

Bill Zender's *Casino-ology*

“Opportunity is missed by most people because it is dressed in overalls and looks like work”.
-Thomas A. Edison US inventor (1847 - 1931)

April 2009

Can anyone count cards and beat the game of Spanish 21? Are there really people out there that are actually professional Spanish 21 advantage players? Players who train themselves to play and count effectively enough to overcome a game which rules require the casinos to “short deck” the customers. Are there enough Spanish 21 games available to make it worth a professional player's time to memorize the game's bizarre basic strategy and different count structure?

Believe it or not, there are facts which back up these last several allegations. Information released in the last year indicate that, not only is Spanish 21 beatable, but would definitely be in the professional players best interest to take on the casinos who offer this different version of the standard blackjack game (it's actually very close to the game of Pontoon).

Are you interested in all the gory details? Then please grab a good old cup of Joe and sit back. I hope you enjoy this month's Casino-ology.

Can Anyone Successfully Count Spanish 21?

All this hoopla about Spanish 21 started last fall when I received an e-mail from a live games manager from Northern California. She was concerned with a couple of players who were evaluated to count cards on their standard six deck blackjack games. After a period of absence, the two returned and started playing six deck Spanish 21. Of course, the current belief at that time was “no one” was counting the Spanish 21 game. Since then I've received a number of e-mails from casino executive asking the same question, “Can anyone beat Spanish 21 by counting cards?”

There are several reasons why this belief existed. First, four “10” value cards are removed from every deck of cards (the “10's” actually). Everyone who is a student of the game of blackjack knows that the removal of four 10 value cards increases the house's advantage by approximately 2% (1/2 of a percent for each “ten” removed). Even though the game rules are such that they give back most of the removal loss, the strategy necessary to achieve these gains is very taxing and mind boggling to the average blackjack player.

Second, there are a limited number of Spanish 21 games throughout North America. Limited number of games means limited amount of opportunity for someone who takes the time to learn

the confusing basic strategy and make the adjustments from standard card count that is necessary when playing Spanish 21. Third, usually the limits in Spanish 21 are much lower than the standard blackjack games. This limits a professional player's ability to bet enough to make a decent EV (earn value) while playing unnoticed and undetected. Finally, there hasn't been much information available about the game. It hasn't been examined in any great detail until just recently. Based on these factors Spanish 21 has gone unnoticed and not played by most advantage players.

Applying Card Counting Mechanics to the Game of Spanish 21

Last year, a book was released by a woman from Australia who has an extensive background in mathematics, computer programming, and engineering. Katarina Walker compiled a very interesting book on the game titled, *The Pro's Guide to Spanish 21 and Australian Pontoon* (2008). After reading through this book I realized that I had been wrong about Spanish 21 and it's opportunity to be exploited through card counting. In 187 pages Walker lays out a compelling argument that Spanish 21 is a very beatable game to anyone who will take the time and effort to learn the game's basic strategy (the hard part) and how the removal of four 10's affects the count and the exploitable points of the game.

Following are some of the facts that you need to know about Spanish 21:

- The basic strategy is different because there are a number of play options that are not available in standard 21. The rules of Spanish 21 allows for redoubling, draws to split Aces, and doubling on any number of cards.
- The removal of the four 10's per deck requires a different conversion system from running count to true count. Since there are 48 cards per deck instead of the standard 52, true count conversion changes from dividing by a whole deck to dividing by fraction of the decks.
- Using a Hi-Low count system, the run count starts off from the top of a six deck shoe at -24 (four 10's X 6 decks). If you were to count down the entire six decks (288 cards) you would end with an "even" count.
- Using the Hi-Low count, the true count pivot point (when the player gains the advantage over the house) is -2. In the regular game of blackjack the pivot point is +1.
- The higher percentages of Aces in the shoe (4 in 48) partially offset the effect from the reduced number 10's.
- Because of the reduced number of 10's in the shoe, Insurance is never profitable. The index number for Insurance is +7 TC, which Walker explains, may never occur in a life time of playing Spanish 21.
- The game requires only a limited number of play indices to gain a maximum advantage. Similar to the use of Schlesinger's "The Illustrious 18", there are only nineteen important indices to remember and use (twenty if you include Insurance).

