Analysis
For
Hold'em 3 Bonus
April 9, 2014

Prepared
For
John Feola
New Vision Gaming
5 Samuel Phelps Way
North Reading, MA 01864

Office: 978 – 664 - 1515
Fax: 978 - 664 - 5117
www.newvisiongaming.com

Prepared
by

Elliot Frome
P.O. Box 36474
Las Vegas, NV 89133
Office: 702 - 834 - 5930
www.gambatria.com

Analysis of Hold'em 3 Bonus

This analysis was prepared for John Feola of New Vision Gaming by Elliot Frome of Gambatria. Any questions regarding this analysis should be directed to Gambatria. Gambatria can be reached by phone at 702-834-5930 or by e-mail at elliot@gambatria.com.

Game Description:

Hold'em 3 Bonus is a casino game loosely based on the poker variant known as Texas Hold'em. In Hold'em 3 Bonus the goal is to attain a 5-card hand greater than the Dealer's 5-card hand. Hold'em 3 Bonus uses a standard 52-card deck.

To begin play, each Player makes an Ante and 1st Wager of equal size. The Player and Dealer are each then dealt three cards face down. The Dealer will also deal two cards face up in the middle of the table. This is known as the Flop, and these are community cards. They can be used by any/all Players and the Dealer.

At this point, the Player has three choices. He may Fold, forfeiting his Ante and 1st Wager, or he may make a 2nd Wager equal to his 1st Wager or he may make a 2nd Wager that is 2 times his 1st Wager. Once all Players have made their decision, the Dealer will turn over two more community cards face up in the middle of the table. These are the Turn and the River. Again, any/all Players and the Dealer may use any/all of these cards to complete his hand.

The Dealer will next expose his three hole cards and make the best possible 5-card hand from the seven cards (his three hole cards plus the four community cards). He will then compare his hand to each Player's hand (that did not Fold).

If the Player's hand is greater than the Dealer's hand, the Player will win even money for his 1st and 2nd Wager. If the Player's hand is at least a Straight or better, his Ante will be paid according to the Ante Bonus paytable.

If the Dealer's hand is greater than the Player's hand, the Player will lose his 1st and 2nd Wager. If the Player's hand is lower than a Straight, he will also lose his Ante Wager. If the Player's hand is a Straight or better, he will still win an Ante Bonus as per the Ante Bonus paytable. In this case, the Player will retain his original Ante Wager.

If the Dealer's hand and Player's hand tie, the Player's 1st and 2nd Wager will push. If the Player's hand is lower than a Straight, his Ante Wager will also push. If the Player's hand is a Straight or better, he will still win an Ante Bonus as per the Ante Bonus paytable.

The following table contains the Ante Bonus Paytables that have been created for Hold'em 3 Bonus:

Hand	AB2-01 Pays**	AB2-02 Pays*	AB2-03 Pays*
7-Card Royal Flush	NA	$25,000	$25,000
7-Card Straight Flush	NA	$10,000	$10,000
5-Card Royal Flush	500	500	250
Straight Flush	50	50	50
Four of a Kind	10	10	10
Full House	4	4	4
Flush	2	2	2
Straight	1	1	1
Payback	**97.7197%**	**97.7417%**	**97.5105%**
House Advantage	2.2803%	2.2583%	2.4895%

* The top 2 payouts are Fixed Pays TO 1. All other pays are Odds Pay TO 1
** All pays are Odds Pay TO 1

Appendix A analyzes an alternate betting structure whereby the Player cannot wager 2x after the Flop. His only choice is to Play 1x or Fold

Hold'em 3 Bonus offers two optional side bets. One sidebet is a 3-Card Bonus based on the Player's 3 hole cards. The Player is paid if his 3 hold cards matches one of the payouts listed in the 3-card Bonus paytable. The other sidebet is based on a 6-Card Bonus paytable. For this sidebet, the Player's 3 hole cards are combined with the Dealer's 3 hole cards. If the hand matches a payout listed in the 6-card Paytable, the Player wins.

