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Roulette

Introduction

Roulette is one of the easiest games to play and understand in the casino. As usual the easier a game is to understand the greater the house edge, and roulette is no exception. If you are looking for a easy to understand and slow paced table game,

and are willing to sacrifice on the house edge, then you may like roulette. If you want something more stimulating or with a decent return I would suggest looking at other games.

One difference between roulette and all other table games is that roulette chips have no value denomination printed on them. This actually is the true definition of a chip, one which indicates its value is technically called a check. The roulette table comes with six to eight sets of different colored chips, each set consisting of 300 chips. When a player purchases chips he gets his own color and the value of each chip is the buy-in divided by the number of chips received. The dealer will place a token on top of the dealer's stack of that color of chips to indicate the value.

American Rules

A U.S. roulette wheel consists of 38 numbered slots: numbers 1 to 36, a zero, and a double zero. The betting layout consists of every individual number as well as a host of "outside" bets on combinations of numbers. After the players make their bets, the dealer spins the wheel and a ball and after several seconds the ball will land in one of the numbered slots.

The following table displays the available bets, the win (on a "to one" basis), and the probability of winning under U.S. rules. All casinos in the U.S. follow these rules except for in Atlantic City. The house edge on all bets is 1/19, or 5.26%, except for the 0-00-1-2-3 combination, which carries a house edge of 7.89%.

Double-Zero Roulette

BET	PAYS	PROBABILITY WIN	HOUSE EDGE
Red	1	47.37%	5.26%
Black	1	47.37%	5.26%
Odd	1	47.37%	5.26%
Even	1	47.37%	5.26%
1 to 18	1	47.37%	5.26%
19 to 36	1	47.37%	5.26%
1 to 12	2	31.58%	5.26%
13 to 24	2	31.58%	5.26%
25 to 36	2	31.58%	5.26%
Six line (6 numbers)	5	15.79%	5.26%
First five (5 numbers)	6	13.16%	7.89%
Corner (4 numbers)	8	10.53%	5.26%
Street (3 numbers)	11	7.89%	5.26%
Split (2 numbers)	17	5.26%	5.26%
Any one number	35	2.63%	5.26%

European Rules

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

What most call "European roulette" is roulette played on a 37-number wheel, with one zero only. The pays are the same as in American roulette. However, with one zero the house edge is cut to 1/37, or 2.70%, on all bets.

The term European roulette is somewhat of a misnomer because you can find single-zero roulette all over the world. In fact, it is the standard outside the United States. Even in the United States you can find single-zero roulette in some high-limit rooms.

Atlantic City Rules

In Atlantic City, any all even money bets (red, black, odd, even, 1-18, 19-36) follow a variation of the European half-back rule (see below). If the ball lands in 0 or 00, then the player will lose only half of any even money bet. This lowers the house edge to 2.63% on these bets. This rule does not apply on single zero wheels.

French Rules

French roulette is played on a single wheel and also features a favorable "en prison" or half-back rule. Under the "half-back" rule, if the player makes any even money bet (red, black, odd, even, 1-18, 19-36), and the ball lands in zero, then the player gets half the bet back, known as "la partage" in French.

The term French roulette is also somewhat of a misnomer because the "la partage" rule can sometimes be found in casinos outside of France, including some high-limit rooms in Las Vegas.

Rather than lose half, the player sometimes may also choose to imprison the bet. If an imprisoned bet wins on the next spin it is released and the player gets it back, without winnings. What is subject to casino rules is what happens to an imprisoned bet if the ball lands in zero again on the next spin. At some casinos the bet loses, and at others it would become double

imprisoned. If a double-imprisoned bet bet won on the next spin, it would move up a level, and become single-imprisoned again. If it lost, then it would become triple-imprisoned if the casino allowed it, otherwise it would lose.

The following table shows the probability of a win, push, and loss under every imprisonment variation I'm aware of.

