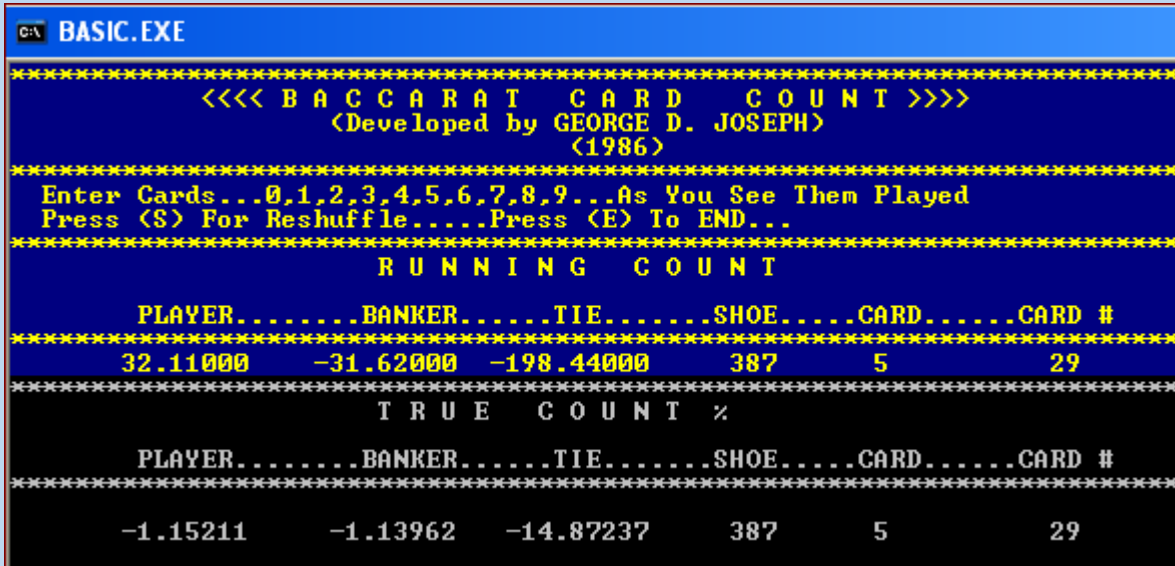


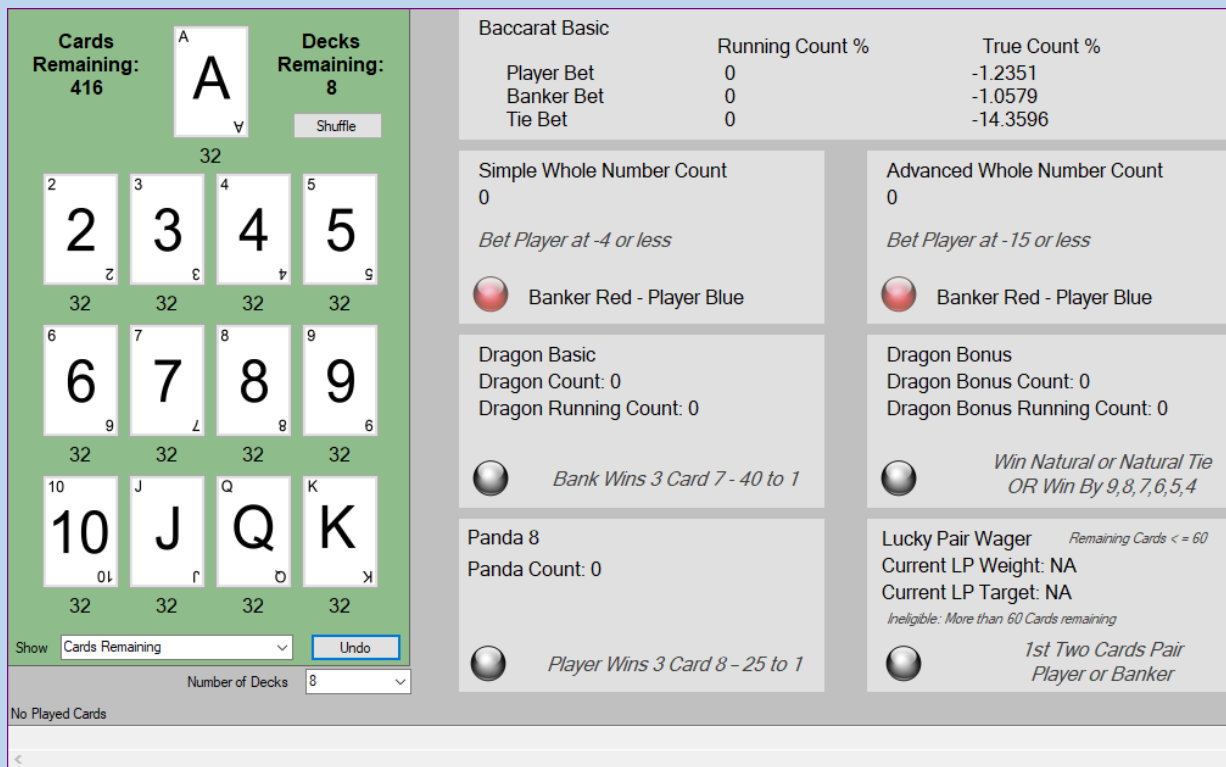
# Baccarat Card Counting

Developed by George Joseph - Worldwide Casino Consulting



Version @ 1986

Version @ 2021



# Baccarat Card Count

## Quick Reference Guide

The screenshot shows the main interface of the Baccarat Card Count software. On the left, there is a grid of cards from 2 to King, each with a '32' value below it. Above the grid, it shows 'Cards Remaining: 416' and 'Decks Remaining: 8'. Below the grid are controls for 'Show Cards Remaining' (a dropdown menu), 'Undo', and 'Number of Decks' (set to 8). On the right, there are several strategy panels:

- Baccarat Basic:** Running Count % (0), True Count % (-1.2351 for Player Bet, -1.0579 for Banker Bet, -14.3596 for Tie Bet).
- Simple Whole Number Count:** Running Count 0, Bet Player at -4 or less, Banker Red - Player Blue.
- Advanced Whole Number Count:** Running Count 0, Bet Player at -15 or less, Banker Red - Player Blue.
- Dragon Basic:** Dragon Count: 0, Dragon Running Count: 0, Bank Wins 3 Card 7 - 40 to 1.
- Dragon Bonus:** Dragon Bonus Count: 0, Dragon Bonus Running Count: 0, Win Natural or Natural Tie OR Win By 9,8,7,6,5,4.
- Panda 8:** Panda Count: 0, Player Wins 3 Card 8 - 25 to 1.
- Lucky Pair Wager:** Remaining Cards <= 60, Current LP Weight: NA, Current LP Target: NA, Ineligible: More than 60 Cards remaining, 1st Two Cards Pair Player or Banker.

- Click on each card played (Include the Burn Card(s))