Appendix B lists the paytables for the 6-Card Bonus and Appendix C lists the paytables for the 3-Card Bonus.

Analysis Methodology:

Because of the total number of cards dealt, it is not possible to analyze every possible hand combination.   Instead, a program was created which can be set with a specific three cards as the Player's hole cards and specific two cards as the Flop. The program then plays 100,000 random hands (the Dealer's hole cards and the Turn and River) and tabulates the frequency that the Player wins/loses/ties and the rank of his final hand.

Using these statistics, a proper play strategy can be developed. A complete simulation of the game is then played utilizing this strategy, which provides the overall payback of the game.

Games with community cards, do not allow for strategy to be defined simply by the rank of the Player's hand. Because two of the cards belong to both the Player and Dealer, every hand must be defined relative to the strength of the Flop. For example, to simply say that the Player has a Pair of Aces after the Flop is meaningless because the Flop may contain the Pair of Aces while the Player's hole cards might be 2-3. This is vastly different than the Player having a Pair of Aces as his hole cards or even the Player having an Ace and the Flop having an Ace.

The strategy is geared to determine if the Player should fold, wager 1x or wager 2x. The decision to wager 2x is based on whether or not the Player will win the hand more often than if he loses the hand. Any time the Player will win more often than he will lose, he will want to major as much as the game allows.

The decision to bet 1x vs Fold is a bit more complex. In order to wager 1x, the Player must win back at least this one additional unit in total by wagering it. Not including an Ante Bonus award, the Player will win back a total of 5 units when he wins. Thus, the Player must win approximately 20% of his hands in order to not fold. This is an 'approximate' number because Ties and Ante Bonuses must be taken into account as well.

There is no easy way to quantify either the 20% threshold or the 'win more often than lose' threshold, which is why a simulation program is used. Dozens of hand combinations are simulated and the results tabulated to determine what the proper strategy is for these beacon hands. It is impossible to create a perfect strategy. Instead the goal is a human playable strategy. While there will be a small margin of error vs. a theoretically perfect strategy, this margin is mitigated further when the fact that playing perfectly is simply not possible by any human.

Results:

There are very few hands that warrant Folding. This is simply the nature of Texas Hold'em after the Flop. In order to find these hands, numerous hands were run though the simulation program. The following is the criteria for when a Player should fold a hand:

- All 3 Player cards must be 8 or less, but NONE of the following may also exist:
  - Any Pair (or better) amongst the Player Cards and the Flop
  - No 4-Card Straights (Inside or Outside) or 4-Card Flushes
  - If a 3-Card Flush exists (of the five cards), then the Player's highest card must be a 7 with a 2 as his lowest card OR his highest card must be a 6 or less
  - If there are 3 distinct 3-Card Straights (Outside, Inside or Double Inside) amongst the five cards (i.e. 4-5-7-9-J where the 4-5-7 are the Player's cards).

Wagering 1x vs 2x

Any time the Player has a hand that will result in his hand winning more often than losing, he should Wager 2x on the 2nd wager. As stated earlier, many hands need to be described relative to the Flop as the Flop belongs to the Dealer's hand as well. The following is when the Player should wager 2x:

- If the Player has a Two Pair or better.
- If the Player has a Pocket Pair of a Pair of 7's or Better
- If the Player has a Pair that includes one of his cards and one card from the Flop and it is a Pair of 4's or Better
- If the Flop is a Pair of Aces and the Player has a King-10 or better
- If the Flop is a Pair (but not Aces) and the Player has an Ace-Jack or Better
- If the Player has a 4-Card Flush
- If the Player has a 4-Card Straight (Inside or Outside) AND a Pair that is not made up only of the Flop

All other hands that are not folded and are not wagered at 2x are wagered at 1x.

