Zar Points

Aggressive Bidding Backbone

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To my daughter Marina, whose interest in the wonderful game of bridge inspired all this research

Zar

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Setting the Stage

Zar Points Hand evaluation comes with guidelines addressing the **combined** strength of the two partnership hands necessary to perform a contract at a certain Level.

We already know that if the combined Zar Points in both hands is **52 Zar Points**, we are at the doorsteps of Game at Level 4 (**4H or 4S**) the interval being **52-56**. If we have **62** we are at the doorsteps of a **Slam**, the interval being **62-66,** and we have **67 Zar Points**, we are at the doorsteps of the **Grand Slam zone**. It's all based on the 5 Zar Points per Bidding Level.

The question now is **HOW** to communicate our strength to our partner and how to actually **reach** the contract that the Zar Points balance recommends. In other words, how to build **the basis** for the Zar Points **bidding system**?

This is the approach we take:

1) Present **the research** (beyond the Zar Points Hand Evaluation research, of course) which leads to the decisions taken, while putting together the system backbone, as well as the thinking around this research and its results;

2) Lay down the **backbone of the system,** leaving some of the details and conventions up to the partnership to decide and detail.

3) Suggest the weapons (different **relay-based approaches, conventions, etc.**) for revealing the **details** of the hand **when** this is necessary, keeping the **natural bidding** "alive" in all the other "regular" and most probable situations.

Benito Garozzo (the greatest bridge mind ever, I believe) once suggested that "the strength of the Strong Club Systems manifests itself not when you open 1C, but when you are **free** to open anything else, **immediately limiting** your strength". Zar Points Bidding Backbone takes that to the extreme in some sense, as we will see, making the Strong Club Systems look like “natural Bidding Systems”, compared to Zar Points. And all that is based on probabilistic research in all the main aspects of the bidding process.

We will start with **the research backing the basis** of the Zar Points Bidding Backbone - as with the Zar Points Hand Evaluation, "it's not just because **we feel like** that's the right approach" – it’s what the numbers show.

The research will make sense to you **regardless** of your attitude towards Zar Points Evaluation or Zar Points Bidding. At least it would encourage you to have another look at **your current system**, whatever it is, to re-evaluate it against the dozens of probability tables presented, and (hopefully) adjust it here and there where you feel it should be adjusted to fit well in the tables-data presented.

The numbers presented have been examined and confirmed by several people, but most of the tables are based on the computer analysis run by John C. Gallucci of Columbus Ohio and Ft. Myers Florida (thanks, John!) and myself. The tables for the difference between 4:4 and 5:3 fits for NT and Suit contracts, as well as the difference between 4:3 and 5:3 fits are primarily based on the computer analysis of Nick Warren from UK (and again my own experiments for double-checking, of course), while the statistical exercises were made in cooperation with David Demers from Canada. There is plenty of research numbers of one or another aspect coming from a variety of other contributors, counter-example providers, and testers - I am certainly **grateful to all**.

More that a dozen of discussion threads can be found in the BBO "**Advanced and Expert-Class Bridge**" and Zar Points discussions are on the top both in terms of number of viewers and number of responders – I have a lot feedback from there too.

I also have tons of emails and really deep discussions about the game with **world champions and world-class players and publishers** which I intend (and have their permission) to publish – those are probably my most valuable feedbacks and a real delight to read. I WILL publish them the moment I get a free minute or so.

A lot of people provided editing and theoretical feedback to the Zar Points Bidding Backbone. To name a few in no particular order: Ken Lindsay (Hawaii), John Plaut (Chile), John Gallucci (USA), Beltan Tonuk (Turkey), Vladimir Atanassov (Israel), Andrew Billson (UK), Jacob Davenport (USA), Cam Trenor (USA), Nick Warren (UK), Dave Demers (Canada), Kalle Prorok (Sweden), Piotr Radzikowski (Poland), Harry Freeman (UK), Rumen Mantchev (USA), Kees Brill (Denmark), Frank Luithle (Germany), Pavell Boev (USA), Raymond Reynolds (USA), Steve Marks (USA), Ben Dickens (USA), Boris Richter (Germany), Herbert Wilton (USA), Martel Claire (France), John McLeod (UK), Marco Pancotty (Italy), Larry Cohen (USA), Erik Kokish (Canada), Grant Baze (USA), etc.

Thank you all, indeed!

Enjoy.

Examples and Conventions

I have virtually all books on bidding (and have actually read them) and I can say that almost without exception all of them revolve around HEAVY sets of examples to illustrate the point made in one or another aspect of the bidding process, basically saying:

> "With this hand you bid this, with that hand you bid that. Get it?"

No, I don't get it.

Chances for me to hold this or that hand in my lifetime are ... very slim, to put it mildly. And if it is some other hand, then it will be something else that matters, so I can never "catch up". That's why I decided against using example hands, despite the fact that I have been through literally millions of hands (with the quiet help of my computer which listens carefully to what I have to say.

And if you don't understand what I have to say, then either I haven't said it clearly enough or what I have to say is not worth understanding anyway – in either case I ask for your forgiveness in advance.

At least I don't waste your time with examples, which I undoubtedly can construct to perfectly fit whatever I want to say, and whatever YOU want to say, for that matter.

The controversy worth mentioning here is that "Learning by Example" is not something I deny at all. In fact I have used this type of learning in computer programs that make computers "learn". But when we try to talk "the backbone of a bidding system", examples should be put aside and we should have a straight talk.

The other thing I want to explicitly mention are conventions – we all use them every day, at least the most popular of them. Conventions also (I think) should be left aside when talking about a backbone of a system. A system is **the STRATEGY** of climbing the Bidding Tree, rather than the **"Equipment"** you are going to use, let alone the **"Brand"** of the equipment. This is a common strategy that both partners have in mind while climbing the tree in synch.

Stayman, for example, is a convention used in Strong 2-Club systems, in Strong 1-Club systems, in Strong Pass systems, and ... yes, in Zar Points bidding also. You can actually incorporate in the Zar Points bidding **almost all of the conventions you use** (after some <u>necessary strength-adjustments</u> as you can guess). Very few conventions actually get ruled-out by the STRATEGY of climbing the bidding tree simply because they may address issues that are eliminated by the STRATEGY itself – in other words they may fight problems that simply don't exist in the new realm.

So – no examples, no conventions. Just straight talk with straight numbers.

Zar Misfit calculations

The main point is Zar Points is adding the 3 differences in lengths:

$(a – b) + (b – c) + (c – d) = (a – d).$

We add these 3 differences to the sum of the 2 longest suits and get to

$(a + b) + (a – d)$

where a is the longest suit, b is the second longest, and d is the shortest suit.

When I started the experiments with the Game and Slam calculations (we know that the minimum requirement when you **HAVE a FIT** for Game is 52, while for a Slam it is 62) the main question in my mind was what happens if there is NO FIT and what happens if you **not only don't have a fit**, but when the hands "don't fit together" or "are in misfit".

Since you probably know my nature by now, I cannot tolerate such vague conversations involving undefined notions like "don't fit together" or "are in misfit"- so I decided to define MISFITS.

And not only to define it, but to be able to MEASURE it, enabling me to say "These two hands are in a misfit that is worse by 2 compared to the misfit of those two hands".

Let's have a glimpse at a couple of such hands:

xxxxxx	-	xxxxx	-
xxx	xxxx	x	xxxxxx
xxx	xxxx	xxx	xxxx
x	xxxxx	xxxx	xxx

Which of these 2 pairs of hands have a WORSE misfit?

And by how MUCH is the first misfit WORSE than the second one? **IF** it is worse.

Any clues? I know the answer to this question...

Here is an easier one, though – which of THESE 2 is a WORSE misfit?

xxxx	xxx	xxxxxxx	-
xxx	xxx	xxxxxx	-
xxx	xxxx	-	xxxxxxx
xxx	xxx	-	xxxxxx

It is a piece of cake this time, right?

Now we are all set to get to **the definition** of Zar Misfit Points.

Let's denote the DIFFERENCE in lengths in the Spade suit of the pair by sDif:

sDif = | s1 – s2 |

where s1 is the length of the spade suit of player1 and s2 is the length of the spade suit of his partner, player 2. The vertical bars indicate Absolute Value of the difference.

In a similar way we define hDif for Hearts, dDif for Diamonds, and cDif for Clubs.

The Zar Misfit Value M4 is the sum of these 4 differences:

M4 = sDif + hDif + dDif + cDif

Why do we put 4 after M? To denote that this is the COMPLETE Zar Misfit value, involving all the 4 suits.

As you can guess, there is another Zar Misfit value M2 which is the sum of the 2 BIGGEST differences. Here is how it is formally defined:

Let's denote the Maximum DIFFERENCE in lengths with m1, that is:

m1 = max(sDif, hDif, dDif, cDif).

The next biggest difference we denote with m2, after that m3, and finally m4 which is the least difference of the 4, that is:

m4 = min(sDif, hDif, dDif, cDif).

So M4 = m1 + m2 + m3 + m4 while M2 = m1 + m2.

The reason we have both M4 and M2 is that we will make a brief study on the **influence** of both of these values on the bidding, since when you have misfitting hands the most important thing is to step on the brakes quickly (because the misfit deduction is BIG) and still have the **TEMPO** during the bidding to figure out the M2 value. Usually the **RESPONDER** will be in a position **to calculate the M2** after the first re-bid of the opener.

So let's have a look at our second set of pairs of hands (the easy ones):

xxxx	xxx	xxxxxxx	-
xxx	xxx	xxxxxx	-
xxx	xxxx	-	xxxxxxx
xxx	xxx	-	xxxxxx

The first pair has $M4_1 = 1 + 0 + 1 + 0 =$ **2**, the second has $M4_2 = 7 + 6 + 7 + 6 =$ **26**.

