

Vamos a Las Vegas Par Sheet

by

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Introduction

Vamos a Las Vegas (VLV) is a conventional 5-reel video slot machine. The player may bet 1 to 20 pay lines and 1 to 20 credits per pay line. It features two bonuses as follows:

- Implosion Bonus: Player picks one of five casinos to implode, revealing a prize.
- Ticket Bonus: Player gets eight free spins with a different pay table and reel stripping. All wilds in free spins are "sticky," meaning they stay in place for all subsequent spins.

Base Game Rules

In the base game, the "sign" is wild. It may substitute for any line-pay symbol.

The following is the pay table for the base game.

Base Game Pay Table

Symbol	5 in a row	4 in a row	3 in a row	2 in a row
Sign	5000	500	100	10
Stripper	1000	200	50	3
Dealer	500	150	40	2
Cards	300	100	30	0
Dice	300	100	30	0
Roulette	200	75	20	0
Black chips	100	50	15	0
Green chips	100	50	15	0
Red chips	50	25	10	0
Blue chips	50	25	10	0

The following are the reel strips for the base game. The game shall choose five random numbers from 1 to 64, one for each reel, and map each to a stopping position on the given reel.

Base Game Reel Strips

Stop					
1	Blue chips	Dealer	Roulette	Dice	Red chips
2	Roulette	Casino	Black chips	Tickets	Wild
3	Red chips	Cards	Stripper	Cards	Green chips
4	Wild	Blue chips	Cards	Wild	Red chips
5	Blue chips	Red chips	Green chips	Dice	Blue chips
6	Black chips	Roulette	Black chips	Casino	Cards
7	Red chips	Black chips	Blue chips	Dealer	Red chips
8	Roulette	Green chips	Dealer	Dice	Black chips
9	Tickets	Red chips	Green chips	Red chips	Dice
10	Black chips	Tickets	Roulette	Blue chips	Blue chips
11	Dice	Roulette	Black chips	Casino	Stripper
12	Green chips	Blue chips	Green chips	Roulette	Tickets
13	Blue chips	Dice	Casino	Black chips	Green chips
14	Stripper	Black chips	Stripper	Red chips	Stripper
15	Dealer	Roulette	Roulette	Casino	Cards
16	Green chips	Green chips	Black chips	Cards	Dealer
17	Red chips	Dealer	Blue chips	Roulette	Red chips
18	Stripper	Tickets	Red chips	Black chips	Green chips
19	Green chips	Black chips	Green chips	Dice	Blue chips
20	Blue chips	Blue chips	Black chips	Red chips	Dice
21	Cards	Green chips	Dice	Wild	Cards
22	Red chips	Wild	Roulette	Roulette	Blue chips
23	Dice	Roulette	Red chips	Black chips	Stripper
24	Blue chips	Black chips	Tickets	Cards	Black chips
25	Cards	Blue chips	Dealer	Red chips	Blue chips
26	Dealer	Stripper	Blue chips	Green chips	Red chips
27	Green chips	Casino	Red chips	Blue chips	Green chips
28	Dice	Wild	Casino	Red chips	Dealer
29	Blue chips	Blue chips	Tickets	Black chips	Roulette
30	Red chips	Cards	Wild	Stripper	Black chips
31	Dealer	Casino	Roulette	Red chips	Dice
32	Dice	Black chips	Red chips	Cards	Blue chips
33	Stripper	Dice	Dice	Tickets	Roulette
34	Red chips	Green chips	Green chips	Green chips	Black chips
35	Roulette	Stripper	Dealer	Dice	Wild
36	Green chips	Blue chips	Cards	Blue chips	Blue chips
37	Cards	Red chips	Red chips	Dealer	Roulette
38	Black chips	Dice	Stripper	Dice	Red chips
39	Roulette	Green chips	Blue chips	Blue chips	Blue chips
40	Blue chips	Cards	Red chips	Cards	Cards
41	Cards	Blue chips	Dice	Green chips	Dealer
42	Dice	Roulette	Black chips	Roulette	Tickets
43	Green chips	Cards	Blue chips	Dice	Green chips