Imprisonment Odds

IMPRISONMENT	WIN	PUSH	LOSS	EXPECTED VALUE
Single	0.48648649	0.01314828	0.50036523	-0.01387874
Double	0.48648649	0.01332346	0.50019005	-0.01370356
Triple	0.48648649	0.01332583	0.50018768	-0.01370120
Infinite	0.48648649	0.01332586	0.50018765	-0.01370117
French	0.48648649	0.01351351	0.50000000	-0.01351351

When given the choice to lose half or face imprisonment, the expected value is the same under French rules. Otherwise the expected loss is less losing half.

Sands Roulette

Sands Roulette is roulette played on a 39-number wheel — the usual 38 numbers on an American wheel plus a green S. The game premiered at the Venetian in Las Vegas in September, 2016.

Much like zero and double-zero, all even money bets lose if the ball lands in the S. The order of the numbers 1 to 36 is the same as in single-zero roulette. The 0, 00, and S are all consecutive, with the S in the middle.

The house edge on every bet is 1/13 or 7.69%. The minimum bet depends on such factors as the day and time of day but I'm told is about the same as double-zero wheels in the same pit. When I first saw the game on September 27, 2016 the minimum bet was \$15, and on a double-zero wheel nearby the minimum was \$10. Go figure.

Short Pays

I've noticed some electronic roulette games don't pay the full 35 to 1 on single-numbers bets, and/or 17 to 1 on double-number bets. Invariably, any game that short pays the player like this is going to be on a double-zero wheel as well. The following two tables show the house edge on single- and double-number bets, according to the win, assuming a double-zero wheel, and based on "to one" odds. Be careful that on electronic games wins are often given on a "for one" basis, meaning the original wager is not returned on a win. To convert a "for one" odds to "to one" odds, subtract one.

Single-Number Bets

WIN	HOUSE EDGE
-----	------------

35 to 1	5.26%
34 to 1	7.89%
33 to 1	10.53%
32 to 1	13.16%
31 to 1	15.79%
30 to 1	18.42%

Double-Number Bets

WIN	HOUSE EDGE
WIN	HOUSE EDGE
17 to 1	5.26%
16 to 1	10.53%
15 to 1	15.79%

Best Roulette in the West



Best in Nevada: The Bellegio, Mandalay Bay, MGM Grand, Mirage, Rio, and Wynn all have European roulette, with a house edge of 1.35%. Usually such wheels are in the high-limit rooms, but the MGM and Mirage also have a European wheel in the main casino at a \$25 minimum.

Best in California: It is my understanding that the only single-zero roulette in California is at the Barona casino, with a house edge of 2.70%.

Las Vegas Rules Survey

I am proud to present my Las Vegas roulette survey at my companion site [Wizard of Vegas](http://wizardofodds.com/games/roulette/basics).

Number Placement

To the casual observer, it would appear that the numbers on the wheel are not organized and seem to be distributed randomly. The only obvious patterns are that red and black numbers alternate and that usually two odd numbers alternate with two even numbers. However the distribution of numbers was carefully arranged so that the sum of the numbers for any given section of the wheel would be roughly equal to any other section of equal size. Most numbers are part of a pair, with one number between them. These pairs add to either 37 or 39.

For what it is worth, the sum of all the numbers in roulette is [666](#).

Wheel Tracking

Some people and books claim that roulette wheels are biased, with a heavy side and a light side. Gravity causes the numbers in the heavy side to hit more often. This, I believe, used to be true when the quality of the equipment was poor. However, modern roulette wheels are much better and very rigorously tested. Only in a casino using a very dated wheel, may you be able to find a biased one by testing many thousands of spins. Based on stories I have heard, your odds of finding such wheels are probably best in Europe.

Betting Systems

Ugh. If you think you can beat roulette with a betting system please read my section [debunking betting systems](#). If you don't believe what I say there, here is what the Encyclopedia Britannica says under the subject of roulette:

The oldest and most common betting system is the Martingale or "doubling-up" system, in which bets are doubled progressively. This probably dates back to the invention of the Roulette wheel, but every day of the week some gambler somewhere reinvents it, or some variation of it, and believes he has something new. Over the years hundreds of "sure-fire" winning systems have been dreamed up, but regardless of what system is used, in the long run it cannot overcome the house's advantage of the 0, or 0 and 00. This house advantage is the only system that consistently wins in the long run.