As you have probably guessed already, these are the SMALLEST and the BIGGEST Zar Misfit values you can have <u>when there is no fit.</u>

Again we hit this **"magic" number of 26**, this time coming from yet another different direction.

When you HAVE a FIT, the minimum Zar Misfit value **becomes 0**, as in this pair of hands:

xxxx	xxxx	OR	xxxxx	xxxxx
xxx	xxx		xxx	xxx
xxx	xxx		xx	xx
xxx	xxx		xxx	xxx

Why is that?

When you don't have a fit, you have **2 7-card fits** and they themselves bring at least 2 Zar Misfit points, if they BOTH come in 4:3 shape. And there is NO compensation for a misfit, meaning that the other suits can only ADD points rather than somehow "subtract" misfit points.

We will have a separate study on how GOOD a minimal misfit is – we will even show that if your fit breaks 4:4 it is better for a Trump Contract while if it breaks 5:3 it is better for a NT contract, etc.

Similarly, a suit shape of 4:3 is better for a Trump contract (the so called "Italian Fit" after the great Blue Team who used to play this type of contracts, or "Moysean Fit" after Alfred Moyse, a theorist researching this type of contracts) while 5:2 is better for NT contract, etc.

I already hear you mumbling "But man, you said that **in Bridge you ALWAYS have a fit**, remember?". I certainly do remember and indeed this is the statement of the Zar Fit Theorem:

"In Bridge you always have a fit:

- 85% of the time at least one 8-card fit;
- 15% of the time – two 7-card fits."

So obviously we are not talking about the 85% of the time when you have a fit (although as we are going to see, it is worth **keeping in mind the Zar Misfit Values** even for hands where you DO have a fit).

It is important to realize (and it should be clear from the simple examples above) that it is quite possible to HAVE a FIT and to be in MISFIT (high Zar Misfit Number) as well as to NOT have an 8-card fit and NOT to be in misfit. MISFIT is a characteristic of BOTH hands together while FIT is a characteristic of ONE SPECIFIC SUIT of the 4 suits. On the next page we will show how the misfit actually influences the prospects and the playing power of hands WITH fit.

If we consider the 15% when you do NOT have a fit, then we have to distinguish between the pairs of hands mentioned above – I am sure you would agree that it is one thing to have a board where your Zar Misfit Value is 2, and it's a totally different thing to have another board ALSO with NO fit, where the Zar Misfit Value is 26.

We will show **HOW** this can be used **to adjust** our Bidding **Levels** AND the **Type** of the Contract during the course of this presentation. You probably already see WHY we say that if you have balanced hands with NO FIT, you play in NT **One Level down** – you simply deduct the Zar Misfit Values which in the case of two balanced hands average 5 Zar Misfit Points – this also covers the cases where you **get close to 0** Misfit points, which is the deadly "mirror" distribution. Experiments show that you have to deduct even **more** than the 5 points for the mirror, but we keep it uniform at 5-point-deduction.

In the same line of thinking, when you have a LARGE Zar Misfit Number, you make a LARGER deduction from the total Zar Points, ending up TWO levels, sometimes even 3 LEVELS down from the Level calculated IF you HAVE had a FIT.

Thus, with 52 Zar Points and NO fit but balanced hands you end up in a 3 NT contract since the misfit value is low – this in turn means that the DISTRIBUTION PART of the Zar Points calculations is also expected to be very low (average 10 Zar Points for Balanced Hands) and the HCP+CTRL part is HIGH, so you actually have the brute force to play the NT contract. With 52 Zar Points but LARGE value of the Zar Misfit, the deduction will bring you well into the part-score Level, if you don't have a fit.

Let's have a look at a couple of distributions when you **DO have a fit**, but **with BIG** Zar Misfit values.

AKQJxxxxxxxxx	-
-	xxxx
-	xxxx
-	xxxxx

The **Zar Misfit value is 26** – the maximum possible, but with a 13-card fit. And prospects are not that bad (if you, holding the 13 spades, happen to win the bidding by suggesting a Spade contract at some level which fits your declarer's play skills). And if the opponents overbid you, let's hope the declarer of the 7NT would be your Right-Hand-Opponent). You can certainly see that the opponents CAN have 13 tricks in 7NT if the Left-Hand-Opponent is the declarer, right?

Similarly, we can have a relatively large misfit value with normally distributed fit, like:

AKQJxxx	xxxxxx
-	xxxxxxx
xxxxxx	-
-	-

A large **14-point** misfit (1 + 7 + 6 + 0), but with a **Superfit** – and you'll be able to make quite a few tricks on cross-ruff. In fact you'll make a GRAND with **ONLY 10 HCP** (the trump honors). Change the black suits of East and you get a **26-point** Zar Points Misfit with no fit – a 12-point difference!

We have two different GRANDS here with two different Zar Misfit Values (**26 vs. 14)** and two different fits (**13:0 vs. 7:6**). Not only that, but they have the same HCP and CTRL counts (assuming you only have the four trump honors and no side-suit honor).

But how can you get to a GRAND when in BOTH boards you have only 10 HCP and the difference in misfits and in the hands in general are so vast??? Well, let's calculate the Zar Points, just for the heck of it.

In the first board with the 13 spades, the left-hand-side guy has 13 + 13 + 10 + 3 = **39** Zar Points (with 10 HCP and 3 CTRL), while his partner has 9 + 5 + 0 + 0 = **14** Zar Points for a total of 53 Zar Points. When you add the Zar Misfit Points (since there is a **superfit**) you end up well above the **67** Zar Points for a GRAND.

In the second board the picture is different indeed. The left-hand-side guy 13 + 7 + 10 + 3 = **33** Zar Points (with 10 HCP and 3 CTRL in the trump suit), while his partner has 13 + 7 + 0 + 0 = **20** Zar Points, for a total of 53 Zar Points or points barely needed for Game. Now we add the **14 Zar Misfit Points** (1 + 7 + 6 + 0, since there is a **superfit)** and get to 53 + 14 = **67** needed for a Grand. Are you having fun? I am...

You probably have noticed already, that we can reach the same 67 Zar Points for a GRAND by adding NOT the misfit points, BUT the Superfit points, which in BOTH hands are 5 * 3 = 15, since in both cases the Zar Ruffing Power is **3**!!!! Just to refresh your memory – Zar Ruffing Power gives you 1 extra point per super-trump (above the regular 8-card fit) when your shortest side-suit is a Doubleton, 2 extra points if it is a Singleton, and 3 extra points per super-trump if your shortest side-suit is void. In other words, when you have a superfit, you add **either** the Zar Misfit Points **or** the Super-trump points, **whichever is bigger.**

What happens when **you do NOT have a fit?** Then you simply subtract the Zar Misfit Points, like when **dropping the Level for NT contacts.**

The other side of the coin presents the boards when we have 0-point Misfit calculation. This means **"mirror"** distribution, which is always a bad sign unless you really have the **brute power** to pull the game out.

So when you have a FIT, then a **large** Zar Misfit value is **good,** even MORE so if you have a **Superfit** – you know that then the Game Plan will be a cross-ruff in the misfit suits. It is harder to "calculate" the Misfit Points during the bidding when you have a fit though (the M2 I am talking about) and you should exclude the difference in the trump suit also since that is not a contribution by itself, but you have to try to interpolate it.

One more important note. It is a **common misconception** that when you have the strength for a Game (say, 26 Goren Points) and a misfit, you simply play the Game at 3NT. If you really have around 26 Goren or 24-25 HCP and a Large Zar Misfit value, you'll have hard time making **even 1NT** sometimes, let alone 3NT!

Not only you'll have to play most of the suits from one hand only (rather than playing against the long portion of the suit or against a short honor, for example) but the COMMUNICATIONS in general are very **fragile** when you play on NT with misfitted hands.

We actually started this misfit conversation in the first part of the book (the Zar Points Aggressive Hand Evaluation) when we presented the discussion with Mike Lawrence on a specific misfitted board. We stressed even then that misfit with a side fit is a very productive thing indeed (or fit with a side misfit, if you like it better)

Have people taken into account misfits even before Zar Points?

Certainly!

You have probably heard of another rule stating that you basically should stop the bidding the moment you "smell" a misfit. The problem so far was that **neither** "smell" **nor** "misfit" was actually defined in any precise shape or form, so you basically have to "smell" what "smell" really is...

As one smart guy put it by the end of the last century "It depends on what the meaning of the word "IS" is".

It is interesting to mention **WHAT prompted me** to come up with the Zar Misfit Calculation.

When I made the Zar Count Machine on the WWW.ZarPoints.COM website, one of the sets I initially put there was the historic Culbertson-Lenz match of the Century, played in the early 1930.

Among other things, Zar Count Machine actually evaluates the boards in eight different evaluation systems, including Goren, Bergen, LTC, Lawrence, Zar Points, etc.

The very first board from the set caught my attention with the freaking results – everybody (Zar Points included) was completely off track.

Here is the board:

♠----	♠J 10 9 6 5 4 3
♥K J 9 8 2	♥----
♦K 10 9 2	♦8 4 3
♣K J 8 6	♣A Q 5

The two hands have **18 HCP in a total misfit** but look what the **"experts"** say:

- Zar Points: **10 tricks**! 54 points!, 3 NT since there is no fit (good luck, boy)
- LTC: **11 tricks**!!! 4 NT since there is no fit (one level down)
- Lawrence: **12 tricks**!!!!! 5 NT since there is no fit (one level down)

Oh-la-laaaa ...Can you believe it ??? It looks like all methods are garbage, Zar Points included!

I didn't know what to do ... so I made an "executive decision" and cowardly cut-off the board!

"Boo - Shame on you, Zar".

I cut it off, BUT continued thinking about it.

The result – the **Zar Misfit Points**. Then everything fell into its place.

We will come back to the Zar Misfit values later in the presentation, with specific research tables showing **the probabilities for any specific misfit**.

