

# How to Increase Your Earnings with the Red 7 – Part I

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This is a short “How to” paper with just the basics of how to adjust the Red 7 accurately for a true count with doing as little math as possible. This is first of a two part series with Part II to follow. In the Library section of Blackjack Forum On-Line is my paper called “Truing the Red 7 count,” which provides a much more detailed analysis of my work, with extensive comparison data. Coming soon, will be “How to Increase Your Earnings with the Red 7 - Part II,” which describes a simple level one plus/minus side count of sixes and aces to increase your blackjack playing efficiency and Over 13 (if offered) betting efficiency. In this paper, I will address the six and eight deck games using a running count that starts at zero. Also included is a section on bankroll and risk of ruin for the recommended betting schedules in this article. The “How To Increase your Earning with the Red 7 – Part II” paper includes information on how to true count the Red 7 if you use the “shifted” variation where you start your count at -2 times the number of decks, plus information on how to true count the Red 7 in 2-deck games as well as the side count mentioned above. Proof of statements made in this article and the “How To Increase your Earning with the Red 7 – Part II” article to follow can be found in “Truing the Red 7 count” in the Library.

Arnold Snyder’s Red 7 count has now been in use for over 20 years. However, previous assessments of the Red 7 and other unbalanced counts have been based purely on using just the running count. This paper will show that it is just as easy to true the Red 7 count as any balanced count and end up with a count which is both more powerful and has greater accuracy than the Hi-Low.

The procedure in this paper will allow the use of the Red 7 count with true count accuracy and without the need to do any division. This is accomplished by memorizing a simple chart that allows you to continue making your betting and playing decisions by running count, by simply using a different running count depending on the depth of the deal. Any errors in the true count resulting from errors in estimating decks played are eliminated for true count of 2 or greatly reduced for true counts of 3, 4 or 5, as compared to what the errors would be in true count calculations for a balanced count resulting from similar errors in estimating decks played. The closer to the pivot point, the less sensitive the true count calculation is the errors in estimating decks played. In the case of the Red 7, the pivot is a true count of 2. Balanced counts also have a pivot point – the pivot point for balanced counts is a true count of zero. So the two advantages of the Red 7 over balanced counts for the shoe game are (1) no division is required and (2) true counts of 2, 3, 4 and 5 are calculated with much greater precision as compared to the calculation of these same true counts if a balanced counting system were used.

## Back-Counting Six Decks

Assuming you start counting at zero off the top of the shoe, you should stop back counting and move to another table if the Red 7 running count is less than -3, 0, +3 and +6 for one, two, three and four decks played, respectively. Thus if 2 decks have been played and the Red 7 count is less than zero, that means to stop back counting that table and move onto another table.

Stop back counting and move to another table if		
<u>Decks Played</u>		<u>Red 7 &lt;</u>
1		-3
2		0
3	<i>half dealt</i>	+3
4		+6

## Betting Strategy in the Six-Deck Game

Below is a chart of Red 7 running counts corresponding to true counts of 2, 3, 4 and 5 for 2, 3 and 4 decks played. The column labeled decks played "2" can be thought of as the beginning of the shoe, decks played "3" can be thought of as the middle of the shoe and decks played "4" can be thought of as the end of the shoe. Thus the player need to only know that he is at the beginning, middle or end of the shoe and then use numbers from the appropriate column for betting or playing strategy variations. Here's the Betting chart:

<i>true count</i>	Six Decks <i>decks played</i>			Suggested Units Bet
	2	3	4	
2	12	<b>12</b>	12	1
3	16	<b>15</b>	14	2
4	20	<b>18</b>	16	3
5	24	<b>21</b>	18	4 (max)

***Read down Decks Played Column for betting***

The true counts in the tables for both the six-deck and eight deck games above are approximately equivalent to the Hi-Lo true counts with each count per deck increasing the player's advantage by about 0.5%. Thus the suggested betting is one, two, three and four units at true counts of 2, 3, 4 and 5 respectively with 4 units being the maximum bet. For betting, the chart is to be read down the "decks played" column. Thus for the six deck game, if three decks have been played, the suggested bet is one, two, three and four units at Red 7 counts of 12, 15, 18 and 21 respectively.

