ChRONicles of Cardplay

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Computer Hands or: How I Learned to stop Worrying and Love Them

With a nod to Dr. Strangelove and Stanley Kubric, how many times have I heard, "I hate computer dealt hands, they're so weird." Or, "I always get bad breaks with computer hands." Or, "Finesses never work when I'm playing computer hands".

I cringe when I hear these comments because I've been a computer programmer for more years than I care to admit, so you know I'm biased. In fact, in the early 70's, I actually wrote a program to deal random hands that was then used in the local duplicate club game.

There are numerous random dealing programs. If you play in club games, the most likely used program is DealmasterPro. When you play in ACBL sanctioned Sectionals, Regionals and NABCs, the computer hands are provided by the ACBL who use their own program. These two programs create sheets to make the hands manually, files to drive a dealing machine, and hand records for the end of the game.

Well-written dealing programs create hands in a truly random fashion (not all are well-written). Ed Marzo, the author of DealmasterPro, has done extensive statistical analysis of DealmasterPro hands to prove that ***over the long run***, hands produced by DealmasterPro are truly random. On average, everyone gets 10 high card points. Finesses work ½ the time and fail ½ the time. 5-0 splits occur just about 4% and 3/3 splits occur about 36%, just like the statistics tables predict.

The primary problem with computer hands is people's attitudes and misconceptions towards them. It's kind of a pet peeve with me. I've heard the complaints for years about how computer hands are "strange". Contrary to popular belief, no one has the time or energy to examine a set of hands and remove the uninteresting ones. Watch the next time you play computer hands – you still get 4/3/3/3 distributions, just not as often. Another problem is that while the hands are statistically correct over the long haul, a small sample of 36 boards will rarely be statistically perfect. Analyzing 10's or 100's of thousands of hands generates the randomizing statistics, so within a small sample of 36 boards, it's indeed possible for example that an unexpected number of finesses fail or work.

Another thing working against computer hands is that there are hand records after the game. People can sit down and analyze to their heart's content. With hand-dealt hands, it's virtually impossible to remember every card. If you could, people would realize that there are many, many "weird" hand-dealt hands too.

Two more observations:

1) The strangest hands I've ever gotten have been in team games where the cards are hand shuffled and dealt. I've never had a 10-card suit in a computer dealt hand, but I ***have*** had a 10-card suit in a hand-dealt hand. People tend to forget this.
2) In my experience, hand-dealt hands in clubs are not really random - they're too flat. People don't riffle the cards enough and so the hands tend towards flat and uninteresting. Players get used to flat distributions and then when they play the truly random computer dealt hands they're shocked.

Remarkably, it's only recently that mathematicians have applied rigorous principles to card shuffling. From 1983 to 1992, three mathematicians, David Aldous, Persi Diaconis and Dave Bayer did extensive research and concluded that to get close to a random shuffle by hand, the cards must be riffled 7 times. They've written numerous papers on the subject but the math is WAY too complex for this article. I just take their word for it!

Do you shuffle the cards 7 or more times before dealing in a club game? I do.

Frankly, I prefer computer dealt hands. They're more challenging and interesting. Who wants to play 4/3/3/3 hands all day anyway?

So what does all this mean? What should you do differently when you're playing computer hands? Well, the short answer is "nothing". You ***should*** play the same regardless. However, computer dealt hands should sharpen your game. How? You must know the percentage plays and execute them properly ***ALL*** the time. For example,

playing hand-dealt hands and holding 4/3 cards between declarer's hand and dummy, your extra trick could easily come by playing 3 rounds and establishing the 4th card in the long hand. Unfortunately, you may be playing for this layout far too often ***because it works more often*** with hand-dealt hands. Statistically, a 3/3 break occurs about 36% of the time. So, if you're faced with two lines of play, a finesse or a 3/3 break and you must select one, playing in a club game with hand shuffled cards, the two lines of play may be equally likely to work. However playing computer dealt hands, it's clearly right to take the finesse, which has 50% chance versus the 3/3 break that only has a 36% chance. A quick note is in order here. Remember, these are only PERCENTAGES, not GUARANTEES. Sometimes the 50% play fails while the 36% play would have worked. DO NOT LET THIS DETER YOU! You'll win more often in the long run by disciplining yourself to ***always*** take the percentage play.

So, what should you do different in a club game? When you make hands in a club game or for a team match, you should riffle the cards 7-9 times. This will produce deals that are nearly as random as computer dealt hands. Then the published mathematical percentages will still apply. Also, the hands will be more interesting!

I'll concede that I too have experienced a flurry of odd layouts when playing computer dealt hands. One Thursday night at our Unit game's STAC, my partner and I had several terrible trump splits – many more than the odds would predict. While it was annoying, we coped better than the rest of the field and won our section anyway. That's the beauty of duplicate.

One big advantage of computer-dealt hands is of course you get hand records. I personally ***love*** hand records. I really enjoy going out to dinner with my partner after a game and arguing about the best way to bid and play hands. There's no guessing about who held what – it's there in black and white. Another big advantage of computer hands is that if your Unit/club has a card dealing machine, you don't have to make the hands – they come to your table pre-dealt into the boards.

If you're interested in learning more about hand types, percentages and statistical distributions, here's some reference material:

www.dur.ac.uk/bridge.club/TEACHING/statistics.html

www.rpbridge.net/xsb2.htm

The Official Encyclopedia of Bridge – Alan Truscott – ISBN 0-943655-44-6

Bridge Odds for the Practical Player – Hugh Kelsey – ISBN 0-575-02799-1 (out of print)

Master the Odds in Bridge – Terrance Reese – ISBN 0-575-02597-2 (out of print)

Test your Percentages – Hugh Kelsey – ISBN 0-575-03310-X (out of print)