

But They Were Suited!

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How many times have you heard someone say, as he or she was smugly stacking chips after winning the pot with some outrageous hand, “But they were suited!” I’m sure the answer is many times, and you are going to hear it again for certain. I just returned from a week in Las Vegas and many hours of poker. I keep my ears open and the number of times I overheard comments regarding suited cards was surprising. It is clear that suited cards have an allure for many players. Is this allure justified? Let’s take a look at the mathematics of the situation and you can reach your own conclusions.

Suppose we have a player holding two suited cards and because the suit does not matter, assume the player is holding two spades. The total number of possible flops from this player’s viewpoint is $C(50, 3) = 19,600$. Of these flops, $C(11, 3) = 165$ consist of three spades. In other words, the chance of a player actually flopping a flush when holding two suited cards is about 1 in 119. (So the next time you flop a flush realize how rare that is.)

We have just seen that the chance of flopping a flush is small, but what about the chance of flopping a good flush *draw*? There are $C(11, 2) = 55$ ways to choose two spades and 39 choices for the third card. This yields 2,145 flops that have two spades. This translates roughly into a 1 in 9 chance of the player flopping a good flush draw. Some of the flops with two spades are less helpful than others. Of the 39 choices for the third card, 6 of them also put a pair on board. Thus, of the 2,145 flops that give the player a good flush draw, 330 also have a pair. The latter flops are dangerous for several reasons. There may be an opponent who has flopped a full house rendering a flush draw useless. There may be an opponent who has flopped trips. This puts an opponent on a draw for a hand bigger than a flush and also means that the flush draw will not win by fluking a pair or two pairs on the turn and river. A pair on board tends to put the player with four spades in the position of a flush or nothing.

Everyone undoubtedly has read numerous times about the chances of making a flush when flopping four suited cards, but let’s present the numbers again. The player with two spades and two spades in the flop, has 47 unseen cards of which nine are spades. Thus, the probability of turning a flush is $9/47$ so that the odds against this are slightly more than 4-to-1. If the player holding two spades knows that only 8 of the unseen spades will not pair the pair and believes the remaining spade is not safe, then the probability of a “safe” flush is $8/47$. The odds against this are almost 5-to-1. The probability of making the spade flush by the river is slightly more than $1/3$. Thus, a player flopping four to a flush

will make a flush about one out of three times if they stay until the river.

Returning to the player with two spades, there are 8,151 flops that bring exactly one spade. This is approximately 40% of the flops. This leads to the situation that probably brings the biggest surprise to people in a hold'em game: A player with two suited cards catches one on the flop and then catches runner-runner cards in his suit to make a winning flush. Let's work out how likely the preceding scenario is.

The player holding two spades has 47 unseen cards, of which 10 are spades, after the flop. The probability of turning a spade is then $10/47$. He now has 46 unseen cards of which 9 are spades so that the probability of rivering a spade after turning a spade is $9/46$. Multiplying the two probabilities gives us a probability of $45/1,081$, or about 1 in 24, that the player makes a runner-runner flush.

What can we conclude from the above? If you have two suited cards and flop one card in your suit, the odds against making a flush are 23-to-1 so remove the flush from your considerations. Make your judgement on the basis of how your hand shapes up with respect to its ranks. Now and then you will back into a flush but the primary strength of your hand after a flop with only one card of your suit comes from the ranks.

On the other side of the coin, please don't chastise players who are merrily stacking chips after winning a pot by catching a runner-runner flush with a hand whose only strength after the flop was the flush draw. The last thing you want to do is chase away someone who is willing to chase a hand as a 23-to-1 dog when the pot is likely offering odds nothing near that. Instead, make such a player feel welcome. If he or she is making that mistake, it is likely other mistakes are being made as well by the same player.