Blackjack Card Counting Guide

1 Introduction

Thank you so much for purchasing this guide. I am stoked to see that you are interested in taking money away from the casino. If you do not understand any part of the guide or want explanation on anything at all, please feel free to reach out to me. I was previously a semi-pro counter who moved on to a career in engineering. However, I still research this game extensively.

Counting Cards originated in 1962 when Dr. Edward O. Thorp ran computer simulations on Blackjack on 51 cards deck with one missing rank (e.g. 2,3,4,5,6,7,8,9,T,J,Q,K,A). His results has shown that by just removing one 5, the advantage shift from the casino to the player. On the other hand, by removing just one Ace, the casino gains more advantage over the player.

Unfortunately, many casinos now uses multiple decks for Blackjack to make card counting more difficult. Casinos that still offer single decks usually made adjustments to their rules and payouts to ensure that their game is hard to beat. Luckily, the **El Cortez Casino** in Downtown Las Vegas still offers the original single deck game with the best rules available.

2 Not all Blackjack Games are Created Equal

We will assume that you know the rules of Blackjack moving forward. That is, you know when you can **Buy Insurance**, **Surrender**, **Split**, **Double**, **Hit**, **Stand**. Please check out this guide on how to play Blackjack:

`https://www.888casino.com/blog/blackjack-strategy-guide/how-to-play-blackjack`

2.1 House Edge

We know that every casino game has an house edge. The house edge in blackjack comes from the rule that the player must act first before the dealer. In blackjack, if you bust, you LOSE; even if the dealer would have busted later as well. In the literature, the house edge in blackjack is said to be approximately **0.5%** (equivalently, the player edge is **-0.5%**). That is, for every $100 you bet each round, you are **expecting to lose**

$$\$100 \times 0.005 = \$0.50$$

This does not seem a lot, but the casino deals about 100 hands per hour. This means that if the player bets $100 per hand, then in one hour the casino makes about $50.

2.2 Rule Variations

2.3 Multiple Decks

With more decks, the house edge is higher. Also, as a card counter, you will have to wait longer before you have a good true count (see section 3).

2.3.1 6:5 Payout for Natural Blackjack

If you get a natural blackjack on your first two card (i.e. an Ace and a ten-value card), you usually get paid 3:2, or 1.5 times your original bet. Some casinos, especially local card rooms in California, takes advantage of unaware players by only paying 6:5 for natural blackjack, or only 1.2 times your original bet.

For example, say you bet $100. On a 3:2 table, you get paid

$$\$100 \times 1.5 = \$150$$

whereas on a 6:5 table, you get paid

$$\$100 \times 1.2 = \$120$$

6:5 payout is very common for single deck blackjack. But beware of this though. Even though you might think you will not get a natural blackjack often, this "small" rule change yields an ADDITIONAL **-1.3%** on the player's edge.

2.4 H17

In the old days, dealer would stand on any 17 (hard or soft). But many casinos now require the dealer to hit on soft 17. This rule negatively impacts the player by **-0.2%** but we can still beat the casino.

2.4.1 Cannot Double After you Split

If you cannot double after you split, assuming that your game is still perfect, your profit is expected to be lower by some margin. This however, is not as bad as 6:5 payout for natural blackjack.

2.4.2 Other Bad Rules

Carnival blackjack games has a rule of Push22. That is, if the dealer bust with 22, your wager push instead of getting paid. Beware however, if you bust you still lose even if the dealer bust with 22.

DO NOT PLAY THESE GAME EVER, unless you know how to take advantage of these games like sloppy dealer flashing cards.

3 Card Counting

There are many card counting systems. We will teach you the most basic one, the **Hi-Lo** counting system.