44	Cards	Black chips	Cards	Blue chips	Stripper
45	Red chips	Green chips	Wild	Red chips	Red chips
46	Wild	Red chips	Blue chips	Casino	Dice
47	Roulette	Cards	Cards	Blue chips	Green chips
48	Black chips	Dealer	Stripper	Black chips	Black chips
49	Blue chips	Blue chips	Blue chips	Red chips	Red chips
50	Cards	Red chips	Casino	Roulette	Dealer
51	Black chips	Black chips	Red chips	Green chips	Dice
52	Red chips	Dice	Blue chips	Blue chips	Green chips
53	Stripper	Stripper	Casino	Stripper	Red chips
54	Green chips	Casino	Black chips	Green chips	Roulette
55	Dealer	Blue chips	Roulette	Dealer	Cards
56	Red chips	Black chips	Dealer	Cards	Blue chips
57	Green chips	Red chips	Dice	Black chips	Red chips
58	Roulette	Green chips	Cards	Red chips	Green chips
59	Black chips	Dice	Roulette	Stripper	Roulette
60	Green chips	Dealer	Red chips	Blue chips	Red chips
61	Dice	Blue chips	Dice	Black chips	Dice
62	Red chips	Red chips	Blue chips	Roulette	Cards
63	Tickets	Roulette	Red chips	Blue chips	Roulette
64	Dealer	Black chips	Green chips	Green chips	Green chips

Implosion Bonus Rules

If the player gets the construction worker symbol on reels 2, 3, and 4, then he shall play the Implosion Bonus.

In the Implosion Bonus, the game shall choose a set of prizes randomly with the following probabilities: Small: 88.8%, Medium: 10.2%, Big: 1.0%

The game will then randomly assign the following prizes to the five casinos, according to the size group of the prizes, as follows:

Implosion Bonus Prizes

Icon	Small	Medium	Large
1	5	15	50
2	10	30	100
3	20	60	200
4	30	90	300
5	50	150	500

All wins in the Implosion Bonus are based on the total amount bet.

Ticket Bonus Rules

If the player gets at least three scattered ticket symbols, then he shall play the Ticket Bonus. If the player gets four ticket symbols, then the final win will be multiplied by 3. For five ticket symbols it will be multiplied by 10.

In the Ticket Bonus, the player shall get eight free spins with the following pay table and reel stripping. The limousine is wild in free spins and is "sticky," meaning it remains in place for all subsequent free spins. Note there are no limousines on reel 1.

Free Game Pay Table

Symbol	5 in a row	4 in a row	3 in a row
Cirque	1000	200	50
Siegfried and Roy	500	150	40
Celine Dion	300	100	30
Jubilee	300	100	30
Donny and Marie	200	75	20
Penn and Teller	100	50	15
Frank Marino	100	50	15
Chippendales	50	25	10
Blue Man Group	50	25	10

The following is the reel stripping for free spins. As with the base game, the game shall choose five random integers from 1 to 64, one for each reel, and assign each to a stopping position on the associated reel.

Free Game Reel Stripping

Stop	1	2	3	4	5
1	S & R	S & R	Blue Man Group	Limousine	Jubilee
2	Celine Dion	Frank Marino	Jubilee	Celine Dion	Limousine
3	Frank Marino	Penn and Teller	Frank Marino	Cirque	Blue Man Group
4	Donny and Marie	Limousine	Chippendales	Penn and Teller	Cirque
5	Chippendales	Chippendales	Donny and Marie	Limousine	Jubilee
6	Frank Marino	Frank Marino	Blue Man Group	S & R	Chippendales
7	Blue Man Group	Blue Man Group	Chippendales	Chippendales	Donny and Marie
8	Penn and Teller	Celine Dion	Jubilee	Frank Marino	Penn and Teller
9	Jubilee	Jubilee	Limousine	S & R	Limousine
10	Blue Man Group	Donny and Marie	Blue Man Group	Celine Dion	Chippendales
11	Chippendales	Blue Man Group	Chippendales	Blue Man Group	Blue Man Group
12	Frank Marino	Chippendales	Penn and Teller	Chippendales	Donny and Marie
13	Blue Man Group	Limousine	Donny and Marie	S & R	Frank Marino
14	Chippendales	Jubilee	Blue Man Group	Blue Man Group	Celine Dion

