9	Bet	11	0	-11	-11	510	1 : 2,4,15,17, 19,21,25, 26,32,34, 0
46	22	Bet	11	0	-11	-11	499	1 : 2,4,15,17, 19,21,25, 26,32,34, 0
47	14	Bet	11	0	-11	-11	488	1 : 2,4,15,17, 19,21,25, 26,32,34, 0
48	0	Bet	22	72	-22	50	538	2 : 2,4,15,17, 19,21,25, 26,32,34, 0
49	23	No Bet	0	0	0	0	538	
50	35	No Bet	0	0	0	0	538	
51	11	No Bet	0	0	0	0	538	
52	16	Bet	8	0	-8	-8	530	1 : 2,4,15,17, 19,21,25, 34
53	23	Bet	8	0	-8	-8	522	1 : 2,4,15,17, 19,21,25, 34
54	0	Bet	8	0	-8	-8	514	1 : 2,4,15,17, 19,21,25, 34
55	24	Bet	8	0	-8	-8	506	1 : 2,4,15,17, 19,21,25, 34
56	5	Bet	16	0	-16	-16	490	2 : 2,4,15,17, 19,21,25, 34
57	1	Bet	16	0	-16	-16	474	2 : 2,4,15,17, 19,21,25,

58	3	Bet	24	0	-24	-24	450	34 3 : 2,4,15,17, 19,21,25, 34
59	25	Bet	32	144	-32	112	562	4 : 2,4,15,17, 19,21,25, 34
60	4	Bet	8	36	-8	28	590	1 : 2,4,15,17, 19,21,25, 34
61	1	No Bet	0	0	0	0	590	
62	19	No Bet	0	0	0	0	590	
63	14	No Bet	0	0	0	0	590	
64	31	No Bet	0	0	0	0	590	
65	25	No Bet	0	0	0	0	590	
66	30	No Bet	0	0	0	0	590	
67	22	No Bet	0	0	0	0	590	
68	18	No Bet	0	0	0	0	590	
69	36	No Bet	0	0	0	0	590	
70	10	No Bet	0	0	0	0	590	
71	22	No Bet	0	0	0	0	590	
72	12	No Bet	0	0	0	0	590	
73	18	No Bet	0	0	0	0	590	
74	25	Bet	11	36	-11	25	615	1 : 2,4,6,15,1 7,19,21,2 5,27,32,3 4

CHAPTER IX: INTERESTING LITERATURE

Of course, all the knowledge I displayed along the way I didn't invent myself.

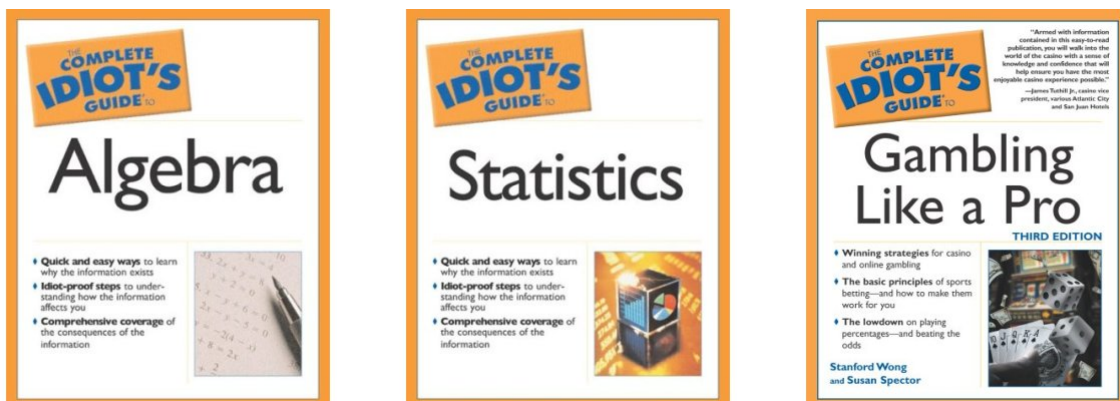
I only got creative using principals that are two centuries old and go back to the origins of the roulette wheel itself. The roulette wheel was originally developed as a random number generating machine for mathematical purposes, long before the computer area came in. Only in a later stage, it was turned into a gambling device which also brought the betting diagram which abstracted the positions of the numbers on the wheel to a linear diagram.

The betting diagram as now found in casinos is obviously misleading: the chronological nature of the betting diagram has no reference with the positioning of the numbers on the wheel itself, as such making any statistical analysis using the betting diagram is invalid.

Some members of the forums who contacted me admitted that math, algebra and statistics frighten the pants out of them, but if you find the right study books, even those who hate the above subjects which haunted them in formal education (it happened to me actually: I hated all things related to math when I was in high school, because the teacher was skilled in his area, but forgot how to explain complex subjects in a simple and attractive manner) could be intrigued by mathematics and statistics.