"No one can possibly win at roulette unless he steals money from the table while the croupier isn't looking." — Albert Einstein

San Diego Area Roulette

The California Constitution prohibits a ball and wheel alone to determine the outcome in roulette. In the greater San Diego area the casinos have thought of some creative ways to offer roulette anyway. Visit my page on [San Diego County roulette](#) to see how they do it, and who offers the best odds.

Ball Steering

I get asked a lot about whether I believe dealers can influence the spin to a certain area of the wheel. My answer is an emphatic "no." Maybe on wheels decades old, but not the modern wheels with obstacles between the rim and the numbers, and where the ball bounces all over the place before it lands in a number.

Not only does ball steering not make sense from a physics standpoint, but a logical one as well. A dealer capable of steering the ball would not have to depend on tips for a living but could have a confederate come in, bet thousands on a section of the wheel, the dealer deliberately sends the ball into his friend's section, and they split up the winnings later. By causing section-betting strangers to lose, the wheel could still show a profit, and nobody would suspect a thing, except maybe the losing stranger. Yet, you never seem to hear of this happening.

Blackjack and poker expert Arnold Snyder has a different point of view on this topic. In the interest of presenting both sides, you may wish to read his articles [How to Win at Roulette — Part I](#) and [Part II](#). I have the greatest of respect for Snyder, but on

this topic, I have to respectfully disagree with him, much as I have always done with Stanford Wong in dice influence in craps.

Online Roulette Casino Bonuses

RANK	CASINO	BONUS	%	WAGER	CASH
1	 fonecasino Ford Mobile Gaming	€/\$1000	100%	80xB	Play Now
2	 TREASURE MILE Casino	€/\$500	100%	80xB	Play Now
3	 LOTUS CASINO better odds safer wins	€/\$200	50%	80xB	Play Now
4	 CASINO EVOLUTION .com	BTC1	100%	180xB	Play Now
5	 mBit CASINO	BTC1	110%	350xB	Play Now

Play for Free

[Play roulette for free](#) with this Flash game. I finally found a Flash game for my site which downloads quickly.

Written by: [Michael Shackleford](#)

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Lucky Symbols Roulette

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Introduction

Lucky Symbols Roulette is a series of roulette side bets I saw at the Casino of the Empire in London in February 2014. It also can be found at the [Montecasino](#) in South Africa. There are six symbols to choose from paying various odds. Somehow, the game picks one of them as the winner and displays the winning outcome on an electronic display board.

Rules

Lucky Symbols Roulette is based on standard double-zero [roulette](#), but with six side bets as follows.

Pay Table

BET	PAYS
Dragon	80

Coins	18
Lantern	3
Prosperity	1
Yin Yang	3
Fish	18
Tiger	80

The game will pick one winning outcome and display it on an display board. According to game literature, the winning outcome is based on the speed of the ball and wheel.

Analysis

Game literature shows the probability of each symbol winning and house advantage. The following table shows that probability as well as the expected return.

Lucky Symbols Analysis

BET	PAYS	PROBABILITY	RETURN
Dragon	80	1.10%	-11.01%
Coins	18	4.54%	-13.72%
Lantern	3	21.90%	-12.40%
Prosperity	1	44.92%	-10.16%
Yin Yang	3	21.90%	-12.40%
Fish	18	4.54%	-13.72%
Tiger	80	1.10%	-11.01%

Strategy

If you must play the Lucky Symbols, bet the Prosperity symbol only, with the lowest house edge of 10.16%. The Prosperity bet is represented by a Chinese character and is the only Lucky Symbols bet that pays 1 to 1. Of course, you would do much better to just stick to roulette with a house edge of 5.26%.

External Links

- [Lucky Symbols Roulette rules](#) at the Montecasino web site.

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Double Ball Roulette

Introduction



Double Ball Roulette plays like regular roulette, except with two balls. I first saw the game at the 2013 Global Gaming Expo and later at the Tropicana in Las Vegas on February 18, 2014. The Tropicana uses a double-zero wheel.