After reading through Walker's material I was able to build a model for projecting win rate and hourly win in dollars based on six deck hitting soft 17. The model is based on Arnold Snyder's *Beat the Six Deck Game*. Combining Snyder's model with Walker's material helps illustrate the difference in true count and the true count's relationship regarding shift in advantage percentages. The model also shows the expected gains of the card counter when he or she is

wagering from one unit of \$25 to 20 units, totaling \$500. Even with a win rate of 0.87%, the Spanish 21 card counter can expect an average dollar win of approximately \$38 per hour (based on 60 hands). Following is a model based on a six deck game with 75% deck penetration:

Spanish 21 – Six Deck – Hit Soft 17 – 75% Deck Penetration

Spread		From		To		
Standard		1		20		
Base Unit		\$ 25		\$ 500		
True Count	P/A	Freq	Hands	bet unit	Handle	Gain
-14	-3.43%	0.09%	0.09	1	0.09	0.00
-13	-3.42%	0.11%	0.11	1	0.11	0.00
-12	-3.36%	0.22%	0.22	1	0.22	-0.01
-11	-3.19%	0.42%	0.42	1	0.42	-0.01
-10	-3.01%	0.79%	0.79	1	0.79	-0.02
-9	-2.75%	1.49%	1.49	1	1.49	-0.04
-8	-2.44%	2.70%	2.70	1	2.70	-0.07
-7	-2.06%	4.89%	4.89	1	4.89	-0.10
-6	-1.68%	8.98%	8.98	1	8.98	-0.15
-5	-1.23%	16.91%	16.91	1	16.91	-0.21
-4	-0.73%	26.96%	26.96	1	26.96	-0.20
-3	-0.22%	16.92%	16.92	1	16.92	-0.04
-2	0.39%	8.99%	8.99	5	44.95	0.18
-1	1.00%	4.89%	4.89	10	48.90	0.49
0	1.62%	2.60%	2.60	20	52.00	0.84
1	2.29%	1.50%	1.50	20	30.00	0.69
2	2.97%	0.79%	0.79	20	15.80	0.47
3	3.64%	0.42%	0.42	20	8.40	0.31
4	4.30%	0.22%	0.22	20	4.40	0.19
5	4.99%	0.11%	0.11	20	2.20	0.11
6	5.80%	0.09%	0.09	20	1.80	0.10
					288.93	2.52
Hands	100	Avg Bet \$	\$ 72.17			
Avg Bet units	2.89	Win/Hr	\$ 37.77			
Gain Hand	0.03	60 hands				
Win Rate	0.87%					
Pos Hands	19.6					

Note that the estimated hourly win is based on 60 rounds per hour. This would be conducive to a counter sitting on a game with several other players. If the counter played on a game solo, the number of rounds would easily double which also doubles the hourly win in dollars.

Final Thoughts

I was wrong. Spanish 21 can be counted and can be beaten in the same manner as regular blackjack. If you offer Spanish 21, I suggest you consider building yourself an arsenal of weapons to help defend against a possible card counting threat.

First, I strongly suggest you purchase Katarina Walker's book on Spanish 21. It's written more from a mathematical standpoint but even the "non-mathematic" casino executive will gain a wealth of knowledge from various topics in this book. A number of gaming book stores carry Walker's book including Amazon.com. *The Pro's Guide to Spanish 21 and Australian Pontoon* (2008) by Katarina Walker (ISBN: 978-1-4357-1065-8).

Second, you may wish to visit Michael Shackelford's website. He has an extensive array of basic strategy charts and other information on Spanish 21 (www.wizardofodds.com)

Third, if you e-mail me I'll send you a copy of the spreadsheet I've used in this article. I have several different spread sheets for the various levels of deck penetration, including a list of important index decisions, all on Excel. All you have to do is ask. (wzender@lastresortconsulting.com, or wzender@aol.com)

The logo for Last Resort Consulting features the text "Last Resort Consulting" in a bold, white, serif font. The text is set against a dark, rectangular background with a subtle gradient and a slight shadow effect, giving it a three-dimensional appearance.