## Back-Counting Eight Decks

The departure points when back counting the eight deck game are Red 7 running counts of -6, -3, 0, 3, 6 and 9 for corresponding decks played of 1, 2, 3, 4, 5 and 6.

<b>Stop back counting and move to another table if</b>		<u>Red 7 &lt;</u>
<u>Decks Played</u>		
1		-6
2		-3
3		0
4	<i>half dealt</i>	+3
5		+6
6		+9

## Betting Strategy in the Eight-Deck Game

<i>true count</i>	Eight Decks <i>decks played</i>			Suggested Units Bet
	2	4	6	
2	16	<b>16</b>	16	1
3	22	<b>20</b>	18	2
4	n/a	<b>24</b>	20	3
5	n/a	<b>28</b>	22	4 (max)

***Read down Decks Played Column for betting***

The true counts in the tables for both the six-deck and eight deck games above are approximately equivalent to the Hi-Lo true counts with each count per deck increasing the player's advantage by about 0.5%. Thus the suggested betting is one, two, three and four units at true counts of 2, 3, 4 and 5 respectively with 4 units being the maximum bet. For betting, the chart is to be read down the "decks played" column. Thus for the eight deck game, if four decks have been played, the suggested bet is one, two, three and four units at Red 7 counts of 16, 20, 24 and 28 respectively.

## Playing Strategy in the Six- and Eight-Deck Games

### Red 7 True Count Indices

*Situations in Red: Indices greater than 2.0*

*Situations in Pink: Red 7 Index at pivot point true count of 2.0*

Player's Hand	Dealer's Up Card										H17	
	S17											A
	2	3	4	5	6	7	8	9	T	A		
8				4	2							
9	2	d	d	d	d	4						
10	d	d	d	d	d	d	d	d	4	4	3	
11	d	d	d	d	d	d	d	d	d	2	d	
12	3+	2	0									
15									4		6	
16								5	0		4	
A2			4	d	d							
A3			3	d	d							
A4			d	d	d							
A5		5	d	d	d							
A6	2	d	d	d	d	h	h	h	h	h	"	
A7	2	d	d	d	d	s	s	h	h	2	h	
A8		5	4	2	2							
A9				5	5							
<b>DAS (Double After Split)</b>												
2,2	sp	sp	sp	sp	sp	sp	5					
3,3	sp	sp	sp	sp	sp	sp						
4,4			3	sp	sp							
6,6	sp	sp	sp	sp	sp							
7,7	sp	sp	sp	sp	sp	sp	3					
8,8	sp	sp	sp	sp	sp	sp	sp	sp	7 *	sp	"	
9,9	sp	sp	sp	sp	sp	4	sp	sp	std	3	2	
T,T				5+	5							
A,A	sp	sp	sp	sp	sp	sp	sp	sp	sp	sp	"	
<b>NDAS (No Double After Split)</b>												
2,2			sp	sp	sp							
3,3		5	sp	sp	sp	sp						
6,6	2	sp	sp	sp	sp							
7,7	sp	sp	sp	sp	sp							
8,8	sp	sp	sp	sp	sp	sp	sp	sp	5 *	sp	"	
9,9	sp	sp	sp	sp	sp	std	sp	sp	std	4	3	
T,T				5+	5							
A,A	sp	sp	sp	sp	sp	sp	sp	sp	sp	sp	"	

\* 8,8 v T: split if true count is *below* index

Insurance Index = 3. Risk Adjusted Double h10 v T index = 5 or 6.

		<b>Late Surrender Indices</b>			
		Dealer's Up Card			
Player's		<b>S17</b>		<b>H17</b>	
Hand		8	9	T	A
h17					2 *
h16	5	sur	sur	sur	sur
h15		3	sur	2	sur
h14				3	4
8,8				2	2 *
7,7				2	3

\* h17 v A, H17 and 8,8 v A, H17: surrender if true count is *below* index

For playing strategy decisions, the six and eight deck tables of critical running counts are read across the "True Count" rows. Playing strategy departures are based on the true count index which is estimated as the Hi-Lo true count playing strategy index for the current playing strategy decision to be made. What is needed is the Red 7 running count corresponding to a given True Count which you simply read across the given true count row until you get to the number of decks played where you pick out the Red 7 running count to use for your playing strategy departure. Notice that in the six-deck game at the pivot point of a true count of 2, the Red 7 running count is 12 throughout the shoe, independent of decks played. In the eight-deck game at the pivot point of a true count of 2, the Red 7 running count is 16 throughout the shoe, independent of decks played.