Simulation Results

Using the strategies shown above, a computer simulation of the entire game was created. This simulation ran 150 million hands of Hold'em 3 Bonus. It dealt three cards to the Player and a two card Flop. Utilizing these 5 cards, the program determined whether to Fold, Wager 1x or Wager 2x. Assuming the Player did not fold, the remaining cards were dealt. The program then paid or collected the Player's wagers depending on whether the Player won or lost and the rank of the Player's hand (for the Ante Bonus).

Key statistics of the simulation are shown in the table below. This assumes the paytable of AB2-02.

Total Hands Played	150,000,000
Total Hands Folded	3,823,045
Total Hands Wager 2x	66,584,503
Total Hands Wager 1x	79,592,452
% Hands Folded	2.55%
% Hands Wager 2x	44.39%
% Hands Wager 1x	53.06%
Total Units Wagered	512,761,458
Total Hands Player Wins	73,392,850
Total Hands Player Loses	71,115,472
Total Hands Push	1,668,533
Total Units Returned (not including Ante Bonus)	461,731,287
Units returned as Ante Bonus	39,450,545
Total Units Returned	501,181,832
Overall Payback	97.7417%

The following tables shows the details of the units returned as a result of the Ante Bonus. For the 7-Card Royal and 7-Card Straight Flush, we use $5000 and $2000, respectively as these are fixed payouts with an assumed $5 minimum wager:

Player Won or Pushed

Hand	Occurrences	Pays*	Total Units
7-Card Royal	9	5000	45,000
7-Card Straight Flush	37	2000	74,000
5-Card Royal	4,743	500	2,371,500
Straight Flush	41,463	50	2,073,150
Four of a Kind	249,811	10	2,498,110
Full House	3,727,636	4	14,910,544
Flush	4,155,204	2	8,310,408
Straight	6,314,590	1	6,314,590

Player Lost

Hand	Occurrences	Pays*	Total Units
5-Card Royal	0	501	0
Straight Flush	70	51	3,570
Four of a Kind	3,418	11	37,598
Full House	157,504	5	787,520
Flush	353,627	3	1,060,881
Straight	481,837	2	963,674

If the Player lost the hand, the Ante Wager would normally have been lost, but if he has a Straight or Better, he will retain this unit. Thus when the Player loses, the Ante Bonus pays 1 more than if he won or pushed. In the cases where he won or pushed, the return of the original Ante Wager is accounted for in the base game.

Hold'em 3 Bonus
Appendix A
Alternate Betting Structure

In this variant of Hold'em 3 Bonus, the Player does not have the option to Play 2x after the Flop. His only choice is to Fold or Play 1x. This reduces the payback to the Player. To offset this, higher Ante Bonuses are offered to the Player.

Numerous Ante Bonus paytables have been created for this variant. They are shown in the tables below, along with their overall paybacks and house advantages:

Hand	AB1-01 Pays*	AB1-02 Pays*	AB1-03 Pays*	AB1-04 Pays*	AB1-05 Pays*	AB1-06 Pays*
7-Card Royal Flush	$25000	$25000	$25000	$25000	$25000	$25000
7-Card Straight Flush	$10000	$10000	$10000	$10000	$10000	$10000
5-Card Royal Flush	1000	500	200	200	200	500
Straight Flush	40	50	50	25	25	100
Four of a Kind	10	10	10	10	10	20
Full House	4	4	4	4	4	4
Flush	3	3	3	3	3	3
Straight	2	2	2	2	2	2
Three of a Kind	1	1	1	1	NA	NA
Payback	**97.0687%**	**96.6303%**	**96.3114%**	**96.0787%**	**94.1923%**	**95.7769%**
House Advantage	2.9313%	3.3697%	3.6886%	3.9213%	5.8077%	4.2231%

