

COMPUTER GENERATED V MANUALLY SHUFFLED HANDS

(by Reg Hull)

Current Trends

- Around 60% of clubs now use computer/machine dealt hands.
- All National and International competitions are administered using Computer dealt hands

The main advantages of computer/machine dealt hands are: -

1. Hands are "Better Shuffled"

- Computer generated hands are more random generally resulting in more distributional hands.
- To create a random deal manually, players must shuffle the deck at least seven times to guarantee that the cards are properly mixed. Inadequate shuffling often leads to "flatter" distributions.

2. Board accuracy

- If cards are put back incorrectly then reference can be made to a hard copy of the hands to reinstate

3. Ability to review hands.

- Hands can be available on the night to take away
- Hands can be downloaded from the website
- Makeable and optimum contracts are shown
- Hand Statistics i.e. Average HCP, Singletons, Voids etc. are available for review

Questions most asked

1. There a lot of funny hands?
2. There are a lot of long suits, singletons and voids.
3. Are the hands truly random or are they fixed?
4. What has happened to our normal hands?

Answer:

Hand-dealt boards tend to give more flat distributions than statistically probable. That's because cards of the same suit end up next to each other when the cards are played or when tricks are gathered together. If these aren't separated by shuffling, it ends up that one card in that run of cards of the same suit goes to each player during the deal therefore voids and singletons become less likely.

When a card dealing machine is used, voids and singletons occur with the correct probability. Hands will now look more distributional.

Here are a few probability stats.

- Seven Card Suits. Turn up 7 in 200 hands, i.e. for every 200 hands you get 7 card suit 7 times
- Six card suit. Turns up about 17 times in 100 hands.
- Singletons are quite common - 3 times in every 10 hands,
- Voids. There are 5 voids in every 100 hands.
- Flat Hands. There are 47 flat hands in every 100 hands. Not as rare as you think.

Here is a typical / standard distribution of hands from a computer dealt evening of 22 boards

	Voids	Singletons	2	3	4	5	6	7	Balanced	HCP
North	2	8	20	20	20	11	6	1	11	10.18
East	1	9	21	19	17	16	5		5	10.27
South		7	19	28	20	8	5	1	13	9.05
West	1	9	15	24	22	15	2		9	10.50

The explanation is as follows.

- o 22 Boards played. North/South will receive 286 cards in the evening. i.e. 22 Boards * 13 cards.
- o East will have the following during the evening
- o $1 * \text{void} + 9 * 1 + 21 * 2 + 19 * 3 + 17 * 4 + 16 * 5 + 5 * 6 = 286$.
- o i.e. 1 hand with a void, 9 instances of a singleton, 21 instances of a doubleton etc etc.
- o Using Board 1 below as an example East has 1 of the 5 balanced hands he/she received during the evening. Also 3 of the 19 instances of a triplet and 1 of the instances of a quad. The point count was 4 so there will be other hands where more than 10.27 points were received.

<p>♦ AJ109 Dir: North Vul: None</p> <table border="1"> <tr><td>W</td><td>North</td><td>E</td></tr> <tr><td>11</td><td>1</td><td>12</td></tr> <tr><td>13</td><td>4</td><td>14</td></tr> <tr><td>15</td><td>16</td><td>17</td></tr> </table> <p>♦ Q962 ♦ 94 ♦ KJ4</p> <p>♦ K83 ♦ K7 ♦ KQ1075 ♦ Q98</p> <p>♦ 64 ♦ A853 ♦ A82 ♦ A532</p> <p>Optimum NS 4H; 420</p>	W	North	E	11	1	12	13	4	14	15	16	17	<p>♦ Q752 ♦ J104 ♦ J63 ♦ 1076</p> <p>♦ 109743 ♦ A942 ♦ -- ♦ K1053</p> <p>♦ AQ5 Dir: East Vul: N/S</p> <p>Optimum EW 4HX, EW 4SX; 100</p>	<p>♦ J62 ♦ KJ1075 ♦ A10 ♦ Q42</p> <p>♦ 109743 ♦ A942 ♦ -- ♦ K1053</p> <p>♦ J62 ♦ KQ92 ♦ 62 ♦ Q2</p> <p>♦ Q94 Dir: South Vul: E/W</p> <p>Optimum NS 1N; 120</p>
W	North	E												
11	1	12												
13	4	14												
15	16	17												

Here are the stats from Monday 28th at Crockham Hill

28th November 2016 - Duplicate Pairs

[Ranking] [Scorecards] [Matrix] [Travellers] [Hands]

	Voids	Singltons	2	3	4	5	6	7	Balanced	HCP
North	3	9	19	23	23	11	7	1	10	10.54
East	2	11	16	25	24	12	4	2	10	9.46
South	3	9	12	32	20	17	3		12	10.83
West	1	6	23	27	22	11	6		13	9.17

42% of Easts hands were flat and 54% of West hands were flat which answers the questions.

- 1) They fit with what statistical probability expects
- 2) People remember the distributional hands and forget that nearly 50% of the hands were flat

Hope this helps and feel free to pass it on.

Regards

Reg