15	Celine Dion	Chippendales	Celine Dion	Donny and Marie	Limousine
16	Frank Marino	Cirque	Frank Marino	Frank Marino	Blue Man Group
17	Blue Man Group	Penn and Teller	Penn and Teller	Chippendales	Frank Marino
18	Penn and Teller	S & R	Blue Man Group	Penn and Teller	Penn and Teller
19	Donny and Marie	Blue Man Group	Celine Dion	Donny and Marie	Cirque
20	Chippendales	Frank Marino	S & R	Blue Man Group	Blue Man Group
21	Blue Man Group	Donny and Marie	Penn and Teller	Penn and Teller	Penn and Teller
22	Penn and Teller	Jubilee	Cirque	Jubilee	Chippendales
23	Chippendales	Frank Marino	Chippendales	Cirque	Donny and Marie
24	Blue Man Group	Chippendales	Donny and Marie	Blue Man Group	S & R
25	Penn and Teller	Jubilee	Limousine	Chippendales	Chippendales
26	S & R	Cirque	Chippendales	Jubilee	Blue Man Group
27	Chippendales	Chippendales	S & R	Penn and Teller	Celine Dion
28	Cirque	Donny and Marie	Frank Marino	Celine Dion	Chippendales
29	Penn and Teller	Blue Man Group	Jubilee	Chippendales	Penn and Teller
30	Blue Man Group	Frank Marino	Celine Dion	Frank Marino	Frank Marino
31	Frank Marino	Penn and Teller	Frank Marino	Celine Dion	S & R
32	Donny and Marie	Donny and Marie	Chippendales	Penn and Teller	Blue Man Group
33	S & R	Chippendales	S & R	Blue Man Group	Frank Marino
34	Chippendales	Celine Dion	Donny and Marie	Chippendales	Penn and Teller
35	Celine Dion	Blue Man Group	Blue Man Group	Penn and Teller	Donny and Marie
36	Jubilee	Penn and Teller	Frank Marino	Blue Man Group	Chippendales
37	Blue Man Group	Limousine	Celine Dion	Chippendales	Jubilee
38	Chippendales	Donny and Marie	Penn and Teller	Frank Marino	Blue Man Group
39	Frank Marino	Penn and Teller	Chippendales	Donny and Marie	Penn and Teller
40	Celine Dion	Blue Man Group	Cirque	Jubilee	Donny and Marie
41	Donny and Marie	Donny and Marie	Celine Dion	Chippendales	Blue Man Group
42	Penn and Teller	Chippendales	Blue Man Group	Blue Man Group	Chippendales
43	Frank Marino	Celine Dion	Penn and Teller	Frank Marino	Penn and Teller
44	Blue Man Group	Frank Marino	Jubilee	Penn and Teller	Blue Man Group
45	Jubilee	Blue Man Group	Cirque	Donny and Marie	Celine Dion
46	Chippendales	S & R	Blue Man Group	Chippendales	Chippendales
47	Donny and Marie	Frank Marino	Frank Marino	Frank Marino	Jubilee
48	Jubilee	Chippendales	Chippendales	Penn and Teller	S & R
49	Blue Man Group	S & R	Penn and Teller	Chippendales	Blue Man Group
50	Chippendales	Cirque	Frank Marino	Frank Marino	Frank Marino
51	Frank Marino	Chippendales	Blue Man Group	Blue Man Group	Celine Dion
52	Penn and Teller	Blue Man Group	Penn and Teller	Donny and Marie	Chippendales
53	Cirque	Penn and Teller	S & R	Chippendales	Frank Marino
54	S & R	Jubilee	Chippendales	Jubilee	Donny and Marie
55	Jubilee	Blue Man Group	Blue Man Group	Blue Man Group	Cirque
56	Blue Man Group	Penn and Teller	Donny and Marie	Donny and Marie	Jubilee
57	Cirque	Celine Dion	Chippendales	Penn and Teller	Celine Dion