Here is an example of how to use the table above for playing strategy change. Suppose that the player has a hard 15 against the dealer's T up card. Player knows index for 15 versus T is a true count of 4. The six deck true count 4 row: 20, 18 and 16 for decks played 2, 3 and 4 respectively. The player realizes that he is halfway through the shoe and so uses the decks played 3 critical running count of 18 from the true count 4 row: 20, 18 and 16. So the player asks the question, is the current Red 7 count greater than or equal to 18? If so then the player stands, otherwise he hits. This decision can be made in a second or two without having to stop to try to ascertain decks played to the nearest half deck, calculating the true count with a division and then possible rounding errors with the resulting calculated Hi-Lo true count is still not as accurate as the Red 7 true count with this memorized chart method.

To summarize, all that the player needs to know for the six-deck game is if he is at the beginning (decks played "2" column), middle (decks played "3" column) or end (decks played "4" column) of the shoe and the index for the particular strategy change under consideration. If the Red 7 running count is greater than or equal to the running count from the table lookup then the playing strategy variation is made. All of these comments also pertain to true counts of 2, 3, 4 or 5 in the eight deck game.

To make this system as simple as possible in the six-deck game, the player can just assume that he is always in the middle of the shoe and use just the decks played "3" column throughout the shoe. Thus the player would bet one, two, three and four units at Red 7 running counts of 12, 15, 18 and 21 throughout the entire shoe and he would use Red 7 running counts of 12, 15, 18 and 21 as true counts of 2, 3, 4 and 5 respectively for playing strategy changes. If the player desires more accuracy then he can add the other two columns for more refined betting and playing strategy variation decisions.

## Bankroll Size by Trip Duration and Risk of Ruin

The 1 to 4 betting spreads with back-counting described for the six and eight deck games are to be used with the appropriate bankroll by trip duration and risk of ruin, show below. The 2.5% risk of ruin bankroll is recommended.

Approximate Bankroll for 2.5%, 10% and 20% Risk of Ruin						
25 hands played/hour, 40 hours/week, 1-4 spread, 6 decks, 4.5 dealt						
(1)	(2)	(3)	(4)	(5)	(6) = 67%*(5)	(7) = 50%*(5)
Trip Duration	Hours Played	Hands Played	P(Loss)	≈2.5%	≈10%	≈20%
Day	8	200	40%	80	53	40
Weekend	20	500	35%	120	80	60
1 week	40	1,000	29%	160	107	80
2 weeks	80	2,000	22%	200	133	100
1 month	160	4,000	13%	240	160	120
2 months	320	8,000	6%	280	187	140

The chart above is for 6 deck, 4.5 dealt risk of ruin (chance of losing your entire bankroll before or at the end of the trip) with back-counting and spreading 1 to 4 units as suggested in this paper. Column 4, "P(Loss)" represents the probability that there will be a net loss at the end of the given trip.

The bankrolls above are expressed in units (number of minimum bets). Thus for a day trip the 2.5% risk of ruin bankroll is 80 units which are 80 minimum bets or 20 maximum bets since the maximum bet is 4 units. So a day player with a \$25 unit bet (and a \$100 maximum bet) should have a bankroll of \$2,000.

The above risk of ruin chart assumes that the player does not change the size of his unit bet with changes in the size of his bankroll. The player continues to bet 1 to 4 units, with no change in the size of his unit bet, until either the end of the trip or until the player loses his entire bankroll.

The suggested one to four unit bets assumes that only one hand per round is being played. If two hands per round are being played, then each hand should be 75% of the amount suggested for a single hand.