Hand	AB1-07 Pays*	AB1-08 Pays*	AB1-09 Pays*	AB1-10 Pays*	AB1-11 Pays*
7-Card Royal Flush	$25000	$25000	$25000	$25000	$25000
7-Card Straight Flush	$10000	$10000	$10000	$10000	$10000
5-Card Royal Flush	1000	200	200	200	200
Straight Flush	100	100	50	50	50
Four of a Kind	20	20	20	25	20
Full House	4	4	4	3	4
Flush	3	3	3	2	2
Straight	2	2	2	1	1
Three of a Kind	NA	NA	NA	NA	NA
Payback	**96.3084%**	**95.4580%**	**94.9926%**	**91.8718%**	**92.4588%**
House Advantage	3.6916%	4.5420%	5.0074%	8.1282%	7.5412%

* All Pays are TO 1 except for top 2 payouts which are FIXED Pays

<u>Analysis</u>

There is no difference in the strategy between the base version and this verison - other than all the times the Player would want to Play 2x, he can only Play 1x. This means this version of the game has relatively little strategy, with the Player only having to learn when to fold. As per the base report, this is less than 2% of the time and will not greatly impact the payback even if the Player chose to always play.

To determine the payback of this version of Hold'em 3 Bonus, a simulation of 150 million hands was run. The statistics for this simulation are shown in the table below. The only difference from one paytable to the next is the amount returned due to the Ante Bonus. The table below reflects paytable AB1-01. The details for any other paytable is available upon request. It should also be noted that any of the paytables can be offered without the top two fixed payouts with only about 0.03% difference to the payback.

Total Hands Played	150,000,000
Total Hands Folded	3,823,045
Total Hands Played	146,176,955
% Hands Folded	2.55%
% Hands Played	97.45%
Total Units Wagered	446,176,955
Total Hands Player Wins	73,392,850
Total Hands Player Loses	71,115,472
Total Hands Push	1,668,533
Total Units Returned (not including Ante Bonus)	371,969,849
Units returned as Ante Bonus	61,128,390
Total Units Returned	434,098,239
Overall Payback	97.0687%

The following tables shows the details of the units returned as a result of the Ante Bonus. For the 7-Card Royal and 7-Card Straight Flush, we use $5000 and $2000, respectively as these are fixed payouts with an assumed $5 minimum wager:

Player Won or Pushed

Hand	Occurrences	Pays*	Total Units
7-Card Royal	9	5000	45,000
7-Card Straight Flush	37	2000	74,000
5-Card Royal	4,743	1000	4,743,000
Straight Flush	41,463	40	1,658,520
Four of a Kind	249,811	10	2,498,110
Full House	3,727,636	4	14,910,544
Flush	4,155,204	3	12,465,612
Straight	6,314,590	2	12,629,180
Three of a Kind	5,951,309	1	5,951,309

Player Lost

Hand	Occurrences	Pays*	Total Units
5-Card Royal	0	1001	0
Straight Flush	70	41	2,870
Four of a Kind	3,418	11	37,598
Full House	157,504	5	787,520
Flush	353,627	4	1,414,508
Straight	481,837	3	1,445,511
Three of a Kind	1,232,554	2	2,465,108

If the Player lost the hand, the Ante Wager would normally have been lost, but if he has a Straight or Better, he will retain this unit. Thus when the Player loses, the Ante Bonus pays 1 more than if he won or pushed. In the cases where he won or pushed, the return of the original Ante Wager is accounted for in the base game.

Hold'em 3 Bonus
Appendix B
6 Card Bonus Sidebet

Hold'em 3 Bonus can offer a 6-Card Bonus Sidebet. The six cards consist of the Player's three hole cards and the Dealer's three hole cards. The Player is paid based on the best 5-card Poker hand that can be made out of the six cards (with the exception of the 6-Card Royal, which requires all six cards). Several paytables have been created for this sidebet. They are shown in the paytable below:

Hand	6CB-01	6CB-02	6CB-03	6CB-04	6CB-05	6CB-06
6-Card Royal – Diamonds	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000
6-Card Royal – Other	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000
5-Card Royal Flush	1000	1000	1000	1000	1000	1000
5-Card Straight Flush	200	250	500	200	200	250
Four of a Kind	50	100	100	50	50	50
Full House	20	25	25	25	25	25
5-Card Flush	15	20	15	20	15	20
5-Card Straight	10	10	10	10	10	10
Three of a Kind	5	5	5	5	5	5
Payback	81.9019%	95.0408%	92.0202%	91.0327%	85.9785%	91.4394%
House Advantage	18.0981%	4.9592%	7.9798%	8.9673%	14.0215%	8.5606%

* All payouts are TO 1 except for the 6-Card Royals which are fixed dollar amounts

Hand	6CB-07	6CB-08	6CB-09	6CB-10	6CB-11
5-Card Royal Flush	500	500	1000	250	1000
5-Card Straight Flush	250	250	500	100	200
Four of a Kind	100	100	200	50	50
Full House	25	25	20	25	25
5-Card Flush	20	20	15	20	20
5-Card Straight	10	10	10	10	10
Three of a Kind	5	4	5	5	5
Payback	93.3216%	89.7253%	93.8891%	88.2692%	89.7752%
House Advantage	6.6784%	10.2747%	6.1109%	11.7308%	10.2248%

* All payouts are TO 1

Analysis Methodology:

A computer program was used to determine the distribution of winning hands from a 6-card Deal. Given that the Player has no decision to make and that his wager is in action even if he folds the Ante/Play, the order of the cards is unimportant. Thus, the distribution is the standard distribution one would expect for a 5-card hand from a 6-card deal, with the exception that 4 of the 5-card Royal Flushes have been 'elevated' to be the 6-Card Royal Flushes.

Using this distribution a theoretical payback can be determined by multiplying the frequency of each hand type by its payout and summing up the values.

Results:

The distribution of 5-Card hands from a 6-card deal is shown in the table below:

Hand	Occurrences	Frequency
6-Card Royal – Diamonds	1	0.00000491%
6-Card Royal – Other	3	0.00001474%
5-Card Royal Flush	184	0.0009%
5-Card Straight Flush	1,656	0.0081%
Four of a Kind	14,664	0.0720%
Full House	165,984	0.8153%
5-Card Flush	205,792	1.0108%
5-Card Straight	361,620	1.7763%
Three of a Kind	732,160	3.5963%
Other	18,876,456	92.7202%
Total	20,358,520	100.0000%

To calculate the payback, the frequency of each winning hand is multiplied by the payout of that hand and the values summed. Because the top payouts are fixed dollar pays, we divide the payouts by the minimum wager to convert them to payouts based on single units. Thus, we use $200,001 (including the return of the original wager) for the Diamond Royal and $20,001 for the other 6-Card Royal Flushes. The following tables show this calculation for each paytable:

Paytable 6CB– 01			
Hand	Frequency	Pays*	Payback
6-Card Royal – Diamonds	0.00000491%	200,001	0.9824%
6-Card Royal – Other	0.00001474%	20,001	0.2947%
5-Card Royal Flush	0.0009%	1001	0.9047%
5-Card Straight Flush	0.0081%	201	1.6350%
Four of a Kind	0.0720%	51	3.6735%
Full House	0.8153%	21	17.1214%
5-Card Flush	1.0108%	16	16.1734%
5-Card Straight	1.7763%	11	19.5388%
Three of a Kind	3.5963%	6	21.5780%
Total	**7.2798%**		**81.9019%**

*Includes the return of the Original Wager

The win frequency is 7.2798% and the overall payback is 81.9019% for paytable 6CB-01, assuming a minimum $5 wager.