58	Chippendales	Chippendales	Jubilee	Frank Marino	Frank Marino
59	Donny and Marie	Blue Man Group	Penn and Teller	Donny and Marie	Chippendales
60	Blue Man Group	Celine Dion	Frank Marino	Celine Dion	Blue Man Group
61	Penn and Teller	Frank Marino	Donny and Marie	Blue Man Group	Frank Marino
62	Donny and Marie	Blue Man Group	Limousine	Jubilee	Penn and Teller
63	Celine Dion	Penn and Teller	Frank Marino	Frank Marino	Chippendales
64	Chippendales	Chippendales	Penn and Teller	Blue Man Group	S & R

Base Game Analysis

The following table shows the number of combinations of each win in the base game out of a possible $64^5 = 1,073,741,824$ combinations.

Base Game Line Pay Probability Combinations

Symbol	5 in a Row	4 in a Row	3 in a Row	2 in a Row	Total
Sign	32	928	27456	342528	370944
Stripper	5368	51272	649472	6176768	6882880
Dealer	7464	72152	921344	9027584	10028544
Cards	24960	172032	1376256	0	1573248
Dice	28096	193536	1351680	0	1573312
Roulette	36736	254464	2035712	0	2326912
Black chips	49392	402192	2759680	0	3211264
Green chips	68992	332416	2809856	0	3211264
Red chips	168740	661980	3880448	0	4711168
Blue chips	158752	764896	4328192	0	
Total	548532	2905868	20140096	15546880	39141376

The next table shows the return of each possible win over all 64^5 combinations. This table is the product of the combination table above and the pay table. From this table, we can see the return of the base game is $610587572 / 64^5 = 0.568654$.

Base Game Line Pay Return Combinations

Symbol	5 in a row	4 in a row	3 in a row	2 in a row	Total
Sign	160000	464000	2745600	3425280	6794880
Stripper	5368000	10254400	32473600	18530304	66626304
Dealer	3732000	10822800	36853760	18055168	69463728
Cards	7488000	17203200	41287680	0	65978880
Dice	8428800	19353600	40550400	0	68332800
Roulette	7347200	19084800	40714240	0	67146240
Black chips	4939200	20109600	41395200	0	66444000
Green chips	6899200	16620800	42147840	0	65667840
Red chips	8437000	16549500	38804480	0	63790980
Blue chips	7937600	19122400	43281920	0	70341920
Total	60737000	149585100	360254720	40010752	610587572

The next table shows the contribution to the return of each possible win.

Symbol	5 in a row	4 in a row	3 in a row	2 in a row	Total
Sign	0.000149	0.000432	0.002557	0.003190	0.006328
Stripper	0.004999	0.009550	0.030243	0.017258	0.062051
Dealer	0.003476	0.010080	0.034323	0.016815	0.064693
Cards	0.006974	0.016022	0.038452	0.000000	0.061448
Dice	0.007850	0.018024	0.037766	0.000000	0.063640
Roulette	0.006843	0.017774	0.037918	0.000000	0.062535
Black chips	0.004600	0.018729	0.038552	0.000000	0.061881
Green chips	0.006425	0.015479	0.039253	0.000000	0.061158
Red chips	0.007858	0.015413	0.036139	0.000000	0.059410
Blue chips	0.007392	0.017809	0.040309	0.000000	0.065511
Total	0.056566	0.139312	0.335513	0.037263	0.568654

Implosion Bonus Analysis

The following table shows the probability of each prize pool, average win, and the expected win. The lower right cell shows an average bonus win of 29.762, relative to the total amount bet.

