

# Strike

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## Strike format

Strike format was developed by Dima *Rdu* Radu and can be described as follows (extrapolating the n-deck format from the original 3-deck format): \* Both players create a set of  $n$  decks of 30 cards + Each deck has to be of different class, so  $n \leq 9$  \* Each player bans  $m$  matchups out of  $n^2$  + Since hearthstone matches usually follow formats with an odd maximum amount of games (as to prevent draws),  $m$  has to satisfy  $(n^2 - 2m) \bmod 2 = 1$  \* Players play out remaining matches

Since every matchup is played, there are no pick order decisions. Thus, Hero's expected winrate is a probability of winning at least  $\frac{n^2 - 2m + 1}{2}$  of  $n^2 - 2m$  different Bernoulli trials, which is equivalent of a sum of these trials being equal or greater than  $n^2 - 2m$ . Using convolution, one can easily figure out distribution of the number of wins and compute the winrate. A function to do just that is provided at <https://github.com/naturewillconfess/hearthstoneR/tree/master/Strike>. As far as the optimal strategy goes, it is trivial that eliminating the worst remaining matchup is always optimal.