Later, in November, 2016, I noticed it at an Internet casino using Felt software. Felt uses a single-zero wheel.

You might wonder about how they keep the balls from hitting each other in a physical game. The game uses compressed air to shoot the two balls out of a tube almost simultaneously. They travel at the same speed so the second ball always trails the first one.

You might also wonder if the probability of the two balls landing in the same number is about the expected $1/38$, assuming they the two outcomes were completely independent. At least I wondered this and annoyed the game maker with physics questions at the gaming show for much too long about it. He assured me that an independent lab did tens of thousands of spins and the probability of the two balls landing the same number is about the expected $1/38$, assuming they two outcomes were completely independent.

The betting layout is mostly the same as standard roulette. With the inside bets, the player has two chances to win, but the pays are less. On the outside bets, both balls must win, but the pays are more. In addition the player may bet that both balls will land in any one number.

Rules

General Rules

1. An ordinary single- or double-zero wheel is used.
2. Most of the layout is the same as conventional roulette.
3. Two balls are used.

4. Both balls must be successful for "outside" bets to win. For example, for a bet on Red win, both balls must land in a red number.
5. Either ball must be successful for "inside" bets to win. The player will win twice as much if both balls result in a successful outcome.
6. For the "Double Ball Jackpot" bet to win, both balls must land in the selected number.
7. A remote-controlled button is given to a player to activate the air gun shooting the balls.

Available Bets

1. Red, Black, Odd, Even, 1 to 18, 19 to 36 — Pays 3 to 1 if both balls land in the chosen 18 numbers.
2. 1st 12, 2nd 12, 3rd 12 — Pays 8 to 1 if both balls land in the chosen 12 numbers.
3. 1 red, 1 black — Pays 1 to 1 if one ball lands in a red number and the other black.
4. One Number — Pays 17 to 1 if either ball lands in the chosen number, and 34 to 1 if both do.
5. Two Number — Pays 8 to 1 if either ball lands in the chosen number, and 16 to 1 if both do.
6. Three Number — Pays 5 to 1 if either ball lands in the chosen number, and 10 to 1 if both do.
7. Four Number — Pays 3 to 1 if either ball lands in the chosen number, and 6 to 1 if both do.
8. Five Number — Pays 5 to 2 if either ball lands in the chosen number, and 5 to 1 if both do.
9. Six Number — Pays 2 to 1 if either ball lands in the chosen number, and 4 to 1 if both do.
10. Double Ball Jackpot — Pays 1,200 to 1 if both balls land in the selected number.

Below are scans of the rack card. Click either image for a larger version.



Double-Zero Analysis

Outside Bets

The following tables show my analysis of the Outside bets on a double-zero wheel. For outside bets both balls must land in a winning number for the bet to win.

The next table shows my analysis of all bets with 18 winning numbers, namely red, black, odd, even, low (1 to 18), and high (19 to 36).

All 18-Number Outside Bets — Double-Zero Wheel

EVENT	PAYS	COMBINATIONS	PROBABILITY	RETURN
Win	3	324	0.224377	0.673130
Loss	-1	1,120	0.775623	-0.775623
Total		1,444	1.000000	-0.102493

The next table shows my analysis of all bets with 12 winnings numbers, namely first, second, and third 12, and first, second, and third columns.

All 12-Number Outside Bets — Double-Zero Wheel

EVENT	PAYS	COMBINATIONS	PROBABILITY	RETURN
Win	8	144	0.099723	0.797784
Loss	-1	1,300	0.900277	-0.900277
Total		1,444	1.000000	-0.102493

The next table shows my analysis of all single-number bet on a double-zero wheel.

All Single-Number Outside Bets — Double-Zero Wheel

EVENT	PAYS	COMBINATIONS	PROBABILITY	RETURN
Win	1200	1	0.000693	0.831025
Loss	-1	1,443	0.999307	-0.999307
Total		1,444	1.000000	-0.168283

The next table shows my analysis of the red/black bet on a double-zero wheel. One ball must land in red and the other in black.