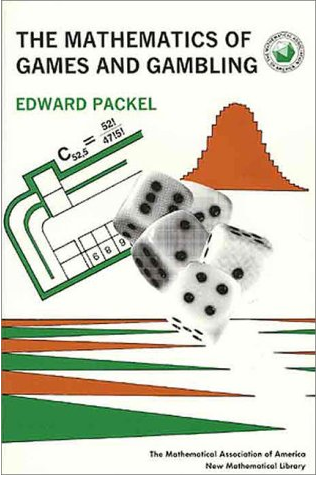
These are some books I can highly recommend for the novice player (in any risk involved game) or for serious players who wish to exploit probability as far as they can. The writing style of all books in the series 'The complete idiot's guide to' is informal and easy accessible, but never the less the didactic qualities are excellent. You are certainly not an idiot when you decide to buy such a book, the title only refers to the fact that no pre-knowledge is required. However if you want to engage in correctly applying statistics, it's recommendable that you have a knowledge of algebra.

Clicking the image will lead you to the Amazon site (which I'm not affiliated with, so I don't gain any money if you buy one of these books at Amazon or not, but in my experience they provide excellent and dependable service when ordering books online).

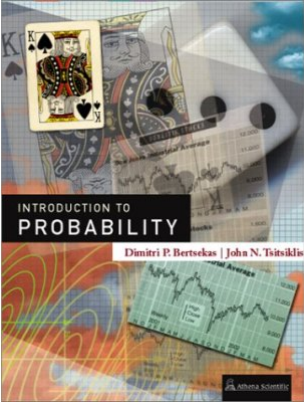


Especially the last book 'Gambling like a pro' is recommended for new players as it offers honest advice to increase your chances without promising unrealistic win goals.

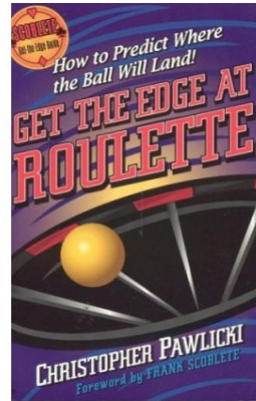
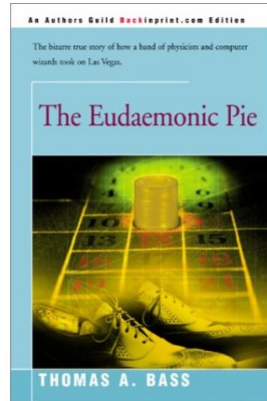
If you are in search for a general book which explains how mathematics, probability analysis and game theory are the base of each game, then the 'The mathematics of games and gambling' by Edward Packel should be on your shelf. It may not increase your luck, but it certainly will increase your knowledge of what you are up against in the most popular casino and home games. Basic knowledge of algebra is required.



If you already have a decent knowledge of the above subjects, the next one is highly recommended for more advanced reading (the two authors are professors at M.I.T., an American College, which in the past produced the legendary group of students who applied their knowledge to beat the game of Blackjack consistently).



All who are interested in the physics of the roulette wheel, or want to know more how math, physics and computers were used to gain an (illegal) edge in the roulette game, are recommended the following books. Although I must add, that these days it would be far more difficult to add these advantage techniques due to increased wheel surveillance and monitoring.



And finally, if you would decide that it's high time to switch to another game which offers better odds than roulette, why not look into Blackjack? This game that can be beaten consistently when one acquires the skill of card counting without being noticed, even on six deck card shoes cardcounting can still be used to the advantage of the player. Next book from Stanford Wong (professional Blackjack player) is a classic. Only interesting for players who are fluent in applying the basic strategy in Blackjack and which to expand there knowledge to a professional level.



CHAPTER X: SOME FINAL WORDS FROM THE AUTHOR

Writing this guide has been quite a challenge. During the process, many people which I mentioned or forgot to mention in the introduction supplied directly or indirectly to the content of this guide.

Although I took the initiative for developing and writing out this guide, the ideas contained within it are based on the inspiration and the experience of many players, including myself.

This guide is intended to be a first, not a final version. However all the statements that were made, and all the figures that were presented have undergone theoretical probability analysis (of which the basic concepts will never change), testing, practice in Roulette Xtreme using the Hamburg Spielbank spin files and finally real play, as well on automated tables or tables with a croupier.

Once again I strongly stress that this method sometimes will need human judgement on the fly according to probability- and risk analysis of the session at hand (see the frequently asked questions chapter), and practice is key for developing a routine in accurately screening and interpreting the outcomes according to probability and laying down the bets using your predetermined and money management.

The first edition of this guide will be sent out thru e-mail to more than 150 players worldwide. The guide is meant to be freely shared and distributed in its entire content. The advice of one chapter is worthless without the other. When quoting from or referring to this guide, please use the correct title: 'JS Wheel Frequency Analysis' by John Solitude, first electronic edition May 2005.

Contact the author:

Any suggestions, feedback, hybrid methods, variations, other types of money management, stories of success or failure should be sent to: john.solitude@telenet.be

If you have ideas you are willing to share on the behalf of players out there, let me know, and maybe your idea and your name can be in the next version. If you want to be informed, of any future versions or updates, please send an e-mail to john.solitude@telenet.be with the subject line **subscribe JS Wheel Frequency Analysis Updates**.

No spam will be accepted, only information concerning the further development of this guide. No spam will be send when you subscribe, only information relevant to the further development of this guide.

Wishing you all the best,

John Solitude

09-05-2005