To finish this introduction to the Zar Misfit Values, let's get back to the first set:

xxxxxx	-	xxxxx	-
xxx	xxxx	x	xxxxxx
xxx	xxxx	xxx	xxxx
x	xxxxx	xxxx	xxx

The first pair has $M4_1 = 6 + 1 + 1 + 4 = \mathbf{12}$, the second has $M4_2 = 5 + 5 + 1 + 1 = \mathbf{12}$.

Turns out they are the **same!**

You now see why we started this Zar Misfit presentation with a reminder about the important point in Zar Points (the sum of the differences between the suit lengths) – it's always the DIFFERENCES that matter in bridge – something few people pay attention to in real life.

As they say in Physics – **the differences create the potential**.

Opening Bids Probabilities

If you have made it thus far, you already know how to count Zar Points. Needless to say, the Zar Points Bidding Backbone is based on ... Zar Points Hand Evaluation.

Throughout the presentation we will constantly compare the 3 types of systems:

a) Strong-2C systems;
b) Strong-1C systems;
c) Zar Points System;

and the three types of opening decisions, related to the bidding systems:

a) opening based on Milton HCP only (12+);
b) opening based on Goren points (13+);
c) opening based on Zar points (26+).

WHY do we use **Milton and Goren** evaluation when lots of experts use different means like LTC, etc.? (**Milton Work** is the gentleman who came up with the **HCP**, the 4-3-2-1 count of honor points we all know) Because MOST systems have their **BID-LIMITS** in either HCP or Goren distribution-related point-counts. These 3 tables are going to reveal the Milton, Goren, and Zar world at the point of **opening** – and we will see how they compare in terms of "covering the probabilities" at this specific point of opening.

WHY do we use **13** (for Goren) and **12** (for Milton HCP)? Because of the 26 Game-limit condition for Goren and the Culbertson Rule that two opening hands make a Game (26 = 13 + 13), while since the "expected value" of an average hand is a hand with a doubleton or 1 Goren Distribution point, we come to the 13-1=12 Milton HCP.

As we mentioned, predominantly people base their decision to open or not to open either counting HCP only, or counting HCP plus some kind of distribution points, like the Goren 3-2-1. Therefore, before going through the principles of Zar Points Bidding, we are going to do some research regarding the three most common evaluation methods (NOT principles or systems or conventions etc, but just methods) on which the initial hand evaluation is based (and from there, the fundaments of the entire bidding).

We are going to present **the probability tables** for the opening bids (or opening hands) for HCP (Milton Work), then for Goren (HCP + 3-2-1 for distribution) and ... yes, then for Zar Points.

Later, we will present another 3 tables, which are going to reveal the world at the point of **responding** (again from the perspective of Milton, Goren, and Zar). This means that we will present the probabilities for our responses AFTER our partner has opened the bidding, in other words, when he has 12+ HCP, or 13+ Goren points, or 26+ Zar Points.

Next, when we come to **overcalling**, we will see the probabilities for us having an overcalling hand after the RHO has opened (we assume that the opponents are opening with **straight 12 HCP** (no distribution points added), rather than playing some exotic stuff like Zar Points.

Then we come to **competitive bidding**, we will present the last 3 tables revealing the world at the point of responding after the RHO has **overcalled over our partner**'s opening bid.

Lastly, we will consider the position of the **advancer**, the “last Mohican” in the bidding process, the partner of the overcaller.

We will also reflect what the major systems like 2/1, SAYC, Acol, and the Strong Club systems offer in these respects.

These sets of tables are going to even **show you what YOUR system covers**, so these 12 tables will be of interest to you even if you think that Zar Points have nothing to do with the game of bridge and you don’t even want to hear about them.

So, take a look – it will be an educational experience from one or another point of view. Nobody expects you to change your system, just relax and read.

So, to put it more **formally**, the four groups of research tables are:

1) Probabilities of collecting X-number of points for **all distributions** at the point of **opening**.

2) Probabilities of collecting X-number of points for **all distributions** at the point of **responding**, i.e. after your PD has opened the bidding.

3) Probabilities of collecting X-number of points for **all distributions** at the point of **overcall**, i.e. after your RHO has opened the bidding.

4) Probabilities of collecting X-number of points for **all distributions** at the point of **responding** after opponents' **overcall**, i.e. after your PD has opened the bidding and the RHO has overcalled.

5) Probabilities of collecting X-number of points for **all distributions** at the point of **advancing**, after partner’s **overcall** the opening of the RHO.

And as mentioned, throughout this Zar Points Bidding presentation we will always “run things in parallel” with the vastly-used groups of bidding systems today:

1) **Strong 2C system** (one strong bid of 2C with **21+ HCP**). Here you can shove systems like 2/1, SAYC, Acol, etc. Some people call these systems “natural” although virtually nothing in bridge is “natural”. I mean, they are as natural (if not LESS!) as any Strong Club system or Zar Points System for that matter, as we will see real soon.

2) **Strong 1C system** (one strong bid of 1C with **16+ HCP**). Here you can shove the wide variety of Strong Club systems like Precision, Super Precision, Icelandic Relay Club, Ultimate Club, Relay Precision, Power Precision, Viking Club, etc., Blue Club being the best-of-breed representative throughout the years.
3) **Strong dual-1C system** like Polish Club, Roman Club, etc. where the 1C opening has a weak alternative, revealed on the second round of bidding.

The first question we are going to pose and answer is "What are the probabilities of having X amount of points", whatever "points" means in your Hand Evaluation system.

Before getting into our experiments, let's have a look at the *"The Official Encyclopedia of Bridge" regarding the probabilities of holding certain Milton HCP:*

Milton HCP Table

HCP	Probability	HCP	Probability
0	0.36	16	3.31
1	0.79	17	2.36
2	1.36	18	1.61
3	2.46	19	1.04
4	3.85	20	0.64
5	5.19	21	0.38
6	6.55	22	0.21
7	8.03	23	0.11
8	8.89	24	0.056
9	9.36	25	0.026
10	9.41	26	0.012
11	8.94	27	0.0049
12	8.03	28	0.0019
13	6.91	29	0.0007
14	5.69	30	0.0002
15	4.42	31-37	0.0001

Looking at the simple table above, you may have noticed that getting 21+ HCP for a "normal" **Strong 2C** opening happens around **0.8% of the time –** that is 1 deal in every **125 boards**, while getting **7-12 HCP** happens around every other deal (50% of the time).

You will notice that the **second column** represents the cases for opening **Strong Club** 1C. If you add the percentage points in the first column, you end up with 91.25 %. This leaves us with less than **9% chance** for opening Strong 1C.

So roughly, Strong 2C divides the cases into two groups of **1% against 99%,** while the Strong 1C divides the space into **9% against 91%**.

The important thing to consider is the diapason for the **99% - the limit is 21 HCP**, while the diapason for the **91% has a limit of 16 HCP**. We are talking percentages of ALL hands, the ones you **pass** included, obviously.

You have **less than 11** HCP almost **57%** of the time (pass) which in turn leaves

- **34%** for a non-strong or **normal** opening in **Strong 1C** system.
- **42%** for a non-strong or **normal** opening in a **Strong 2C** system.

We will have a deeper conversation about these numbers in a bit and will actually divide these categories into subcategories so we have a clear picture about what kind of bid covers what kind of "ground".

We know already (and will see it from the forthcoming tables also) that Zar Points have an opening in **47%** of the cases, Distribution (Goren) based systems have an opening **41%** of the cases, while pure Milton HCP based systems have an opening **35%** of the cases. The question now is HOW you use the opening **bidding space** in terms of percentages of different bids.

The first comparison is something we also have already done – the STRONG opening bids in the Strong-2C, Strong-1C, and Zar Points bidding:

- **<u>Strong 2 Clubs</u>**: the span of the **normal** opening spreads across **<u>4 Levels</u>** (since Goren Levels are 3-points strong);
- **<u>Strong 1 Club</u>**: the span of the **normal** opening spreads across **<u>2 Levels</u>** (since Goren Levels are 3-points strong);
- **<u>Zar Points</u>**: the span of the **normal** opening spreads across **<u>1 Level only</u>** (since Zar Points Levels are 5-points strong).

Thus, in Zar Points, the moment your partner **opens** (his mouth) you know precisely where you stand, if you have a fit (and in the 15% when you don't have an 8-card fit, you know you are at least 1-Level below, depending on the misfit you see from your hand).

So while both Strong 2C-systems and Strong 1C-systems divide the space in **2 Layers** (the Strong-layer which is 1:99 for the 2C-systems and 9:91 for the 1C-systems), Zar Points divide the space into **3 Layers** (**Normal** – 26 to 30 Zar Points; **Medium** – 31-35 Zar Points, and **Strong** – 36+ Zar Points). Please NOTE that we are talking layers at the **time of opening** rather than adjusting at the second or third round of bidding (see the next page).

Since Zar Points are 2 times **"lighter"** (based on 52 vs. 26 points for Game) than Goren Points (which effectively both Strong 2C and Strong 1C systems use), this means that the **5-point** Level for Zar Points is a bit more than **2 HCP** in Goren equivalent.

Now you have an idea about **the actual precision** of the Zar Points Layers in **"conventional" terms.**

We will also see how EVENLY these 3 layers divide the Bidding Space while giving you the **freedom** to bid naturally within all the 3 Layers. We will also see how "misleading" the 2-HCP interval might be since we are trying to measure different beasts with the same meter ... (see the Zar Distribution Table on page 19).

Probably the MAIN **complaint** about Zar Points is that "partner **cannot double** for penalty since he doesn't know what you have opened with". TRUE, **if** we are applying Zar Points in a "natural" bidding system like 2/1 or SAYC or Acol, where the span of the hand is **"4-levels-wide"**- that's the difference between a GRAND and a PART-SCORE my friend, ever thought about that? Let alone playing a part-score at Level 1, when you have a cold Game (in another suit, of course). How many times have you opened at level one with 18-19 HCP and strong-playing-power only praying that your partner doesn't pass? And most of the time he DOES pass – it's a **probability game**!