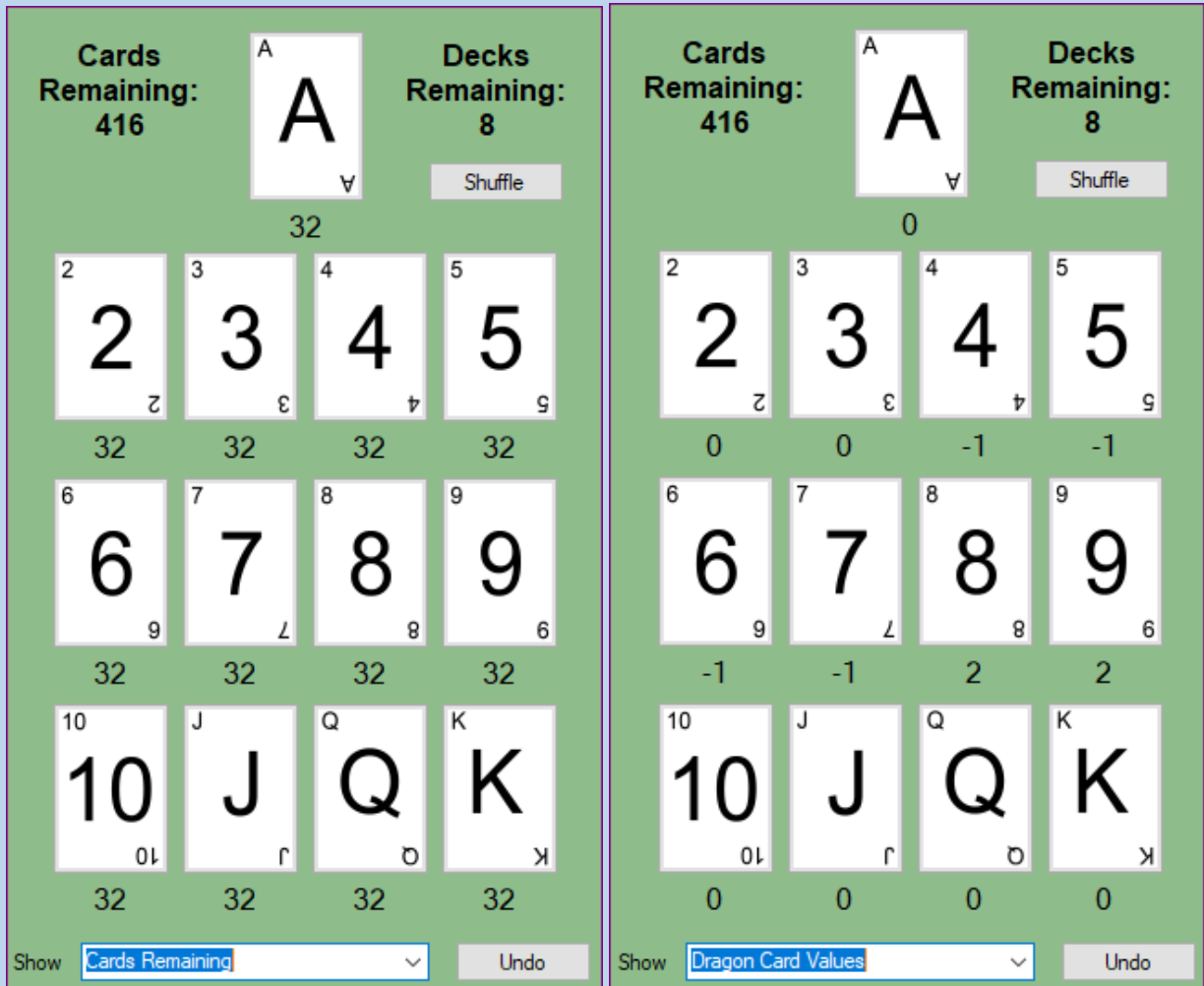
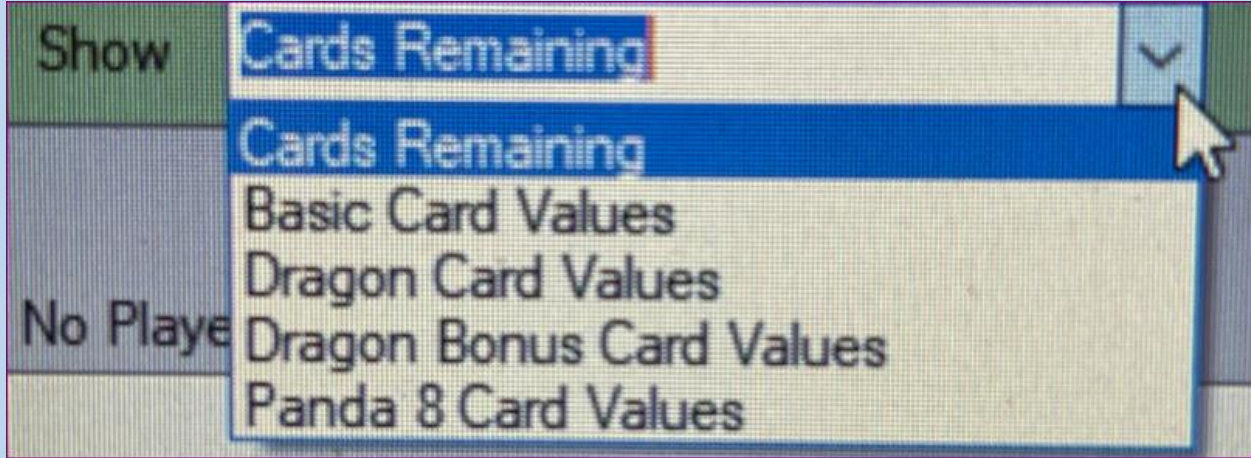
The screenshot shows the 'Played Cards' list in the software. It displays a list of 13 cards: King, Queen, Jack, Ten, Nine, Eight, Seven, Six, Five, Four, Three, Two, Ace. Below the list is a scroll bar.