Pool	Probability	Avg. Win	Exp. Win
Small	88.80%	23	20.424
Medium	10.20%	69	7.038
Big	1.00%	230	2.300
Total	100.00%		29.762

Ticket Bonus Analysis

With the sticky wild feature, each spin progressively has a higher number of expected wilds and thus a greater return. In the interests of brevity, I will show the return table only for each spin.

Free Spin 1 Return Table

Symbol	5 in a Row	4 in a Row	3 in a Row	Total
Cirque	0.002414	0.004667	0.019312	0.026393
Siegfried and Roy	0.003194	0.007804	0.027571	0.038569
Celine Dion	0.005007	0.011683	0.032616	0.049305
Jubilee	0.005007	0.011683	0.032616	0.049305
Donny and Marie	0.008555	0.019604	0.037175	0.065334
Penn and Teller	0.011900	0.028668	0.050039	0.090608
Frank Marino	0.011900	0.028668	0.050039	0.090608
Male stripper	0.018509	0.033053	0.066390	0.117952
Hypnotist	0.018509	0.033053	0.066390	0.117952
Total	0.084996	0.178882	0.382148	0.646025

Free Spin 2 Return Table

Symbol	5 in a Row	4 in a Row	3 in a Row	Total
Cirque	0.010879	0.013796	0.039504	0.064179
Siegfried and Roy	0.011533	0.019435	0.050990	0.081959
Celine Dion	0.014714	0.024639	0.055733	0.095087
Jubilee	0.014714	0.024639	0.055733	0.095087
Donny and Marie	0.021691	0.036829	0.059602	0.118122
Penn and Teller	0.024754	0.046368	0.071494	0.142616
Frank Marino	0.024754	0.046368	0.071494	0.142616
Male stripper	0.033526	0.048878	0.088890	0.171294
Hypnotist	0.033526	0.048878	0.088890	0.171294
Total	0.190092	0.309830	0.582331	1.082253

Free Spin 3 Return Table

Symbol	5 in a Row	4 in a Row	3 in a Row	Total
Cirque	0.031090	0.028968	0.064399	0.124456
Siegfried and Roy	0.029322	0.037279	0.078834	0.145435
Celine Dion	0.033201	0.042890	0.082413	0.158505
Jubilee	0.033201	0.042890	0.082413	0.158505
Donny and Marie	0.044643	0.059597	0.084848	0.189089
Penn and Teller	0.044752	0.067962	0.094525	0.207238
Frank Marino	0.044752	0.067962	0.094525	0.207238
Male stripper	0.054991	0.067226	0.112373	0.234590
Hypnotist	0.054991	0.067226	0.112373	0.234590
Total	0.370943	0.482000	0.806703	1.659646

Free Spin 4 Return Table

Symbol	5 in a Row	4 in a Row	3 in a Row	Total
Cirque	0.069094	0.050362	0.092608	0.212064
Siegfried and Roy	0.060623	0.061287	0.109726	0.231636
Celine Dion	0.063498	0.066163	0.111480	0.241141
Jubilee	0.063498	0.066163	0.111480	0.241141
Donny and Marie	0.080168	0.087417	0.111918	0.279503
Penn and Teller	0.073324	0.092905	0.118428	0.284658
Frank Marino	0.073324	0.092905	0.118428	0.284658
Male stripper	0.083825	0.087630	0.136252	0.307707
Hypnotist	0.083825	0.087630	0.136252	0.307707
Total	0.651178	0.692462	1.046573	2.390213