A common "defense" of the Strong 2C systems goes like this:

"True, the diapason of normal opening is huge, but you **will narrow the range later**".

Later? When later – on the next board? Chances are there will be no "later" if you hold 18-20 HCP, just look at the probabilities! And the opponents may have raised the bidding level too high for you to make a reasonable "re-bid" after your partner's pass (which in turn is even **more** probable when you have half of the HCP power and the opponents bid). So "later" is a reasonable option only if the following conditions are met:

1) You somehow forbid your partner to pass when you have 18+ HCP (claiming, for example, that it's obvious you are strong when he is weak and that he doesn't have any clue for this game);
2) You somehow forbid your opponents to interfere when you have 18+ HCP (claiming, for example, that you get angry and unpredictable when they do this kind of stuff);

And "70% of the auctions in today's bridge are competitive" (Garozzo) – just look at the statistics yourself if you don't trust Garozzo. **The sooner you restrict yourself** the better chances for your partner to make an informed decision and cooperate intelligently. Otherwise the name of game would have been "**monologue**" rather than "bridge".

Throughout the presentation this Zar Points Principle will be applied again and again in different situations – **LIMIT YOURSELF EARLY**.

Here you have the opener "restricted" within virtually **2 HCP** (the HCP equivalent of 5 Zar Points)! If I open 1 Spade in Zar Points, you know that the HCP-expectation is 10-12 HCP (since I have unbalanced distribution and have added points for Controls). So if you have "great expectations" about the **defensive** strength of my hand, we are probably just playing different systems...

Another benefit of having the **Zar Points Layers** in place is that you are FREE as a bird in terms of the chance of misleading your partner in both length of the suit and strength. I can open 1S and then repeat the suit at 2S no problem – partner knows that I have 5 cards there (since I would have opened 2S directly with 6 cards and 26-30 Zar Points) – how many times have you scratched your head WILLING to bid 2S in a similar situation, being afraid that your partner would think you have a 6 cards-suit?

Let's point out one more thing - it's regarding the "attitude" of bidding. Due to the fact that the Opening spreads throughout 4 levels (10-21 HCP), the basic "push" comes from the so called **forcing** bids. In Zar Points only the openings of 1C and 1D are forcing since they are artificial. In fact the 1D opening even is not forcing – I can pass it with a weak hand with diamonds since my partner is STILL limited!.

IF a bid is not artificial, it is NOT forcing (due to the simple fact that the opener is VERY limited). Not only that, but AFTER the opening, NO bid from the opener is **forcing either**! There is no NEED to. The steering wheel is in the hands of the responder (who certainly **CAN force**).

This also eliminates the common trouble in Strong 2C-systems for example, coming from the fact that the requirements for jump-forcing after opening, for example, are **DUAL**, meaning that you need to have BOTH a 6-card suit AND 17+ HCP to jump. What are the chances for that, dude? Isn't it more probable that I EITHER have a 6+ card suit OR 17+ HCP? Why should bidding be such a painful exercise **full of compromises** causing the endless discussions about who's right who's wrong (hey partner, I am always right)?

My good friend Lueben Zaykov once mentioned something very important (he actually often mentions important things) while we were discussing the system we were about to play in a tournament. I said "Listen, 1C is 16+, everything else if under 16 – and just use your common sense". To which he smiled and replied "Zar, the bad news is that **common sense differs**". How very true.

Let's start looking at the research tables.

All tables are based on a set of 4 Million Hands from 1,000,000 boards – sometimes they are studied separately, sometimes in pairs, sometimes as self-contained board, depending on whether we want to look at hands or boards, etc. The SAME database of 1,000,000 boards is used in EVERY case (Goren, Milton, Zar, Strong 2C, Strong 1C etc) so the numbers are "in synch" and fair. We will start with the table presenting the **Zar Points Opening** numbers relative to the HCP which you are familiar with.

You will see that hands with 26+ ZP are 468362 or **46.8%** of the total number of 1,000,000 hands, while the number of boards passed out is 1711 or only **0.2%** of the 250,000 boards.

The **base** in the table below means:

- base of 1,765,106 is the % within all opening hands;
- base of 4,000,000 is the % within all the 1 Mill boards, rather than among opening;

You can also see WHERE the expectation from HCP point of view is for all the sections spreading over the 5-point layers:

- **Normal** openings of **26-30** Zar Points – expect around **12** HCP;
- **Medium 1D** opening of **31-35** Zar Points – expect around **15** HCP;
- **Strong 1C** opening of **36+** Zar Points – expect around **18+** HCP;

Here is the table itself:

HCP	26	31	36	41	46	51	56	Total	Percent
1	0	0	0	0	0	0	0	0	0.0
2	0	0	0	0	0	0	0	0	0.0
3	2	0	0	0	0	0	0	2	0.0
4	19	0	0	0	0	0	0	19	0.0
5	198	0	0	0	0	0	0	198	0.0
6	1279	0	0	0	0	0	0	1279	0.1
7	8438	11	0	0	0	0	0	8449	0.5
8	28704	186	0	0	0	0	0	28890	1.6
9	67681	1098	0	0	0	0	0	68779	3.9
10	135956	4647	4	0	0	0	0	140607	8.0
11	193768	16778	61	0	0	0	0	210607	11.9
12	**220032**	37709	310	0	0	0	0	258051	14.6
13	183280	71501	1544	0	0	0	0	256325	14.5
14	120211	98758	5189	10	0	0	0	224168	12.7
15	56718	**107887**	12144	37	0	0	0	176786	10.0
16	18046	93358	21163	221	0	0	0	132788	7.5
17	3676	59765	30496	794	0	0	0	94731	5.4
18	286	29387	**32691**	2079	4	0	0	64447	3.7
19	4	9802	28232	3460	4	0	0	41502	2.4
20	0	2440	17793	5203	51	0	0	25487	1.4
21	0	268	9041	5703	156	0	0	15168	0.9
22	0	2	3267	4878	288	0	0	8435	0.5
23	0	0	798	3263	397	0	0	4458	0.3
24	0	0	134	1483	459	3	0	2079	0.1
25	0	0	8	634	429	11	0	1082	0.1
26	0	0	0	146	296	10	0	452	0.0
27	0	0	0	24	165	18	0	207	0.0
28	0	0	0	5	54	18	0	77	0.0
29	0	0	0	0	15	10	0	25	0.0
30	0	0	0	0	2	6	0	8	0.0
	--	--	--	--	--	--	--	-----	------
	1038298	533597	162875	27940	2320	76	0	1765106	100.0
	58.8	30.2	9.2	1.6	0.1	0.0	0.0	%, **base** of	1765106
	26.0	13.3	4.1	0.7	0.1	0.0	0.0	%, **base** of	4000000

We also see the **GAP** in % when we move from 36 Zar Points (9.2%+) to 41 Zar Points (1.6%) to 46 Zar Points (0.1%) – so the limit for **opening 1C** is well placed, with the 1C opening covering roughly **11%** of the openings and **6% of all the hands**. The 1C openings in Strong Club systems cover 9% of all hands, as we already mentioned.

A couple of other observations worth mentioning:

- **64%** of the (opening) time the opener has **between 11 HCP and 15 HCP**;
- **22%** of the (opening) time the opener has **16 HCP** or more;
- **78%** of the (opening) time the opener has **15 HCP** or less;
- **14%** of the (opening) time the opener has less than **11 HCP.**

Let's have a look now at the probabilities of holding ANY amount of Zar Points. We will present this in two forms – raw count of hands and then the %.

Table below shows the spread of probability of **8 to 57** Zar Points

	0	1	2	3	4	5	6	7	8	9
0 >	0	0	0	0	0	0	0	0	494	928
10 >	2427	4268	7754	10883	16085	19941	27020	32587	39811	44894
20 >	51242	55086	59544	61079	62123	65472	83469	55583	51470	46555
30 >	41136	36237	30998	26148	21787	18424	15175	11620	8934	6539
40 >	4947	3298	2193	1491	977	592	379	213	100	54
50 >	26	14	3	0	0	0	0	0	0	0

And now the same thing in **PERCENTAGES (8-57** Zar Points)

	0	1	2	3	4	5	6	7	8	9
0 >	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
10 >	0.2	0.4	0.8	1.1	1.6	2.0	2.7	3.3	4.0	4.5
20 >	5.1	5.5	6.0	6.1	6.2	6.5	8.3	5.6	5.1	4.7
30 >	4.1	3.6	3.1	2.6	2.2	1.8	1.5	1.2	0.9	0.7
40 >	0.5	0.3	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0
50 >	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

This is just for reference – there aren't many conclusions that can be drawn from here. One noticeable fact though is that by far the **biggest** percentage (**8.3%**) has **26** Zar Points.

When you look at the % of the hands (out of the 4,000,000 hands) which have 41+ Zar Points, you see that the number is **0.8%** - **exactly** the number that you have **21+ HCP** and can open Strong 2C, as we will see later.

In other words, you can consider that the **Strong 2C opening** corresponds to **having 41+** Zar Points.

Although **HCP-based-thinking should be left behind** and used just as a general pointer, or for nostalgic reasons, if you want.

You cannot measure new-realm stuff with the old-realm meters.

The great Garozzo was able to see that earlier:

"The Blue Club system that we played years ago **just is not good enough** for top-level play today. **Distribution is the most important thing** and you should gear your bidding to focus on that first."

Zar Points address this concern well enough, as the research numbers show.

So it's time to have a closer look at the Strong Openings in the Zar Points bidding. This is the subject of the next section, where we will continue to closely monitor the **numbers** and **probabilities** – some of them are actually related to the topics of this sections, too, as you would be able to recognize.