- Card values will begin to populate along the bottom

The screenshot shows the software interface with the 'Undo' button highlighted in the 'Show Cards Remaining' section and the 'Shuffle' button highlighted in the 'Cards Remaining' section.

- Card entry errors can be corrected by clicking Undo
- Click Shuffle to begin a New Shoe or to reset

- Click the down arrow to display one of the following;



- Remaining card amounts or Card Count Values appear under each card

## Explaining Various Baccarat Card Count Elements

- As you enter each card the program calculates a Baccarat Basic Running Count and True Count.

Baccarat Basic	Running Count %	True Count %
Player Bet	0	-1.2351
Banker Bet	0	-1.0579
Tie Bet	0	-14.3596

(The True Count Numbers shown above are the mathematical starting advantages for the House over the Player, Banker and Tie based upon the work of Peter Griffin and Edward Thorp)

- Three calculations are made for each card drawn to show the effect of card removal on the Player Side, Banker Side and Tie...i.e., Ace;

Baccarat Basic	Running Count %	True Count %
Player Bet	-1.86	-1.2396
Banker Bet	1.82	-1.0535
Tie Bet	5.37	-14.3467

## Effect of Card Removal in Baccarat

Card Value	Player Bet	Banker Bet	Tie Bet
Ace	-1.86	1.82	5.37
2	-2.25	2.28	-9.93
3	-2.79	2.69	-8.88
4	-4.96	4.80	-12.13
5	3.49	-3.43	-10.97
6	4.69	-4.70	-48.12
7	3.39	-3.44	-45.29
8	2.21	-2.08	27.15
9	1.04	-.96	17.68
10,J,Q,K	-.74	.78	21.28
Full Shoe %	-1.23508	-1.05791	-14.3596

Calculating these numbers in your head is next to impossible



**NOTE: Although very large Running Count Numbers will be encountered, for a mathematical advantage to exist the Baccarat True Count must be a Plus Number....**

Baccarat Basic	Running Count %	True Count %
Player Bet	-270.27	-2.6354
Banker Bet	270.70	0.3447
Tie Bet	1420.09	-7.0016

Based on the work of several mathematicians, a positive True Count will only occur approximately three (3) times in every five hundred (500) hands. The reasoning is this;

- Baccarat is strategically static...(No customer decision to Draw a 3<sup>rd</sup> Card or not...The Cards Play Themselves)
- No additional in game wagers (Like Doubling or Splitting)
- There is no Bonus Payoff for the best hand in Baccarat...(In Blackjack a \$100.00 Wager yields \$150 on a winning Blackjack)
- In Baccarat a \$100 Winning Natural 9 yields Even Money or \$95.00
- Card Values are drastically stronger and weighted more heavily in Blackjack as opposed to Baccarat. An abundance of high cards favors players in Blackjack and prompts larger wagers. An abundance of small cards in Blackjack favors the House and prompts small wagers. (10s & Aces are weighted in favor of the players due to BJ Payoff, Doubles and money decisions.) (2,3,4,5,6's are weighted in favor of the House) There is no such parallel in the Basic Game of Baccarat.
- Three calculations must be made for each card played. The actual indices are 3 or 4 digits with decimal points which makes an Optimum Running Count and True Count conversion virtually impossible to negotiate in the head. There are however several Simple & Advanced Baccarat Whole Number Counts.