Paytable 6CB– 02			
Hand	Frequency	Pays*	Payback
6-Card Royal – Diamonds	0.00000491%	200,001	0.9824%
6-Card Royal – Other	0.00001474%	20,001	0.2947%
5-Card Royal Flush	0.0009%	1001	0.9047%
5-Card Straight Flush	0.0081%	251	2.0417%
Four of a Kind	0.0720%	101	7.2749%
Full House	0.8153%	26	21.1979%
5-Card Flush	1.0108%	21	21.2276%
5-Card Straight	1.7763%	11	19.5388%
Three of a Kind	3.5963%	6	21.5780%
Total	**7.2798%**		**95.0408%**

*Includes the return of the Original Wager

The win frequency is 7.2798% and the overall payback is 95.0408% for paytable 6CB-02, assuming a minimum $5 wager.

Paytable 6CB– 03			
Hand	Frequency	Pays*	Payback
6-Card Royal – Diamonds	0.00000491%	200,001	0.9824%
6-Card Royal – Other	0.00001474%	20,001	0.2947%
5-Card Royal Flush	0.0009%	1001	0.9047%
5-Card Straight Flush	0.0081%	501	4.0752%
Four of a Kind	0.0720%	101	7.2749%
Full House	0.8153%	26	21.1979%
5-Card Flush	1.0108%	16	16.1734%
5-Card Straight	1.7763%	11	19.5388%
Three of a Kind	3.5963%	6	21.5780%
Total	**7.2798%**		**92.0202%**

*Includes the return of the Original Wager

The win frequency is 7.2798% and the overall payback is 92.0202% for paytable 6CB-03, assuming a minimum $5 wager.

Paytable 6CB– 04			
Hand	Frequency	Pays*	Payback
6-Card Royal – Diamonds	0.00000491%	200,001	0.9824%
6-Card Royal – Other	0.00001474%	20,001	0.2947%
5-Card Royal Flush	0.0009%	1001	0.9047%
5-Card Straight Flush	0.0081%	201	1.6350%
Four of a Kind	0.0720%	51	3.6735%
Full House	0.8153%	26	21.1979%
5-Card Flush	1.0108%	21	21.2276%
5-Card Straight	1.7763%	11	19.5388%
Three of a Kind	3.5963%	6	21.5780%
Total	**7.2798%**		**91.0327%**

*Includes the return of the Original Wager

The win frequency is 7.2798% and the overall payback is 91.0327% for paytable 6CB-04, assuming a minimum $5 wager.

Paytable 6CB– 05			
Hand	Frequency	Pays*	Payback
6-Card Royal – Diamonds	0.00000491%	200,001	0.9824%
6-Card Royal – Other	0.00001474%	20,001	0.2947%
5-Card Royal Flush	0.0009%	1001	0.9047%
5-Card Straight Flush	0.0081%	201	1.6350%
Four of a Kind	0.0720%	51	3.6735%
Full House	0.8153%	26	21.1979%
5-Card Flush	1.0108%	16	16.1734%
5-Card Straight	1.7763%	11	19.5388%
Three of a Kind	3.5963%	6	21.5780%
Total	**7.2798%**		**85.9785%**

*Includes the return of the Original Wager

The win frequency is 7.2798% and the overall payback is 85.9785% for paytable 6CB-05, assuming a minimum $5 wager.

Paytable 6CB– 06			
Hand	Frequency	Pays*	Payback
6-Card Royal – Diamonds	0.00000491%	200,001	0.9824%
6-Card Royal – Other	0.00001474%	20,001	0.2947%
5-Card Royal Flush	0.0009%	1001	0.9047%
5-Card Straight Flush	0.0081%	251	2.0417%
Four of a Kind	0.0720%	51	3.6735%
Full House	0.8153%	26	21.1979%
5-Card Flush	1.0108%	21	21.2276%
5-Card Straight	1.7763%	11	19.5388%
Three of a Kind	3.5963%	6	21.5780%
Total	**7.2798%**		**91.4394%**

*Includes the return of the Original Wager

The win frequency is 7.2798% and the overall payback is 91.4394% for paytable 6CB-06, assuming a minimum $5 wager.