Zar Points Strong Openings

So we are ready to address the opening bids, and we will start with the **strong opening** hands, so we get them out of the way – as we mentioned, it's "the other hands" that you hold more frequently, carrying the immediate **"I am limited"** statement.

We will start with a little mental exercise. Just think about the "**utilization**" of the opening bid of **1 Club** and **1 Diamond** in a **Strong-2C** system like 2/1, Acol, Standard American, etc. Take your time – and think.

What do you know about your partner's hand when he **opens 1C**?

What do you know about your partner's hand when he **opens 1D**?

What is the **difference** between the two openings?

Did you come up with something meaningful, going beyond "this is his better minor" type of bla-bla-bla?

It's hard to come up with something that doesn't insult your intelligence, isn't it? Here is the relief for you – it's not because you are dumb, it's because the system is dumb. The only "gain" of that type of opening in 1C and 1D is that this would shift **the lead** against an eventual 3NT into the other minor, where you have said **loudly** you were week.

Basically BOTH opening of 1C and 1D say "Partner, you know what? I have an opening. And by the way, my strength is limited within a difference of **4 Play Levels**, or **9-10 to 21** HCP, if you prefer". And we are talking about **the most important** bids available, the **first** and **second** steps in the stairway of bidding, starting at 1C and ending at 7NT! The two **base-steps** that cut the MOST out of the bidding tree, wasted to a point you ask yourself should you laugh or should you cry...

You can immediately see (from the Zar Points Opening Probability Table above) the COVERAGE of the Zar Points Layers:

- **Normal** openings of **26-30** Zar Points happen almost:
  - **60%** of all openings or
  - **26%** of all hands.
-
- **Medium 1D** opening of **31-35** Zar Points happen almost:
  - **30%** of all openings or
  - **13%** of all hands.
-
- **Strong 1C** opening of **36+** Zar Points happen almost:
  - **10%** of all openings or
  - **5%** of all hands.

============================== **ZAR OPEN** =================================

Number of boards passed out = 7366 or 0.7%
Opening with 26+ Zar Points = 466663 or **46.7%** of the 1000000 boards
Hands w/ 25 ZP & 4+ Spades = 25322 or 5.4% of the opening hands

Opener Range	Responder's Range 10-	%	11-15	%	16-20	%	21-25	%	26-30	%	31+	%	Total
26-30	222	0.1	17924	3.8	60291	12.9	87888	18.8	68118	14.6	41640	8.9	59.4
31-35	875	0.1	12383	2.7	35633	7.6	44161	9.5	27871	6.0	12699	2.7	28.6
36-40	423	0.0	6084	1.3	14692	3.1	15191	3.3	7669	1.6	2537	0.5	10.0
41-45	111	0.0	1546	0.3	3037	0.7	2693	0.6	982	0.2	237	0.1	1.8
46-50	12	0.0	208	0.0	283	0.1	183	0.0	45	0.0	6	0.0	0.2
51-55	0	0.0	7	0.0	5	0.0	5	0.0	0	0.0	2	0.0	0.0
56-60	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0
	2643	0.6	38152	8.2	113941	24.4	150121	32.2	104685	22.4	57121	12.2	100.0

Open ZP	Major 52+	%	NoTrump 52+	%	Minor 57+	%	Slam 62+	%	Grand 67+	%	Total
26-30	30431	3.0	48572	4.9	3976	0.4	16093	1.6	3576	0.4	10.3
31-35	18327	1.8	32847	3.3	2788	0.3	15563	1.6	4483	0.4	7.4
36-40	7048	0.7	12932	1.3	1224	0.1	9449	0.9	3433	0.3	3.4
41-45	1080	0.1	2286	0.2	211	0.0	2694	0.3	1382	0.1	0.8
46-50	45	0.0	131	0.0	8	0.0	257	0.0	272	0.0	0.1
51-55	0	0.0	1	0.0	0	0.0	4	0.0	14	0.0	0.0
56-60	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0
	56931	5.7	96769	9.7	8207	0.8	44060	4.4	13160	1.3	21.9

Above percentages are based on 1000000 boards.

Totals: 219127 games + 247536 part scores = 466663 opening hands

Let me discuss the above tables because you **may get confused** while “bombarded” with so many numbers.

First, you probably wonder WHERE this magic number **99.3%** came from. We have 1,000,000 boards on which we SUPPOSE that BOTH pairs play Zar Points. We check the hands one after another UNTIL we find someone who CAN open (in Zar Points terms). On the next several pages we will see how the picture looks like when BOTH pairs play straight Milton Work HCP and then when BOTH pairs play Goren Points.

So 99.3% of the time SOMEONE on the table has a Zar Points opening and **only 0.7%** of the boards are passed-out. It is interesting to note a study made by John Plaut on a five years worth of World Championships Boards, stating that **0.9%** of the boards are passed, 50% are Games, 40% are part-scores, and 9% are slams. In other words Zar Points are a bit more aggressive than the World-Championship-Level play. The study was made in the 80-ies though, so you can assume that these days the numbers are closer.

You probably have noticed that when the opener is in the Normal range **(26-30)** the responder is “most probably” in the **21-25** Zar Points range - that is the **“Invitation”** zone IF you have a fit.

When the opener is in the **1D-opening (31-35)**, the responder is **also** most probably in the **21-25** Zar Points range. In other words, after 1D opening most of the time when you have a fit you would be between Game-invitation and Game.

And when the opener is in the **1C-opening (36+),** the responder is **again** most probably in the **21-26** Zar Points range. That’s simply because the 21-25 range averages 23 Zar Points and 23 Zar Points split in 10-11 for Distribution and 12-13 for HCP + CTRL, meaning (in terms of straight HCP) around 9-10 HCP.

However, when you look at the difference with the next-lower interval (16-20), the interval against a **36+ 1C-opening** is the SMALLEST (4.5% vs. 4.3%) which makes sense in terms of the “remaining HCP” after a strong opening.

There are other interesting conclusions which I am sure you can make yourself by doing a little homework, if you think it’s worth the effort.

To compare the Zar Points strong opening probabilities with the ones for Strong 2C and Strong 1C systems, we will present the SAME tables above against the SAME 1,000,000 boards for Goren and Milton points – you can check YOUR system against these tables, depending on what you actually use.

First we will present the Tables for Milton, followed by the ones for Goren

=========================== **MILTON OPEN** =====================================

Number of boards passed out = 34027 or **3.4%**
Opening with 12+ HCP = 347677 or **34.8%** of the 1000000 boards
Number of times can't open = 652323 or 65.2%

Opener	Responder's Range												
Range	5-	%	6-9	%	10-12	%	13-15	%	16-18	%	19+	%	Total
12-14	36383	10.5	78607	22.6	53892	15.5	27291	7.8	8538	2.5	747	0.2	59.1
15-17	24791	7.1	41703	12.0	22856	6.6	9247	2.7	2109	0.6	82	0.0	29.0
18-20	10890	3.1	14072	4.0	5839	1.7	1604	0.5	253	0.1	2	0.0	9.4
21-23	3005	0.9	2829	0.8	827	0.2	127	0.0	9	0.0	0	0.0	2.0
24-26	560	0.2	315	0.1	44	0.0	6	0.0	0	0.0	0	0.0	0.3
27-29	52	0.0	13	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0
30-32	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0
	75681	21.8	137539	39.6	83458	24.0	38276	11.0	10909	3.1	831	0.2	100.0

You see that **Zar Points will open** almost **4 out of every 5 passed-out** boards in Milton (**0.7 %** passed out in ZP against **3.4%** for Milton!). In terms of responder ranges, the 21-25 Zar Points kind-of correspond to the 6-9 range in Milton terms (from probabilities point of view). As we move to Goren, a word of caution – no point is deducted for the 4333 distribution; only straight 3-2-1 points are calculated.

```
============================  GOREN OPEN  ================================
   Openings with 13+ Goren123  =    246742 or  98.7% of the boards
   Number of boards passed out =      3258 or   1.3%
```

RAW COUNT

Opener's Range	5-	6-9	10-12	13-15	16-18	19-21	22+	Total
13 - 15	8058	35285	44195	21491	10469	2900	483	122881
16 - 18	7441	27960	28616	10162	3777	751	95	78802
19 - 21	4954	14396	11028	2832	829	119	7	34165
22 - 24	1957	4322	2368	500	95	7	0	9249
25 - 27	416	764	292	42	2	0	0	1516
28 - 30	53	54	18	1	0	0	0	126
31 - 33	2	1	0	0	0	0	0	3
34 - 36	0	0	0	0	0	0	0	0
	22881	82782	86517	35028	15172	3777	585	246742

PERCENTAGE'S

Opener's Range	5-	6-9	10-12	13-15	16-18	19-21	22+	Total
13 - 15	3.3	14.3	17.9	8.7	4.2	1.2	0.2	49.8
16 - 18	3.0	11.3	11.6	4.1	1.5	0.3	0.0	31.9
19 - 21	2.0	5.8	4.5	1.1	0.3	0.0	0.0	13.8
22 - 24	0.8	1.8	1.0	0.2	0.0	0.0	0.0	3.7
25 - 27	0.2	0.3	0.1	0.0	0.0	0.0	0.0	0.6
28 - 30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
31 - 33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34 - 36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	9.3	33.6	35.1	14.2	6.1	1.5	0.2	100.0

So in terms of passed-out boards, here Zar Points open almost **every other passed-out** board by Goren (0.7% against 1.3%). In terms of responder ranges, the 21-25 Zar Points kind-of correspond to the 10-12 range in Goren terms (from probabilities point of view).

Since we already know about the Zar Misfit Points and the role of having a fit in order to get to a Game at Level 4 with 52+ Zar Points, it would be interesting to observe the difference between calculating Zar Points disregarding whether or not you have a fit, compared to the numbers obtained ONLY when you do have a fit.