Red/Black Bet — Double-Zero Wheel

EVENT	PAYS	COMBINATIONS	PROBABILITY	RETURN
Win	1	648	0.448753	0.448753
Loss	-1	796	0.551247	-0.551247
Total		1,444	1.000000	-0.102493

Inside Bets

The following tables show my analysis of the Inside bets on a double-zero wheel. For inside bets only one ball must land in a winning number for the bet to pay. If both land in a winning number, the bet pays twice as much.

The next table shows my analysis of all one-number bets.

All 1-Number Inside Bets — Double-Zero Wheel

WINS	PAYS	COMBINATIONS	PROBABILITY	RETURN
2	34	1	0.000693	0.023546
1	17	74	0.051247	0.871191
0	-1	1,369	0.948061	-0.948061
Total		1,444	1.000000	-0.053324

The next table shows my analysis of all two-number (split) bets.

All 2-Number Inside Bets — Double-Zero Wheel

WINS	PAYS	COMBINATIONS	PROBABILITY	RETURN
2	16	4	0.002770	0.044321
1	8	144	0.099723	0.797784
0	-1	1,296	0.897507	-0.897507
Total		1,444	1.000000	-0.055402

The next table shows my analysis of all 3-number (street) bets.

All 3-Number Inside Bets — Double-Zero Wheel

WINS	PAYS	COMBINATIONS	PROBABILITY	RETURN
2	10	9	0.006233	0.062327
1	5	210	0.145429	0.727147
0	-1	1,225	0.848338	-0.848338
Total		1,444	1.000000	-0.058864

The next table shows my analysis of all 4-number (corner) bets.

All 4-Number Inside Bets — Double-Zero Wheel

WINS	PAYS	COMBINATIONS	PROBABILITY	RETURN
2	6	16	0.011080	0.066482
1	3	272	0.188366	0.565097
0	-1	1,156	0.800554	-0.800554

Total	1,444	1.000000	-0.168975
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The next table shows my analysis of the 5-number bet (on 0,00,1,2, and 3).

5-Number Inside Bet — Double-Zero Wheel

WINS	PAYS	COMBINATIONS	PROBABILITY	RETURN
2	5	25	0.017313	0.086565
1	2.5	330	0.228532	0.571330
0	-1	1,089	0.754155	-0.754155
Total		1,444	1.000000	-0.096260

The next table shows my analysis of all 6-number (double street) bets.

All 6-Number Inside Bets — Double-Zero Wheel

WINS	PAYS	COMBINATIONS	PROBABILITY	RETURN
2	4	36	0.024931	0.099723
1	2	384	0.265928	0.531856
0	-1	1,024	0.709141	-0.709141
Total		1,444	1.000000	-0.077562

Strategy

My advice in any game is to go for the bets with the highest expected return. In the case of a double-zero wheel, the best bet is the inside bets on one single number, at a house edge of 5.33%. The two- and three-number bets are not much worse at 5.54% and 5.89% respectively.

I would be remiss in my duties if I didn't say that the house edge in standard double-zero roulette is lower at 5.26%. However, this is only 0.07% lower than the single-number inside bet in Double Ball Roulette.

Single-Zero Analysis

Here are a couple screenshots of the single-zero Double Ball Roulette game by Felt Gaming. Click on either image for a larger version.



Outside Bets

The following tables show my analysis of the Outside bets on a single-zero wheel. For outside bets both balls must land in a winning number for the bet to win.

The next table shows my analysis of all bets with 18 winnings numbers, namely red, black, odd, even, low (1 to 18), and high (19 to 36).

All 18-Number Outside Bets — Single-Zero Wheel

EVENT	PAYS	COMBINATIONS	PROBABILITY	RETURN
Win	3	324	0.236669	0.710007
Loss	-1	1,045	0.763331	-0.763331
Total		1,369	1.000000	-0.053324

The next table shows my analysis of all bets with 12 winnings numbers, namely first, second, and third 12, and first, second, and third columns.