Red 7 True Count	Units Bet		Day Trip Bank = \$1,200		Day Trip Bank = \$1,600		Day Trip Bank = \$2,000	
	1 hand	each of 2 hands	1 hand	each of 2 hands	1 hand	each of 2 hands	1 hand	each of 2 hands
2	1	0.75	\$15	\$10 or \$15	\$20	\$15	\$25	\$20 or \$25
3	2	1.50	\$30	\$20 or \$25	\$40	\$30	\$50	\$35 or \$40
4	3	2.25	\$45	\$30 or \$35	\$60	\$45	\$75	\$55 or \$60
>= 5	4	3.00	\$60	\$45	\$80	\$60	\$100	\$75

I will explain three methods of reducing the amount bet if the bankroll decreases. The first method involves keeping the unit bet size unchanged and reducing the bet spread from 1-4 to 1-3 and finally to 1-2 as the bankroll decreases. The second and third methods involve keeping the 1-4 bet spread and reducing the unit bet size as the bankroll decreases. The third method also increases the unit bet size as the bankroll increases. All three methods achieve the results of decreasing the risk of ruin.

Exact calculations of the current bankroll to determine when to reduce the bet spread or reduce the size of the unit bet size or an exact reduction in the unit bet size (methods 2 and 3 below) are not necessary. The percentages of when and how much to reduce are merely benchmarks and approximations will work fine as long as the player remembers not to wait too long before decreasing the bet spread or unit bet size if losing.

### **Method #1: Reduction of Bet Spread**

If 10% of original 2.5% risk of ruin bankroll (column (5) in table above) is lost then cut maximum bet to three units: bet 1, 2 and 3 units at Red 7 true counts of 2, 3 and  $\geq 4$ . If 25% of original 2.5% risk of ruin bankroll is lost then cut maximum bet to two units: bet 1 and 2 units at Red 7 true counts of 2 and  $\geq 3$ .

Thus the \$25 day trip player with a \$2,000 bankroll mentioned above would cut his spread to \$25 to \$75 if his bankroll fell below \$1,800 (90% of \$2,000) and would further cut his spread to \$25 to \$50 if his bankroll fell below \$1,500 (75% of \$2,000).

### **Method #2: Reduction of Unit Bet Size**

If 10% of original 2.5% risk of ruin bankroll (column (5) in table above) is lost keep maximum bet at four units but reduce the unit bet size by 20% so that unit bet size is now 80% of initial unit bet size with full bankroll. If 25% of original 2.5% risk of ruin bankroll is lost then keep maximum bet at four units but reduce the unit bet size by 40% so that unit bet size is now 60% of initial unit bet size with full bankroll.

Thus the \$25 day trip player with a \$2,000 bankroll mentioned above would cut his unit bet size from \$25 to 80% of \$25 = \$20 (and maintain his 1-4 bet spread with his top bet of 4 units now being \$80 instead of \$100) if his bankroll fell below \$1,800 (90% of \$2,000) and would further cut his unit bet size to 60% of \$25 = \$15 (and maintain his 1-4 bet spread with his top bet of 4 units now being \$60) if his bankroll fell below \$1,500 (75% of \$2,000). If \$25 day trip player's bankroll fell below \$1,500 and a three unit bet is called for, the unit bet size is \$15 so a three unit bet is  $3 * (\$15) = \$45$  on a single hand or two bets of  $75% * (\$45) = \$33.75$ , that is, two bets of \$30 or \$35 on each of two hands.

### **Method #3: Aggressive Unit Bet Size Changes**

This method is a variation of Method #2 where the player decreases his unit bet size if his bankroll decreases. However, unlike Method #2, player also increases his unit bet size if his bankroll increases and furthermore, the decrease in the player's unit bet size as bankroll decreases is less than the decrease indicated in conservative Method #2.

If the bankroll increases 25% or more, the unit bet size is increased 25% and if the bankroll decreases 25% or more, the unit bet size is decreased 25%. So with this method, the unit bet size change is approximately proportional the change in the size of the bankroll.

Here is an example of how this would work. The \$25 day trip player would have an initial 2.5% risk of ruin bankroll of 80 units or \$2,000. Play would begin with a unit bet size of \$25. The unit bet size would continue to be \$25 if the current bankroll is between 75% of \$2,000 = \$1,500 and 125% of \$2,000 = \$2,500. If the current bankroll falls below 75% of \$2,000 = \$1,500, then the unit bet size is decreased to 75% of \$25 = \$18.75 which is rounded to \$20. If the current bankroll is greater than 125% of \$2,000 = \$2,500, then the unit bet size is increased to 125% of \$25 = \$31.25 which is rounded to \$30.