We will also present the Game, Slam, and GRAND perspectives for Milton and Goren, so you can compare.

Here are the Game, Slam, and GRAND indications for Zar Points when you DO put the restriction of **having a fit**:

Opener's ZP	Game 52+/57+		Small Slam 62+		Grand Slam 67+		Totals
26 - 30	38849	15.5	8619	3.4	2967	1.2	20.2
31 - 35	30569	12.2	8468	3.4	3671	1.5	17.1
36 - 40	13203	5.3	6687	2.7	3349	1.3	9.3
41 - 45	1919	0.8	2032	0.8	1656	0.7	2.2
46 - 50	67	0.0	210	0.1	330	0.1	0.2
51 - 55	0	0.0	2	0.0	12	0.0	0.0
56 - 60	0	0.0	0	0.0	0	0.0	0.0
	84607	**33.8**	26018	**10.4**	11985	**4.8**	49.0

Breakdown:
- 64624 Major Games (Level 4)
- 19983 Minor Games (Level 5)
- total:84607 non-slam games

Above percentages are based on 250000 boards.

Now let’s have a look on the numbers **IF** you **disregard** the condition that you MUST have a fit in order to apply the 52+ Zar Points condition for a Game – numbers again are obtained from the **SAME** 1,000,000 hands of the 250,000 boards.

Opener's ZP	Game 52+/57+		Small Slam 62+		Grand Slam 67+		Totals
26 - 30	60848	24.3	9510	3.8	3120	1.2	29.4
31 - 35	46447	18.6	9305	3.7	3962	1.6	23.9
36 - 40	18579	7.4	7430	3.0	3604	1.4	11.8
41 - 45	2501	1.0	2282	0.9	1763	0.7	2.6
46 - 50	85	0.0	248	0.1	350	0.1	0.3
51 - 55	0	0.0	2	0.0	13	0.0	0.0
56 - 60	0	0.0	0	0.0	0	0.0	0.0
	128460	**51.4**	28777	**11.5**	12812	5.1	68.0

You appreciate the difference between 33% and 51% for Games, right? These are the percentages for Games **AFTER** one of the partners **has OPENED**, rather than in “ANY” case. Now let’s have a look at raw numbers for the 250,000 boards (BOTH pairs):

170,049 **games** + 78,240 **part scores** + **1,711 pass-outs** = 250000

The natural question is how these numbers look for Milton and Goren, right? Here is how.

MILTON:

Opener's **Milton**	Game 24+		Small Slam 32+		Grand Slam 36+	
12 - 14	39099	15.6	725	0.3	16	0.0
15 - 17	40108	16.0	934	0.4	33	0.0
18 - 20	20902	8.4	792	0.3	45	0.0
21 - 23	5450	2.2	647	0.3	27	0.0
24 - 26	706	0.3	248	0.1	10	0.0
27 - 29	31	0.0	29	0.0	5	0.0
30 - 32	0	0.0	3	0.0	0	0.0
33 - 35	0	0.0	0	0.0	0	0.0
	106296	**42.5**	3378	**1.4**	136	0.1

109,810 **games** + 131,788 **part scores** + 8,402 **pass-outs** = 250000

GOREN:

Opener's Goren	Game 26+		Small Slam 32+		Grand Slam 36+	
13 - 15	44094	17.6	5167	2.1	466	0.2
16 - 18	44213	17.7	6004	2.4	801	0.3
19 - 21	22388	9.0	5346	2.1	825	0.3
22 - 24	5100	2.0	3220	1.3	528	0.2
25 - 27	494	0.2	750	0.3	269	0.1
28 - 30	13	0.0	62	0.0	51	0.0
31 - 33	0	0.0	2	0.0	1	0.0
34 - 36	0	0.0	0	0.0	0	0.0
	116302	**46.5**	20551	**8.2**	2941	1.2

139,794 **games** + 106,948 **part scores** + 3,258 **pass-outs** = 250000

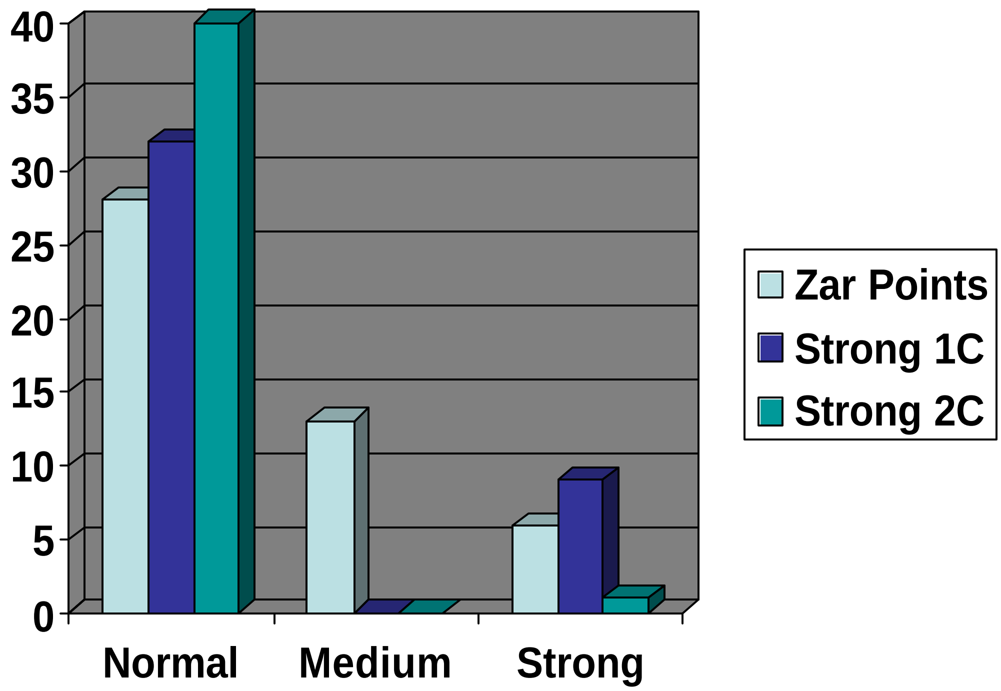
By now we know the Strong openings in the Zar Points Bidding Backbone:

- **1D** – 31 to 35 Zar Points ANY distribution;
- **1C** – 36+ Zar Points ANY distribution.

1C is the ONLY unlimited opening bid so it is the ONLY **forcing** opening, as already mentioned in the presentation.

Since we know that Strong 2C's strong opening happens 0.8% of the time and that Strong 1C's opening happens 9% of the time, we only have to mention that the "Medium"-strength opening for both systems when they play Strong NT (15-17 HCP) happens 5% of the time (we will see this later when compare the 10% probability for weak NT vs. the 5% probability of Strong NT).

This now allows us to present the **distribution** of the **LOAD** that the three kinds of systems put on the Bidding Tree:



It is important to note that since Zar Points open 47% of the boards vs. 41% for the other systems, the number of boards covered by "Non-strong" openings is virtually the same – 40% for the Strong 2C systems vs, 28 + 13 = 41%.

While in Strong 2C systems we have their **40%** of the boards spread between **4 Playing Levels difference** between the weakest and the strongest, in Zar Points we have them spread **within 1 Playing Level**!

What happens with the **other openings** at Level 1? That's the subject of the next section.

Zar Points Openings 1H and 1S

The discussions around 4-card Major vs. 5-card Major are ... endless.That's why we will not waste much space here with that. We WILL present the ... numbers, of course. Before that, let's make a humble confession here – Zar Points simply **cannot AFFORD** to open 5-card Major, just because BOTH 1C and 1D are artificial.

Thanks Goodness, though – this happens to be a **double-blessing**. It fits the main philosophy of the Zar Points bidding – being a MEASURED AGGRESSIVE bidding technique, and more importantly – it fits the numbers presented below.

The geographic "distribution" of 4-card vs. 5-card major basically goes like this – Europe is more oriented towards 4-card Majors opening, North America is more oriented towards 5-card Majors opening, rest of the world is mixed.

The "best defense" of 5-card Major is that "it is easier to find a fit" (since it requires only 3 cards support vs. 4 cards support for the 4-card opening). While this **SEEMS** to be correct, it is a statement made AFTER the fact that we ALREADY have a 5-card Major in our hands. In other words, it is a simple matter of **Conditional Probability** and to make such a claim is just "criminal". To find the truth, you have to multiply the probability to GET a 5-card Major first, with the probability to find a 3-card fit.

Besides, if that is a valid argument, why don't you switch to a 6-card Major to have even better chances of finding a Fit? In fact the 5-card Major became popular in the States for a different reason – to eliminate the chance of playing with Moysean 4-3 fit, which has some additional requirements to meet.

First though, let's address a simple question: HOW often do you have a **4+ card suit** in you hand? How often does you partner have a **4+ card suit**? The answer to both questions is naturally – **100%.** This follows directly from the Dirichlet Principle – we have 13 "balls" in 4 "drawers", simple.

The answer to the question regarding the chances of having **5 vs 4** cards in a major is shown on the rightmost column of the table below – you see that it is almost **12% vs. 24%**, that's **double** the chance!

When we address the issue of having **5:3 vs. 4:4** fits (the ACTUAL "fight-field" of this discussion), we see that the percentages are **11.8% vs. 16.3%**, which means that you have **137% better** chances to find a 4:4 fit compared to your chances of finding a 5:3 (3.8 x 137% = 5.2).

As we will see a bit later, the 5-card Major suffers one more drawback – the 5:3 fit is better suited for NT play while the **4:4 fit is better suited for a trump-play**. That's why for example you should accept the 3NT suggestion for a Game after your 1NT opening and a transfer to a Major by your partner, followed by a jump to 3 NT – unless you have 4 trumps by chance yourself, or you go to 4M due to having a suit-stopper concerns.