All 12-Number Outside Bets — Single-Zero Wheel

EVENT	PAYS	COMBINATIONS	PROBABILITY	RETURN
Win	8	144	0.105186	0.841490
Loss	-1	1,225	0.894814	-0.894814
Total		1,369	1.000000	-0.053324

The next table shows my analysis of all single-number bet on a single-zero wheel.

All Single-Number Outside Bets — Single-Zero Wheel

EVENT	PAYS	COMBINATIONS	PROBABILITY	RETURN
Win	1200	1	0.000730	0.876552
Loss	-1	1,368	0.999270	-0.999270
Total		1,369	1.000000	-0.122717

The next table shows my analysis of the red/black bet on a single-zero wheel. One ball must land in red and the other in black.

Red/Black Bet — Single-Zero Wheel

EVENT	PAYS	COMBINATIONS	PROBABILITY	RETURN
Win	1	648	0.473338	0.473338
Loss	-1	721	0.526662	-0.526662
Total		1,369	1.000000	-0.053324

Inside Bets

The following tables show my analysis of the Inside bets on a single-zero wheel. For inside bets only one ball must land in a winning number for the bet to pay. If both land in a winning number, the bet pays twice as much.

The next table shows my analysis of all one-number bets.

All 1-Number Inside Bets — Single-Zero Wheel

WINS	PAYS	COMBINATIONS	PROBABILITY	RETURN
2	34	1	0.000730	0.024836
1	17	72	0.052593	0.894083
0	-1	1,296	0.946676	-0.946676
Total		1,369	1.000000	-0.027757

The next table shows my analysis of all two-number (split) bets.

All 2-Number Inside Bets — Single-Zero Wheel

WINS	PAYS	COMBINATIONS	PROBABILITY	RETURN
2	16	4	0.002922	0.046749

1	8	140	0.102264	0.818115
0	-1	1,225	0.894814	-0.894814
Total		1,369	1.000000	-0.029949

The next table shows my analysis of all 3-number (street) bets.

All 3-Number Inside Bets — Single-Zero Wheel

WINS	PAYS	COMBINATIONS	PROBABILITY	RETURN
2	6	16	0.011687	0.070124
1	3	264	0.192841	0.578524
0	-1	1,089	0.795471	-0.795471
Total		1,369	1.000000	-0.146822

The next table shows my analysis of all 4-number (corner) bets.

All 4-Number Inside Bets — Single-Zero Wheel

WINS	PAYS	COMBINATIONS	PROBABILITY	RETURN
2	6	16	0.011687	0.070124
1	3	264	0.192841	0.578524
0	-1	1,089	0.795471	-0.795471
Total		1,369	1.000000	-0.146822

The next table shows my analysis of all 6-number (single street) bets.

All 6-Number Inside Bets — Single-Zero Wheel

WINS	PAYS	COMBINATIONS	PROBABILITY	RETURN
2	4	36	0.026297	0.105186
1	2	372	0.271731	0.543462
0	-1	961	0.701972	-0.701972
Total		1,369	1.000000	-0.053324

Strategy

As with any game of pure luck, all you can do for yourself is to make the bets with the lowest house edge. In this case it is the single-number inside bet, with a house edge of 2.78%. If that is too volatile for you, the double-number inside bet is not much higher at 2.99%

Internal Links

- [Double Action Roulette](#) — Similar game, but with one ball and two wheels.

External Links

- [Double Ball Roulette](#) — Site by the makers of the game.
- [Wizard of Vegas](#) — Discussion about Double Ball Roulette in my forum.

Written by: [Michael Shackleford](#)

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Last Updated: Mar. 2, 2015

Double Action Roulette

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Introduction



<https://web.archive.org/web/20160402043233/http://wizardofodds.com/games/double-action-roulette/>

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I first saw Double Action Roulette at the 2012 Global Gaming Expo. I was told at the time it had just been installed at the MGM casino in Las Vegas.

The thrust of the game is two rings of numbers spin independently, and a ball lands in a spot between the two rings. This results in two winning outcomes. The player may bet on the outcome of the outer ring, inner ring, or a parlay bet on both.

Rules



As stated above, there are two rings of numbers: an outer and an inner. According to TCS John Huxley literature on the game, it is available in both a single-zero and a double-zero version.