Paytable 6CB– 07			
Hand	Frequency	Pays*	Payback
5-Card Royal Flush	0.0009%	501	0.4626%
5-Card Straight Flush	0.0081%	251	2.0417%
Four of a Kind	0.0720%	101	7.2749%
Full House	0.8153%	26	21.1979%
5-Card Flush	1.0108%	21	21.2276%
5-Card Straight	1.7763%	11	19.5388%
Three of a Kind	3.5963%	6	21.5780%
Total	**7.2798%**		**93.3216%**

*Includes the return of the Original Wager

The win frequency is 7.2798% and the overall payback is 93.3216% for paytable 6CB-07, assuming a minimum $5 wager.

Paytable 6CB– 08			
Hand	Frequency	Pays*	Payback
5-Card Royal Flush	0.0009%	501	0.4626%
5-Card Straight Flush	0.0081%	251	2.0417%
Four of a Kind	0.0720%	101	7.2749%
Full House	0.8153%	26	21.1979%
5-Card Flush	1.0108%	21	21.2276%
5-Card Straight	1.7763%	11	19.5388%
Three of a Kind	3.5963%	5	17.9817%
Total	**7.2798%**		**89.7253%**

*Includes the return of the Original Wager

The win frequency is 7.2798% and the overall payback is 89.7253% for paytable 6CB-08, assuming a minimum $5 wager.

Paytable 6CB– 09			
Hand	Frequency	Pays*	Payback
5-Card Royal Flush	0.0009%	1001	0.9244%
5-Card Straight Flush	0.0081%	501	4.0752%
Four of a Kind	0.0720%	201	14.4778%
Full House	0.8153%	21	17.1214%
5-Card Flush	1.0108%	16	16.1734%
5-Card Straight	1.7763%	11	19.5388%
Three of a Kind	3.5963%	6	21.5780%
Total	**7.2798%**		**93.8891%**

*Includes the return of the Original Wager

The win frequency is 7.2798% and the overall payback is 93.8891% for paytable 6CB-09, assuming a minimum $5 wager.

Paytable 6CB– 10			
Hand	Frequency	Pays*	Payback
5-Card Royal Flush	0.0009%	251	0.2318%
5-Card Straight Flush	0.0081%	101	0.8216%
Four of a Kind	0.0720%	51	3.6735%
Full House	0.8153%	26	21.1979%
5-Card Flush	1.0108%	21	21.2276%
5-Card Straight	1.7763%	11	19.5388%
Three of a Kind	3.5963%	6	21.5780%
Total	**7.2798%**		**88.2692%**

*Includes the return of the Original Wager

The win frequency is 7.2798% and the overall payback is 88.26921% for paytable 6CB-10, assuming a minimum $5 wager.

Paytable 6CB– 11			
Hand	Frequency	Pays*	Payback
5-Card Royal Flush	0.0009%	1001	0.9244%
5-Card Straight Flush	0.0081%	201	1.6350%
Four of a Kind	0.0720%	51	3.6735%
Full House	0.8153%	26	21.1979%
5-Card Flush	1.0108%	21	21.2276%
5-Card Straight	1.7763%	11	19.5388%
Three of a Kind	3.5963%	6	21.5780%
Total	**7.2798%**		**89.7752%**

*Includes the return of the Original Wager

The win frequency is 7.2798% and the overall payback is 89.7752% for paytable 6CB-11, assuming a minimum $5 wager.

The Impact of Larger Wagers

Normally, the size of the wager does not impact the overall payback. However, since a portion of the overall payback is based on a flat dollar amount and not a paytable (for paytables 6CB-01, 02 and 03), larger wagers will reduce the overall payback. In the case of 6-Card Bonus Sidebet, this applies to the portions of the payback that are a result of the top 2 payouts (the 6-Card Royals).