Free Spin 5 Return Table

Symbol	5 in a Row	4 in a Row	3 in a Row	Total
Cirque	0.130901	0.077671	0.122985	0.331556
Siegfried and Roy	0.109357	0.090999	0.142532	0.342888
Celine Dion	0.108425	0.093919	0.141964	0.344309
Jubilee	0.108425	0.093919	0.141964	0.344309
Donny and Marie	0.130751	0.119591	0.139991	0.390333
Penn and Teller	0.111697	0.120570	0.142632	0.374899
Frank Marino	0.111697	0.120570	0.142632	0.374899
Male stripper	0.120775	0.109597	0.160050	0.390423
Hypnotist	0.120775	0.109597	0.160050	0.390423
Total	1.052804	0.936434	1.294800	3.284038

Free Spin 6 Return Table

Symbol	5 in a Row	4 in a Row	3 in a Row	Total
Cirque	0.222098	0.110271	0.154583	0.486952
Siegfried and Roy	0.179089	0.125696	0.176318	0.481102
Celine Dion	0.170474	0.125462	0.173073	0.469009
Jubilee	0.170474	0.125462	0.173073	0.469009
Donny and Marie	0.198522	0.155309	0.168399	0.522231
Penn and Teller	0.160865	0.150295	0.166674	0.477833
Frank Marino	0.160865	0.150295	0.166674	0.477833
Male stripper	0.166405	0.132641	0.183388	0.482434
Hypnotist	0.166405	0.132641	0.183388	0.482434
Total	1.595196	1.208072	1.545570	4.348838

Free Spin 7 Return Table

Symbol	5 in a Row	4 in a Row	3 in a Row	Total
Cirque	0.347603	0.147348	0.186633	0.681584
Siegfried and Roy	0.272887	0.164510	0.210326	0.647722
Celine Dion	0.251726	0.160015	0.204165	0.615906
Jubilee	0.251726	0.160015	0.204165	0.615906
Donny and Marie	0.285203	0.193719	0.196604	0.675526
Penn and Teller	0.221581	0.181426	0.190186	0.593193
Frank Marino	0.221581	0.181426	0.190186	0.593193
Male stripper	0.221100	0.156298	0.205966	0.583363
Hypnotist	0.221100	0.156298	0.205966	0.583363
Total	2.294506	1.501055	1.794194	5.589755

Free Spin 8 Return Table

Symbol	5 in a Row	4 in a Row	3 in a Row	Total
Cirque	0.511523	0.187991	0.218511	0.918024
Siegfried and Roy	0.393256	0.206510	0.243946	0.843712
Celine Dion	0.353821	0.196781	0.234725	0.785328
Jubilee	0.353821	0.196781	0.234725	0.785328
Donny and Marie	0.392097	0.233975	0.224174	0.850247
Penn and Teller	0.294362	0.213344	0.212878	0.720583
Frank Marino	0.294362	0.213344	0.212878	0.720583
Male stripper	0.285076	0.180139	0.227553	0.692768
Hypnotist	0.285076	0.180139	0.227553	0.692768
Total	3.163395	1.809004	2.036943	7.009342

The following table summarizes the average win for each spin.

Average Win Summary

Spin	Expected win
1	0.646025
2	1.082253
3	1.659646
4	2.390213
5	3.284038
6	4.348838
7	5.589755
8	7.009342
Total	26.010110

The final table for the Ticket Bonus section shows the probability of 3 to 5 Ticket Bonus symbols in the initiating spin, multiplier, and contribution to the return. The right column is the expected win, which is the product of the probability, average bonus base win of 26.010110, and the multiplier. The lower right cell shows the Ticket Bonus contributes 20.5212% to the return of the game.

Scatters	Probability	Multiplier	Exp. win
5	0.000007	10	0.001884
4	0.000350	3	0.027313
3	0.006767	1	0.176016
Total	0.007124		0.205212

Summary

The final table shows the contribution from each element of the game. The lower right cell shows a total return of 97.005%.

Item	Return
Line pays	56.865%
Implosion Bonus	19.619%
Ticket Bonus	20.521%
Total	97.005%