For betting, instead of the usual 3 by 12 grid of numbers in standard roulette, Double Action Roulette has a 6 by 6 field. However, the bets and odds remain mostly the same when betting on a single outcome. Following are the specific bets available:

Single Ring Bets

The following bets may be made on either the inner or outer rings.

- Single number. Pays 35 to 1.
- Two numbers. Pays 17 to 1.
- Four numbers. Pays 8 to 1.
- Six numbers. Pays 5 to 1.
- 12 numbers. Pays 2 to 1.
- Eight numbers (0,00,1,2,3,4,5,6), available in double-zero format only. Pays 3 to 1.
- Seven numbers (0,1,2,3,4,5,6), available in single-zero format only. Pays 4 to 1.

Double Ring Bets

The following bets work on parlays, where they must win on both rings.

- Single number. Pays 1200 to 1.
- Two red, black, odd, even, 1 to 18, 19 to 36. Pays 3 to 1.
- First, second, or third dozen. Pays 8 to 1.

- Eight numbers (0,00,1,2,3,4,5,6), available in double-zero format only. Pays 18 to 1.
- Seven numbers (0,1,2,3,4,5,6), available in single-zero format only. Pays 25 to 1.



Single-Zero Odds

The following tables show the bets available using a single-zero wheel. The first table is for bets on one wheel, and the second for parlay bets on both wheels.

Single Ring Bets — Single-Zero Wheel

BET	PAYS	COMBINATIONS	PROBABILITY	RETURN
Single number	35	1	0.027027	-0.027027
Any two numbers	17	2	0.054054	-0.027027
Any three numbers	11	3	0.081081	-0.027027
Any four numbers	8	4	0.108108	-0.027027
Any six numbers	5	6	0.162162	-0.027027
Seven numbers	4	7	0.189189	-0.054054
Twelve numbers	2	12	0.324324	-0.027027

Double Ring Bets — Single-Zero Wheel

BET	PAYS	COMBINATIONS	PROBABILITY	RETURN
Two red	3	324	0.236669	-0.053324
Two black	3	324	0.236669	-0.053324
Two odd	3	324	0.236669	-0.053324
Two even	3	324	0.236669	-0.053324

Two 1 to 18	3	324	0.236669	-0.053324
Two 19 to 36	3	324	0.236669	-0.053324
Two 1 to 12	8	144	0.105186	-0.053324
Two 13 to 24	8	144	0.105186	-0.053324
Two 25 to 36	8	144	0.105186	-0.053324
First dozen	8	144	0.105186	-0.053324
Second dozen	8	144	0.105186	-0.053324
Third dozen	8	144	0.105186	-0.053324
Seven numbers	25	49	0.035793	-0.069394
Two identical numbers	1200	1	0.000730	-0.122717

Double-Zero Odds

The following tables show the bets available using a double-zero wheel. The first table is for bets on one wheel, and the second for parlay bets on both wheels.

Single Ring Bets — Double-Zero Wheel

BET	PAYS	COMBINATIONS	PROBABILITY	RETURN
Single number	35	1	0.026316	-0.052632
Any two numbers	17	2	0.052632	-0.052632
Any three numbers	11	3	0.078947	-0.052632
Any four numbers	8	4	0.105263	-0.052632
Any six numbers	5	6	0.157895	-0.052632
Eight numbers	3	8	0.210526	-0.157895
Twelve numbers	2	12	0.315789	-0.052632

Double Ring Bets — Double-Zero Wheel

BET	PAYS	COMBINATIONS	PROBABILITY	RETURN
Two red	3	324	0.224377	-0.102493
Two black	3	324	0.224377	-0.102493

Two odd	3	324	0.224377	-0.102493
Two even	3	324	0.224377	-0.102493
Two 1 to 18	3	324	0.224377	-0.102493
Two 19 to 36	3	324	0.224377	-0.102493
Two 1 to 12	8	144	0.099723	-0.102493
Two 13 to 24	8	144	0.099723	-0.102493
Two 25 to 36	8	144	0.099723	-0.102493
First dozen	8	144	0.099723	-0.102493
Second dozen	8	144	0.099723	-0.102493
Third dozen	8	144	0.099723	-0.102493
Eight numbers	18	64	0.044321	-0.157895
Two identical numbers	1200	1	0.000693	-0.168283

External Links

[YouTube video](#) about the game.

