Tournament Short Stack Criterion

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Unless you simply never play tournaments, you undoubtedly have been through one of the following situations. You have started the tournament in great shape. You have picked up some big hands and won some big pots. You move through the opening levels with a good chip count and are feeling confident. Then just like that the poker goddess turns a switch. You get hand after hand of rubbish. Because of your chip count you decide to wait it out. Several levels slip by and suddenly you find the blinds have caught up with you.

Alternately, you catch just enough hands to keep going. You pick off the blinds a few times and avoid disastrous outcomes by judiciously getting away from problem hands. You keep surviving in spite of the cards running fairly cold. Eventually you reach a point where the blinds are overcoming you.

The point is that many tournament players are going to reach a point where their chip count diminishes sufficiently so that the blinds become a real worry. For example, you have 7,000 chips and the blinds have just increased to 1,000-2,000. At this point you have only about three times the big blind. You are in danger of being blinded out and another passage through the blinds without a win is going to leave you severely crippled.

Most players upon finding themselves in the situation just described will move all in with a wide range of hands. Because of the bettor's small chip count, many players with a large stack will call in hopes of eliminating another player from the tournament. In particular, you see many players moving all in with any kind of ace. The table has what I believe is interesting information for players contemplating an all-in move.

kicker	1	2	3	4	5	6	7
2	.1916	.3464	.4716	.5728	.6547	.7208	.7743
3	.1750	.3193	.4384	.5367	.6177	.6846	.7398
4	.1584	.2917	.4038	.4983	.5777	.6446	.7009
5	.1418	.2635	.3679	.4575	.5344	.6004	.6571
6	.1252	.2347	.3305	.4143	.4876	.5518	.6079
7	.1086	.2054	.2917	.3686	.4372	.4982	.5528
8	.0920	.1755	.2514	.3203	.3828	.4396	.4912
9	.0754	.1451	.2096	.2692	.3243	.3753	.4224
10	.0558	.1142	.1663	.2153	.2615	.3049	.3458
J	.0422	.0827	.1214	.1585	.1941	.2281	.2607
Q	.0256	.0506	.0750	.0987	.1218	.1443	.1663
K	.0090	.0180	.0269	.0357	.0444	.0531	.0617

The table deals with probabilities for players holding an ace with some kicker of rank x, where x is not another ace. I define a hand to be better than the A-x if it is either an ace with a bigger kicker or a pair of rank bigger than x. For example, if you are holding A-9, then I am defining a hand to be better if it is either an ace with a kicker bigger than 9 or a pair of tens or better.

How do you read the table? The values down the first column indicate the kicker you are holding. The other columns are headed by numbers from 1 through 7 and they indicate the number of hands you have coming up before you hit the big blind. The entries in the table give you the probabilities for being dealt a better (according to the above definition) hand before the big blind gets to you.

An example should make it perfectly clear. Suppose you are on the button with an A-2. If the table has ten players, you will be dealt seven more hands before the big blind reaches you. You look across the row corresponding to the kicker 2 and find .7743 in the column headed by 7. Thus, about three out of four times you will be dealt a hand better than A-2 prior to the big blind reaching you. It is perfectly reasonable to say to yourself, "I think I'll chance being dealt a better hand before moving all in."

On the other hand, if you are under the gun on the next hand and you are holding the A-2, then the probability is only .1916 that you will be dealt a hand better than A-2. This is only about 1 in 5 times that it will happen. You might decide to make a stand because of this probability.

Let me now tell you how you can get more information from the table than what is right in front of your eyes. Suppose you are dealt A-9, you are playing with 7 players at your table and you believe you can afford to go through the blinds once before things get too desperate. Suppose this means you will see 10 more hands before the big blind reaches you for a second time. You look down and find A-9. Now the table does not have a column headed by 10, but you can do the following.

Find a convenient divisor of 10. In this case use 2. Divide 10 by 2 and obtain 5. Now find the column headed by 5 and we find the entry .3243. Subtract the entry from 1 and obtain .6757. Raise this value to the power of the divisor you used, in this case 2. Squaring .6757 yields .4566. Subtract the latter value from 1 and obtain .5434. This is the probability that you will be dealt a better hand in the next 10 deals.

This is a neat little trick that tells us the table really contains much more information than originally suspected. The table has interesting implications for when to make a move when short stacked in a tournament.