## Understanding the Simple or Advanced Whole Number Counts

Simple Whole Number Count 0 <i>Bet Player at -4 or less</i>  Banker Red - Player Blue	Advanced Whole Number Count 0 <i>Bet Player at -15 or less</i>  Banker Red - Player Blue
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**NOTE:** The first and most important element to understand is that if a player is using a Baccarat Whole Number Count System, they will only be using one...The Simple Count "OR" Advanced Count...But Not Both.

As a quick example, consider a Blackjack Basic Balanced Count versus a Weighted Mid-Level and Advanced Card Count Systems.



	CARD COUNT VALUES										
	2	3	4	5	6	7	8	9	10	ACE	
Basic	1	1	1	1	1	0	0	0	-1	-1	
Mid-Level	2	3	3	4	3	2	0	-1	-3	-4	
Advanced	5	6	8	11	6	4	0	-3	-7	-9	

Most card counters and surveillance departments use the Basic Balanced Card Count...+1 "0" -1. (Simple to negotiate) The Mid-Level and Advanced Weighted Counts assign different values to each card and are more accurate, but more difficult. A card counter uses only one count system.



Similarly, a Baccarat Card Counter using a Whole Number Count System is using only the Simple Count System or the Advanced Count System...But not both.



Both Whole Number Systems begin at 0...The Red Alert Lights indicate the Bank Side has a starting advantage over the Player Side...Notice also the attack numbers for switching to the Player Side.

<p>Simple Whole Number Count 0</p> <p><i>Bet Player at -4 or less</i></p> <p> Banker Red - Player Blue</p>	<p>Advanced Whole Number Count 0</p> <p><i>Bet Player at -15 or less</i></p> <p> Banker Red - Player Blue</p>
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**NOTE: The Baccarat Whole Number Counts indicate which Side has the least disadvantage, Player Side VS Banker Side...  
But not Player Side or Banker Side versus the House**



<p>Simple Whole Number Count -4</p> <p><i>Bet Player at -4 or less</i></p> <p> Banker Red - Player Blue</p>	<p>Advanced Whole Number Count -12</p> <p><i>Bet Player at -15 or less</i></p> <p> Banker Red - Player Blue</p>
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If a customer moves from Banker to Player only when the Blue Light alerts on the Simple Whole Number Count & then back to Banker on the Red Light...They are likely following the Simple Count...So disregard the Advanced Whole Number Count.

<p>Simple Whole Number Count -7</p> <p><i>Bet Player at -4 or less</i></p> <p> Banker Red - Player Blue</p>	<p>Advanced Whole Number Count -15</p> <p><i>Bet Player at -15 or less</i></p> <p> Banker Red - Player Blue</p>
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Be cautious when both Blue Lights alert....

If the customers moves Back and Forth to the Bank Side based upon only the Advanced Whole Number Alerts...Then disregard the Simple Whole Number Count.

<p>Simple Whole Number Count -6</p> <p><i>Bet Player at -4 or less</i></p> <p> Banker Red - Player Blue</p>	<p>Advanced Whole Number Count -14</p> <p><i>Bet Player at -15 or less</i></p> <p> Banker Red - Player Blue</p>
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The operator should also accept the distinct possibility that the customers are just guessing and are accidentally or sporadically on the same side as the alert lights. (Baccarat is basically a “Flip” of a Coin)

This program is intended to and will most often prove the negative...Meaning the customer beats the House but is not utilizing a valid card count system and did not have an advantage when doing so.

## Explaining Various Baccarat Side Bets

Playing card ranks do have weight in regards to various Baccarat Side Wagers and can easily be counted to advantage in live play.