Here is the table that **shows how the fits are actually distributed**.

<u>8+ FITS</u>

Major and Minor 8+ Card Fits for East/West and North/South

	0	1	2	3	4	5	6	7	8	9	
0									200	23	*223*
1								3509	673	87	*4269*
2							21497	5195	715	56	*27463*
3						59280	19815	3637	396	15	*83143*
4					**81395**	36539	8958	1140	55	1	***128088***
5				**59220**	36280	12057	2114	174	5		***109850***
6			21380	19521	9220	2197	235	1			*52554*
7		3561	5319	3630	1216	196	5				*13927*
8	200	592	723	354	71	5					*1945*
9	28	79	65	17	0						*189*
	228	*4232*	*27487*	*82742*	*128182*	*110274*	*52624*	*13656*	*2044*	*182*	*421651*

Percentages

	0	1	2	3	4	5	6	7	8	9	
0									0.0%	0.0%	*0.0%*
1								0.7%	0.1%	0.0%	*0.9%*
2							4.3%	1.0%	0.1%	0.0%	*5.5%*
3						11.9%	4.0%	0.7%	0.1%	0.0%	*16.6%*
4					**16.3%**	7.3%	1.8%	0.2%	0.0%	0.0%	***25.6%***
5				**11.8%**	7.3%	2.4%	0.4%	0.0%	0.0%		***22.0%***
6			4.3%	3.9%	1.8%	0.4%	0.0%	0.0%			*10.5%*
7		0.7%	1.1%	0.7%	0.2%	0.0%	0.0%				*2.8%*
8	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%					*0.4%*
9	0.0%	0.0%	0.0%	0.0%	0.0%						*0.0%*
	0.0%	*0.8%*	*5.5%*	*16.5%*	***25.6%***	***22.1%***	*10.5%*	*2.7%*	*0.4%*	*0.0%*	***84.3%***

So **now** you see how the **5-card Major vs. 4-card Major** comparison sits.

The other side of the coin is the **non-fits** (you probably know already why I don't use the word misfit here – it's not an English-as-a-second-language problem.

Here is how the non-fits tables look like.

NON-FITS

Non-Fits for East/West and North/South

length	0	1	2	3	4	5	6	7	8	*Total*
0						136	216	95		447
1					930	1922	1501			4353
2				2189	6319	6891				15399
3			2276	9237	14270					25783
4		930	6429	**14228**						21587
5	131	1916	**6832**							8879
6	195	1586								1781
7	120									120
8										
9										
	446	4432	15537	**25654**	**21519**	8949	1717	95	0	78349

Percentages

length	0	1	2	3	4	5	6	7	8	
0						0.0%	0.0%	0.0%		0.1%
1					0.2%	0.4%	0.3%			0.9%
2				0.4%	1.3%	1.4%				3.1%
3			0.5%	1.8%	2.9%					5.2%
4		0.2%	1.3%	**2.8%**						4.3%
5	0.0%	0.4%	**1.4%**							1.8%
6	0.0%	0.3%								0.4%
7	0.0%									0.0%
8										
9										
	0.1%	0.9%	3.1%	**5.1%**	**4.3%**	1.8%	0.3%	0.0%	0.0%	**15.7%**

As a side effect we are able to see the EXACT numbers for the Zar Fit Theorem:

- You have at least **one 8-**card fit **84.3%** of the time;
- You have at least **two 7-**card fits **15.7%** of the time.

The numbers 85 against 15 are there since it is easier to remember. You probably wonder WHY there are so many empty cells in the non-fit table. That's because the hands that have (for example) 3-1 "non-fit" are already presented in the 8+-cards fit table.

The table presenting the **Zar Misfits Points** (how the 2 hands fit together) is below:

Zar Misfit Table

Misfit M4/M2		Best **FIT** in the Pair							
M4=	**M2=**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**TOTAL**
0	**0**		**1349**		**350**		**6**		**1705**
2	**2**	**2455**	**8308**	**5351**	**1692**	**325**	**30**		**18161**
4	**total**	**7024**	**22831**	**12412**	**4610**	**729**	**97**		**47,703**
	2	3232		4570		277			8079
	3	3792	13131	7842	2467	452	52		27736
	4		9700		2143		45		11888
6	**total**	**10638**	**26796**	**20230**	**4944**	**1206**	**97**	**4**	**63,915**
	3								
	4	5263	10020	8891	1960	542	45	2	26723
	5	4523	14248	9401	2600	551	45	2	31370
	6	852	2528	1938	384	113	7		5822
8	**total**	**8821**	**27099**	**14523**	**5411**	**772**	**93**	**3**	**56,722**
	4		2804		592		11		3407
	5	1749	5583	3356	1073	163	26	1	11951
	6	5333	10665	7709	2209	446	35	1	26398
	7	1739	6387	3458	1182	163	18	1	12948
	8		1660		355		3		2018
10	**total**	**5963**	**15527**	**11213**	**2576**	**605**	**37**	**1**	**35,922**
	6	958	3020	2008	472	103	9		6570
	7	1808	6425	3705	1138	188	15		13279
	8	2504	4092	4147	666	237	9	1	11656
	9	591	1793	1142	278	56	4		3864
	10	102	197	211	22	21			553
12	**total**	**2902**	**8814**	**4192**	**1550**	**208**	**28**		**17294**
14	Etc	990	2863	1931	416	113	4		6317
16	Etc	316	851	430	175	18	1		1791
18	Etc	55	190	120	27	5			397
20	Etc	13	32	13	4	1			63
22	Etc	4	2	1	3				10
		39181	**114262**	**70416**	**21758**	3982	393	8	**250000**

This table presents us with the opportunity to calculate the 15.7% of the boards where we do not have an 8+ card fit in a different way – 39,181 / 250,000 = 0.1567 or **15.7**%.

Another noticeable thing here is the difference in chance between having an 8-card fit and having a 9-card fit (exactly).

- **8-card** fit happens 114,262 / 250,000 = **46% of the time**;
-
- **9-card** fit happens 70,416 / 250,000 = **28% of the time**;
-
- **10-card** fit happens 21,758 / 250,000 = **8% of the time**;

So in almost HALF of the hands you have EXACTLY 8-card fit.

What about the misfit points themselves, though...

You have probably noticed that Zar Misfit points are always **EVEN**.

Do you see why?

Because no matter how you change the shape of a suit from one hand to the other, you always **subtract 1** from the first hand and **add 1** to the other, so whatever way you change the distribution within the two hands, you always introduce an EVEN change.

And since we already know that there are pairs of hands with 0 misfit points, it becomes clear that all Zar Misfit Points are even.

Knowing that the Zar Misfit Points are always even makes the task to communicate it between the partners easier.

If you have a closer look in the dependencies between M2 and M4 in the table **on the next** page, you can consider that M2 represents:

- About **75%** of the M4 if the **M4 is below 14** (so basically you **INCREASE M2 by 1/3** to get M4);
-
- About **60%** of M4 if **M4 is above 14**.

But how OFTEN do you get ABOVE 14 Zar Misfit Points?

You notice that **248K** of the cases has 14 points or less vs. ONLY **2K** for the rest.
In other words, you have **0.8% chance** to have more than **14 Zar Misfit Points –** that's EXACTLY the chance to pick up a hand for opening Strong 2C (1 in 125).!

Here is how the numbers stay in terms of dependency between M2 and M4:

M4	M2	Quantity	Percent
0	**0**	**1,705**	
2	**2**	**18,161**	
4	2	8,079	
4	**3**	**27,736**	**75%**
4	4	11,888	
6	4	26,723	
6	**5**	**31,370**	**83%**
6	6	5,822	
8	4	3,407	
8	5	11,951	
8	**6**	**26,398**	**75%**
8	7	12,948	
8	8	2,018	
10	6	6,570	
10	**7**	**13,279**	**70%**
10	8	11,656	
10	9	3,864	
10	10	553	
12	6	757	
12	7	2,757	
12	8	4,374	
12	**9**	**5,626**	**75%**
12	10	2,932	
12	11	778	
12	12	70	
14	8	1,095	
14	9	1,580	
14	**10**	**1,781**	**71%**
14	11	1,242	
14	12	508	
14	13	100	
14	14	11	
		247,739	

M4	M2	Quantity	Percent
16	8	91	
16	9	307	
16	**10**	**452**	**62%**
16	11	435	
16	12	318	
16	13	143	
16	14	41	
16	15	4	
18	10	79	
18	**11**	**129**	**61%**
18	12	89	
18	13	56	
18	14	31	
18	15	13	
20	10	4	
20	11	18	
20	**12**	**20**	**60%**
20	13	11	
20	14	9	
20	15	1	
22	12	2	
22	13	2	
22	14	6	
		2,261	

If we present the M4 points only and round up the numbers for easier grasp, here is what we end up with:

0	-	2,000	-	1%	
2	-	18,000	-	7%	
4	**-**	**48,000**	**-**	**20%**	
6	**-**	**64,000**	**-**	**25%**	
8	**-**	**56,000**	**-**	**22%**	
10	-	36,000	-	14%	
12	-	18,000	-	7%	
14	-	6,000	-	3%	
others	-	2,000	-	1%	(includes **16, 18, 20, 22**)

So **67%** or MORE than **2/3 of the time** you have **4, 6, or 8** Zar Misfit Points.

I hope the numbers above give you a clear perspective on these 2 important aspects of the Game – Fits and Misfits.