If the Player is wagering greater than $5 per hand, the impact of these fixed payouts to the overall payback will decrease in proportion to the increase in wager. Thus, if a Player wagers $10, the impact of the fixed payouts will be roughly half of what it would if the Player wagered $5. The payouts used in the table above would be 100,001 and 10,001. If he wagers $25, it will be only roughly 20% of the amount it would be wagering $5 (40,001 and 4,001, respectively).

If the Player bets $100 per hand, the impact will be that the payouts will be reduced to 10,001 and 1,001 respectively. This reduces the overall payback by 1.2132%

Hold'em 3 Bonus can offer a 3-Card Bonus Sidebet. The three cards consist of the Player's three hole cards. The Player is paid if his three hold cards are a Pair or Better.

Several paytables have been created for this sidebet. They are shown in the paytable below:

Hand	TCBS-01*	TCBS-02*	TCBS-03*	TCBS-04*
Decks	1	1	1	1
3-Card Royal	100	100	50	100
Straight Flush	50	40	40	40
Three of a Kind	30	30	30	30
Straight	5	5	6	6
Flush	4	4	3	3
Pair	1	1	1	1
Payback	97.5023%	95.5113%	92.9050%	93.8100%
House Advantage	2.4977%	4.4887%	7.0950%	6.1900%

* Payouts are X TO 1

A computer program was used to determine the distribution of 3-Card hands from a standard 52-card deck. Using the distributions a theoretical payback can be easily determined by multiplying the frequency of each hand type by its payout and summing up the values.

Results:

The distribution of 3-Card hands using the ranking in use for Three Card Poker is as follows:

Hand	Frequency
Decks	1
3-Card Royal	4
Straight Flush	44
Three of a Kind	52
Straight	720
Flush	1,096
Pair	3,744
Other	16,440
Total	22,100

By multiplying the Frequency of each hand by the payout of each hand, and summing up these values, the overall payback of the sidebet can be calculated. This calculation is shown for each paytable/shoe-size combination in the tables below:

Paytable TCBS- 01			
Hand	Frequency	Pays*	Payback
3-Card Royal	4	101	404
Straight Flush	44	51	2,244
Three of a Kind	52	31	1,612
Straight	720	6	4,320
Flush	1,096	5	5,480
Pair	3,744	2	7,488
Total	**5,660**		21,548

*Includes the return of the original wager

The payback is calculated as 21,548 divided by 22,100 or 97.5023%. The house advantage is 2.4977%. The win frequency is 25.61%.

Paytable TCBS- 02			
Hand	Frequency	Pays*	Payback
3-Card Royal	4	101	404
Straight Flush	44	41	1,804
Three of a Kind	52	31	1,612
Straight	720	6	4,320
Flush	1,096	5	5,480
Pair	3,744	2	7,488
Total	**5,660**		21,108

*Includes the return of the original wager

The payback is calculated as 21,108 divided by 22,100 or 95.5113%. The house advantage is 4.4887%. The win frequency is 25.61%.

Paytable TCBS- 03			
Hand	Frequency	Pays*	Payback
3-Card Royal	4	51	204
Straight Flush	44	41	1,804
Three of a Kind	52	31	1,612
Straight	720	7	5,040
Flush	1,096	4	4,384
Pair	3,744	2	7,488
Total	**5,660**		20,532

*Includes the return of the original wager

The payback is calculated as 20,532 divided by 22,100 or 92.9050%. The house advantage is 7.0950%. The win frequency is 25.61%.

Paytable TCBS- 04			
Hand	Frequency	Pays*	Payback
3-Card Royal	4	101	404
Straight Flush	44	41	1,804
Three of a Kind	52	31	1,612
Straight	720	7	5,040
Flush	1,096	4	4,384
Pair	3,744	2	7,488
Total	**5,660**		20,732

*Includes the return of the original wager

The payback is calculated as 20,732 divided by 22,100 or 93.8100%. The house advantage is 6.1900%. The win frequency is 25.61%.