### 40 to 1 Dragon 7 - 25 to 1 Panda 8 - Dragon Bonus - Lucky Pairs

<p>Dragon Basic Dragon Count: 0 Dragon Running Count: 0</p> <p> <i>Bank Wins 3 Card 7 - 40 to 1</i></p>	<p>Dragon Bonus Dragon Bonus Count: 0 Dragon Bonus Running Count: 0</p> <p> <i>Win Natural or Natural Tie OR Win By 9,8,7,6,5,4</i></p>
<p>Panda 8 Panda Count: 0</p> <p> <i>Player Wins 3 Card 8 - 25 to 1</i></p>	<p>Lucky Pair Wager <i>Remaining Cards &lt;= 60</i> Current LP Weight: NA Current LP Target: NA <i>Ineligible: More than 60 Cards remaining</i></p> <p> <i>1st Two Cards Pair Player or Banker</i></p>



- **Dragon 7** is when the Bank Side wins with a three-card hand totaling 7  
Player Loses - Tie Loses - Bank Pushes...Dragon 7 Wins 40 to 1.  
(Occurs once every 43.38 hands = 7.61% House Edge)
- **Panda 8** is when the Player Side wins with a three-card hand totaling 8  
Bank Loses - Tie Loses - Player Pushes...Panda 8 Wins 25 to 1.  
(Occurs once every 27.95 hands = 10.18% House Edge)
- **The Dragon Bonus (Win By)** wins according to the chart below...

EVENT	PLAYER	BANKER
WIN BY 9 POINTS . . . . .	30 TO 1	30 TO 1
WIN BY 8 POINTS . . . . .	10 TO 1	10 TO 1
WIN BY 7 POINTS . . . . .	6 TO 1	6 TO 1
WIN BY 6 POINTS . . . . .	4 TO 1	4 TO 1
WIN BY 5 POINTS . . . . .	2 TO 1	2 TO 1
WIN BY 4 POINTS . . . . .	1 TO 1	1 TO 1
NATURAL WINNER. . . . .	1 TO 1	1 TO 1
NATURAL TIE . . . . .	PUSH	PUSH

- However, based on simulations conducted by Elliot Jacobson, PHD., it is not worth counting the Banker Side. Notice the chart below;

Dragon Bonus Side Bet: Player Bet						Dragon Bonus Side Bet: Banker Bet					
Hand	N	p	EV	p*EV	VAR	Result	N	p	EV	p*EV	VAR
Win by 9	18409431764992	0.003683	30	0.11049	3.32062	Win by 9	15390342909952	0.00308	30	0.09237	2.77605
Win by 8	34097645543424	0.006822	10	0.06822	0.68579	Win by 8	28305092784128	0.00566	10	0.05663	0.56929
Win by 7	89590261473280	0.017924	6	0.10754	0.65097	Win by 7	79517099278336	0.01591	6	0.09545	0.57778
Win by 6	141238897317888	0.028257	4	0.11303	0.45812	Win by 6	119200072366080	0.02385	4	0.09539	0.38664
Win by 5	166169165987840	0.033244	2	0.06649	0.13653	Win by 5	157275882332160	0.03147	2	0.06293	0.12922
Win by 4	186780352174080	0.037368	1	0.03737	0.09938	Win by 4	201147167287296	0.04024	1	0.04024	0.04240
Natural win	812685054124032	0.162589	1	0.16259	0.17133	Natural win	812685054124032	0.16259	1	0.16259	0.17133
Natural push	89325908267520	0.017871	0	0.00000	0.00001	Natural push	89325908267520	0.01787	0	0.00000	0.00001
Loss	3460101558850300	0.692242	-1	-0.69224	0.65602	Loss	3495551656153850	0.69933	-1	-0.69933	0.66274
Total	4998398275503360	1.000000		-0.02652	6.118771	Total	4998398275503350	1.00000		-0.09373	5.31546

House Edge Player Side is -0.02652 House Edge on Bank Side is -0.09373



A House Advantage of 9.373% is too formidable to overcome. As a general observation then, a customer can never have the edge over the house when betting the Banker Bonus (Win By) Side Bet.

- **Lucky Pairs** pays 11 to 1 on any dealt Pair to either Player or Banker. Customers can wager on Player or Banker or both...(Each Rank is counted separately...A viable advantage however does not occur until 60 or fewer cards remain.)