In blackjack, Tens, Jacks, Queens, Kings are the same thing. We will just denote all of them as `T`. Ace will be denoted as `A`.

$$10 \equiv \texttt{T}$$
$$\text{Jack} \equiv \texttt{T}$$
$$\text{Queen} \equiv \texttt{T}$$
$$\text{King} \equiv \texttt{T}$$
$$\text{Ace} \equiv \texttt{A}$$

All other cards will be their pip value. So a 2 is just a `2`. Also, in Blackjack, we do not care about the card suits. So `T`$\heartsuit$ = `T`$\spadesuit$ = `T`.

3.1 The Running Count

Start your running count, RC, at 0.
Every time you see an

$$\texttt{2}, \texttt{3}, \texttt{4}, \texttt{5}, \texttt{6}$$

you add 1 to your running count.
Every time you see an

$$\texttt{T}, \texttt{A}$$

you subtract 1 from your running count. Remember that Jacks, Queens, and Kings are also denoted as `T`.
Do nothing if you see `7`, `8`, or `9`.

3.2 The True Count

Divide your running count, RC, by the number of decks remaining to be played, D. The true count, TC, is calculated by

$$TC = \left[\frac{RC}{D}\right]$$

The truncation function $[x]$ means get rid of the decimal places. So for example, $[3.14159] = 3$ and $[-2.5] = -2$.

3.3 The Betting Amount

Let U be the betting unit. So if you are playing with green \$25 chips in the casino, then $U = 25$. If you are playing with red \$5 chips in the casino, then $U = 5$.

How much you should bet is

$$B = (TC - 1) \times U,$$

otherwise just do a minimum bet. You have an advantage when $TC \geq 1$ and a disadvantage otherwise.

4 What to do after you place your bet?

You must play your cards against the dealer's up card. You must play according to basic strategy. Check out the file **BJA_H17.pdf** if the dealer hits soft 17. Otherwise, check out the file **BJA_S17.pdf**.

REMEMBER: it is the correct playing decisions combined with correct betting that gives you an advantage as a card counter.

5 Exercises

1. You are playing a double deck blackjack game. The cards you have seen so far are `3`, `A`, `T`, `9`, `4`, `6`, `3`, `5`, `5`, `T`, `4`, `T`, `T`, `7`.

   (a) What is the running count, RC?

   (b) What is the number of decks left to be played, D?

   (c) What is the true count, TC?

   (d) How much would you bet, B?

   (e) Say after the bet, you are dealt `A5`. What would you do if

      i. the dealer's upcard is a `6`

      ii. the dealer's upcard is a `7`

      iii. the dealer's upcard is a `9`

2. You are playing Spanish Blackjack in Atlantic City and you have a hard 20. The dealer has an 6 showing and she flashes an Ace as the next hit card. You have not made your decision yet. What should you do?

6 Solutions

1. (a) $RC = 2$

   (b) $D = 1.75$ because you already seen 14 cards which is about a quarter of a deck. Double deck blackjack starts with 2 decks.

(c) $TC = \left[\frac{2}{1.75}\right] = 1$

(d) Do a minimum bet

(e) i. Double Down
ii. Hit
iii. Hit

2. If you double down, you are guaranteed to win double your original bet. Hence, you should not hit or stand.

   However, the best play here is to surrender and then do a table maximum bet on the next hand. With an Ace in the hand, you have a 54% advantage.

7 Final Notes

I like to play Double Deck blackjack with 3:2 payout. However, casinos keep an close eye on those games because they know there are advantage players targeting those game. You will need to have a good act on the table.

8 Three Card Poker

You take advantage of the game as follows:

1. Find a sloppy dealer who flashes one of her cards
2. Play with that dealer until the casino rotates out dealer (usually once every 20 min)

The strategy is as follows:

1. You place an ante bet
2. Dealer deals your cards
3. If the dealer has Jack or lower, always play your hand.
4. If the dealer has a Queen, play Q92 or better
5. If the dealer has a King, play K92 or better
6. If the dealer has an Ace, play A92 or better
7. Fold anything else

You will have a 3% expected gain over the long run. Of course, this won't work if the casino has a different dealing procedure. Good luck scouting out casinos with exploitable games.