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The Wayback Machine - <https://web.archive.org/web/20160402180633/http://wizardofodds.com/games/riverboat-roulette/>

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Last Updated: July 15, 2014

Riverboat Roulette

Introduction



I first noticed Riverboat Roulette at the Golden Gate casino in Las Vegas on July 7, 2014. It is played on a standard roulette wheel, except each number is assigned two colors. Various new bets are added on the second color of each number.

Rules

1. The game is based on a standard 38-number roulette wheel.
2. Each number is assigned two colors. For purposes of this explanation, I will call them the "outer colors" and "inner colors."
3. The outer colors can be red, black, or green in the same numbers are conventional roulette.
4. The inner colors are distributed as follows:

Color Distribution

COLOR	NUMBER
White	8
Green	2
Red	2
Black	2
Yellow	3
Teal	3
Pink	4
Purple	4
Blue	5
Orange	5
Total	38



5. On the betting layout there are fields to bet on the following colors: Yellow, Teal, Pink, Purple, Blue, and Orange. A bet on one of these colors will win if the ball lands in the chosen color before it lands in white. Any other outcome shall push. The following table shows how much each bet pays.

Pay Table

COLOR	PAYS
Yellow	2
Teal	2
Pink	1.6
Purple	1.6
Blue	1.4
Orange	1.4

6. There is also a single spin bet on white, which pays 3.5, and loses on any other outcome.



Analysis

The following table shows my analysis of the Yellow and Teal bets. The lower right cell reflects a house edge of 5.26%, the same as conventional double-zero roulette.

Yellow and Teal Analysis

OUTCOME	PAYS	NUMBERS	PROBABILITY	RETURN
Win	2	3	0.078947	0.157895
Push	0	27	0.710526	0.000000
Loss	-1	8	0.210526	-0.210526

Total	38	1.000000	-0.052632
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Note: If we define the house edge as the expected loss to bet resolved, as it is defined for place bets in craps, the house edge would be 18.18%.

The following table shows my analysis of the Pink and Purple bets. The lower right cell reflects a house edge of 4.21%.

Pink and Purple Analysis

OUTCOME	PAYS	NUMBERS	PROBABILITY	RETURN
Win	1.6	4	0.105263	0.168421
Push	0	26	0.684211	0.000000
Loss	-1	8	0.210526	-0.210526
Total		38	1.000000	-0.042105

Note: If we define the house edge as the expected loss to bet resolved, as it is defined for place bets in craps, the house edge would be 13.33%.

The following table shows my analysis of the Blue and Orange bets. The lower right cell reflects a house edge of 2.63%.

Blue and Orange Analysis

OUTCOME	PAYS	NUMBERS	PROBABILITY	RETURN
Win	1.4	5	0.131579	0.184211
Push	0	25	0.657895	0.000000
Loss	-1	8	0.210526	-0.210526
Total		38	1.000000	-0.026316

Note: If we define the house edge as the expected loss to bet resolved, as it is defined for place bets in craps, the house edge would be 7.69%.

The following table shows my analysis of the White bet. The lower right cell reflects a house edge of 5.26%, the same as conventional double-zero roulette.

White Analysis

OUTCOME	PAYS	NUMBERS	PROBABILITY	RETURN
Win	3.5	8	0.210526	0.736842

Loss	-1	30	0.789474	-0.789474
Total		38	1.000000	-0.052632

Since the White bet has no pushes, the house edge is 5.26% no matter how you calculate it.

Strategy

My advice is to bet on the Blue and Orange bets only. On a per spin basis, these bets offer the best value, including the conventional roulette bets. However, if you feel that the house edge should not include pushes, then the White bet and the conventional roulette bets would offer a better value.

External Links

[Riverboat Roulette](#) — Official web site.

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