## Baccarat Side Bet Counts are very straight forward

<p>Dragon Basic Dragon Count: 4.2341 Dragon Running Count: 32</p> <p> <i>Bank Wins 3 Card 7 - 40 to 1</i></p>	<p>Dragon Bonus Dragon Bonus Count: -5.0280 Dragon Bonus Running Count: -38</p> <p> <i>Win Natural or Natural Tie OR Win By 9,8,7,6,5,4</i></p>
<p>Panda 8 Panda Count: 2</p> <p> <i>Player Wins 3 Card 8 - 25 to 1</i></p>	<p>Lucky Pair Wager <i>Remaining Cards &lt;= 60</i> Current LP Weight: NA Current LP Target: NA <i>Ineligible: More than 60 Cards remaining</i></p> <p> <i>1st Two Cards Pair Player or Banker</i></p>

## Customers have an advantage when the Red Light alerts.

<p>Dragon Basic Dragon Count: -1.1969 Dragon Running Count: -9</p> <p> <i>Bank Wins 3 Card 7 - 40 to 1</i></p>	<p>Dragon Bonus Dragon Bonus Count: 7.1816 Dragon Bonus Running Count: 54</p> <p> <i>Win Natural or Natural Tie OR Win By 9,8,7,6,5,4</i></p>
<p>Panda 8 Panda Count: -35</p> <p> <i>Player Wins 3 Card 8 - 25 to 1</i></p>	<p>Lucky Pair Wager <i>Remaining Cards &lt;= 60</i> Current LP Weight: NA Current LP Target: NA <i>Ineligible: More than 60 Cards remaining</i></p> <p> <i>1st Two Cards Pair Player or Banker</i></p>

**NOTE:** As explained earlier, the Dragon Bonus (Win By) Wager is countable for the Player Side only. Therefore, the Alert Light will only Alert in *"Blue"*...Meaning Player (Win By) Wager has an advantage.

<p>Dragon Basic Dragon Count: 10.2175 Dragon Running Count: 56</p> <p> Bank Wins 3 Card 7 - 40 to 1</p>	<p>Dragon Bonus Dragon Bonus Count: -30.1053 Dragon Bonus Running Count: -165</p> <p> Win Natural or Natural Tie OR Win By 9,8,7,6,5,4</p>
<p>Panda 8 Panda Count: 35</p> <p> Player Wins 3 Card 8 - 25 to 1</p>	<p>Lucky Pair Wager <i>Remaining Cards &lt;= 60</i> Current LP Weight: NA Current LP Target: NA <i>Ineligible: More than 60 Cards remaining</i></p> <p> 1st Two Cards Pair Player or Banker</p>

An advantage could occur on more than one wager at a time

Surveillance should also note whenever a customer wagers on a Side Bet but does not have an advantage (No Light) (Proves the Negative)

<p>Lucky Pair Wager <i>Remaining Cards &lt;= 60</i> Current LP Weight: 246 Current LP Target: 213 <i>Weight is greater than Target</i></p> <p> 1st Two Cards Pair Player or Banker</p>
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A Count for Lucky Pairs is not viable until 60 Cards or fewer remain.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Ace	2	3	4	5	6	7	8	9	Ten	Jack	Queen	King		
2	30	28	28	27	27	30	26	24	31	31	24	32	24	362 Cards Played	
3	2	4	4	5	5	2	6	8	1	1	8	0	8	54 Unseen Cards	
4	2	12	12	20	20	2	30	56	0	0	56	0	56	266 LP Weight	
5	With 54 Unseen Cards Over this Distribution the Lucky Pair Weighted Plus # Needs to be 221 or greater...at 266 LP has the Advantage														

Each Rank is counted and given an LP Weight. With 54 unseen cards you'd expect four of each rank remaining. Notice an Abundance of 4s, 5s, 7s, 8s, Js & Ks... The customer has the advantage, but must wager on both Player & Bank Lucky Pairs.

NOTE: There are Card Count Systems which target the Baccarat Tie bet. But if a casino offers 8 to 1 (9 for 1), the House has a 14.36% Starting Advantage. This is impossible to profitably count. However, if a casino offers a 9 to 1 (10 for 1) Tie Bet Payoff, the Starting Advantage is 4.84%. (Could be profitably counted.)

(REF: Wizard of Odds - 888 Casino - Edward Thorp - Peter Griffin - William Walden)