Here actually are **all** the "interesting numbers" from this type of research:

1)	8,111	0.8%	21+ HCP any distribution
2)	96,942	9.7%	12-14 HCP with 4333, 4432 or 5332 distribution and any suit
3)	48,155	4.8%	15-17 HCP with 4333, 4432 or 5332 distribution and any suit
4)	13,429	1.3%	18-19 HCP with 4333, 4432 or 5332 distribution and any suit
5)	5,375	0.5%	20-21 HCP with 4333, 4432 or 5332 distribution and any suit
6)	279,311	27.9%	11-20 HCP with at least one or more 5+ card suit (Major or Minor)
7)	12,858	1.3%	11-20 HCP with 4441 distribution
	562,766	56.3%	Hands with 0 - 10 hcp that have not been counted in 1) thru 7)
	28,026	2.8%	Hands with 11 hcp and 4333 or 4432 distribution not counted

Also note that:

1,054,973	includes 72,973 hands or 5. 5% that were counted twice, namely:	
2,004	0. 2%	Same hand counted twice, in 1) and in 5) above
52,969	5. 3%	Same hand counted twice: in 2), 3), 4), 5), or 6)
1,000,000	**Total hands sampled, 250,000 boards**	

These numbers should give you the shortest tool for you to figure out what YOUR system covers in terms of different bids.

So, back to the subject of this section:

- Opening **1H** in Zar Points backbone promises 26 -30 Zar Points and **4 or 5** cards in Hearts.
- Opening **1S** in Zar Points backbone promises 26 -30 Zar Points and **4 or 5** cards in Spades.

The **1H** opening can also have 4+ spades (natural bidding principles apply).

We already know **the openings in a suit at Level 1** in Zar Points. We also now the numbers in a variety of opening situations (we will see the corresponding numbers when the opponents interfere and when we have to overcall ourselves later), so now is the time to turn to the **Backbone** of the system, in other words what we do, and what makes us do what we do.

Zar Points Backbone communicates **two important things** which your partner can **relate** and draw the corresponding conclusions regarding the ratio of distribution vs. brute power (HCP + CTRL):

- the LIMITS in terms of **Zar Points;**
-
- the LIMITS in terms of **LENGTH** of the suits.

When you open **1H** or **1S**, your partner knows that you **can NOT have 6 cards** in these suits. It's either 4 or 5, clarifying it on the next round of bidding (if and when you get there).

WHY?

Because:

- With 26-30 Zar Points and 6-card suit you would have opened on Level 2!

- With 26-30 Zar Points and 7-card suit you would have opened on Level 3 (we shall see how later)!

- With 26-30 Zar Points and 8-card suit you would have opened on Level 4 (we shall see how later)!

While on the subject... you probably ask yourself what you do with a **two-suit** hands. All these questions are addressed in the next section "Zar Points Openings above Level 1" later in the presentation.

Thus, in the 1H / 1S openings we again apply the **LIMIT YOURSELF EARLY** Zar-Points principle. Two-suit hands with up to 5-5 get opened normally (level one) while **6-5**

and wilder get opened **above 1NT** level. Just to put your mind at ease for the moment, let's mention that a lot of the **openings above 1NT are relays.**

You get the picture already – due to the 1C and 1D openings **the entire bidding tree** is free for you to jump through while in very narrow **HCP** limits and due to the relay-openings at the higher levels – in very narrow **length**-limits.

You also understand that the **pre-emptive effect** of the hands with long suits is still here **BUT** your partner knows you have 26-30 Zar Points so he can make an **INFORMED** decision regarding what to do rather than scratching his head in vain.

The 1H and 1S openings also bring the Zar Points bidding into the Canape-style as you probably have already realized, again due to the artificial opening in minors.

So what do you do with the hands that do NOT have a Major? There are such hands too, right?

We already know the answer to this question in the case of having a 6, 7, 8 etc card suit – you simply open at the corresponding Level in the suit you have.

What do you do if you have a balanced hand with 26-30 Zar Points or a 4 or 5 card minor suit with the same strength? That's the subject of the next section.

Zar Points Opening 1 NT

The most important message you send to your partner when you open 1 NT is "Partner, I do not have a 4-card Major, so don't even bother asking me about it". And certainly the strength is 26-30 Zar Points.

In other words 1NT means a 26-30 Zar Points with maximum 3 cards in any of the Majors.

What happens if you have say 13 HCP and 4333 and can NOT come up with 26 points? Well – you simply say "Pass". Passing is a bid legal in bridge – something a lot of players have hard time understanding, don't know why.

If you don't have 26 Zar Points, you PASS on the first round.

And to put your mind at ease, let's see what are the chances for having a **12+ HCP** hand which can **NOT "collect" the 26-points** minimum.

Out of the 1,000,000 hands there are 8,104 such hands, or **0.8**%.

But wait – the **important** message is not that! The important message is that you are going to actually **win** most of those hands since you are going to be the only guys with a positive record on the board (the other tables will all have scored some "rounded" numbers like -100 or -200). Check it out on the next tournament – you may be pleasantly surprised.

The actual probability of HAVING a Zar Points 1NT opener is reflected here:

ZAR NT specifications:

No 6+ card minor		
No 4+ card major		
No 5-5 card minors	11507	**4.6%**

ZAR NT specifications IF you decide to **play 5-card major**:

No 6+ card minor		
No 5-5 card minors		
No 4450 distribution		
No 4405 distribution		
One or both 4 card Majors	30282	**12.1%**

Please note, that the implications of deciding to play 5-card Major are bigger than having the 1NT opening extended as indicated above. NOT only you would destroy the responses to 1NT and the entire beauty of the 1NT opening (knowing that the 1NT opener has 7, 8 or 9 cards in the minors and 4, 5, or 6 cards in the Majors) but you will have some problems with hands containing voids as well. That's why I mentioned that Zar Points cannot afford to play 5-card major. Think twice before going there.

How do the **Zar Points-based** **NT** contracts **relate to the "normal" HCP** standards for NT contracts?

Here is how:

NT Spread - East West (Raw Count)

HCP	52	57	62	67	72	
12	0	0	0	0	0	***0***
13	0	0	0	0	0	***0***
14	0	0	0	0	0	***0***
15	1	0	0	0	0	***1***
16	17	0	0	0	0	***17***
17	73	0	0	0	0	***73***
18	226	2	0	0	0	***228***
19	679	6	0	0	0	***685***
20	1489	52	0	0	0	***1541***
21	2870	160	2	0	0	***3032***
22	3975	408	9	0	0	***4392***
23	4793	884	14	0	0	***5691***
24	4866	1519	63	0	0	***6448***
25	3710	2044	160	4	0	***5918***
26	2406	2344	280	5	0	***5035***
27	1268	2230	512	26	1	***4037***
28	463	1670	666	44	1	***2844***
29	153	1124	748	78	3	***2106***
30	31	544	607	103	2	***1287***
31	4	229	474	126	8	***841***
32	0	58	282	124	7	***471***
33	0	13	133	93	13	***252***
34	0	5	49	49	14	***117***
35	0	0	17	37	10	***64***
36	0	0	3	28	6	***37***
37	0	0	0	1	6	***7***
38	0	0	0	2	0	***2***
39	0	0	0	0	0	***0***
40	0	0	0	0	0	***0***
	27024	13292	4019	720	71	***45126***

NT Spread - East West (Percent)

HCP	52	57	62	67	72	
12	0.0%	0.0%	0.0%	0.0%	0.0%	***0.0%***
13	0.0%	0.0%	0.0%	0.0%	0.0%	***0.0%***
14	0.0%	0.0%	0.0%	0.0%	0.0%	***0.0%***
15	0.0%	0.0%	0.0%	0.0%	0.0%	***0.0%***
16	0.0%	0.0%	0.0%	0.0%	0.0%	***0.0%***
17	0.0%	0.0%	0.0%	0.0%	0.0%	***0.0%***
18	0.1%	0.0%	0.0%	0.0%	0.0%	***0.1%***
19	0.3%	0.0%	0.0%	0.0%	0.0%	***0.3%***
20	0.6%	0.0%	0.0%	0.0%	0.0%	***0.6%***
21	1.1%	0.1%	0.0%	0.0%	0.0%	***1.2%***
22	1.6%	0.2%	0.0%	0.0%	0.0%	***1.8%***
23	1.9%	0.4%	0.0%	0.0%	0.0%	***2.3%***
24	1.9%	0.6%	0.0%	0.0%	0.0%	***2.6%***
25	1.5%	0.8%	0.1%	0.0%	0.0%	***2.4%***
26	1.0%	0.9%	0.1%	0.0%	0.0%	***2.0%***
27	0.5%	0.9%	0.2%	0.0%	0.0%	***1.6%***
28	0.2%	0.7%	0.3%	0.0%	0.0%	***1.1%***
29	0.1%	0.4%	0.3%	0.0%	0.0%	***0.8%***
30	0.0%	0.2%	0.2%	0.0%	0.0%	***0.5%***
31	0.0%	0.1%	0.2%	0.1%	0.0%	***0.3%***
32	0.0%	0.0%	0.1%	0.0%	0.0%	***0.2%***
33	0.0%	0.0%	0.1%	0.0%	0.0%	***0.1%***
34	0.0%	0.0%	0.0%	0.0%	0.0%	***0.0%***
35	0.0%	0.0%	0.0%	0.0%	0.0%	***0.0%***
36	0.0%	0.0%	0.0%	0.0%	0.0%	***0.0%***
37	0.0%	0.0%	0.0%	0.0%	0.0%	***0.0%***
38	0.0%	0.0%	0.0%	0.0%	0.0%	***0.0%***
39	0.0%	0.0%	0.0%	0.0%	0.0%	***0.0%***
40	0.0%	0.0%	0.0%	0.0%	0.0%	***0.0%***
	10.8%	***5.3%***	***1.6%***	***0.3%***	***0.0%***	***18.1%***

What can we conclude from this table? Let's have a look at the Slam and GRAND levels first, just to get them out of the way.

First, we know already that when you do NOT have a fit (**15%** of the time), you still calculate the Zar Points but then **deduct** the Zar Misfit points, which for balanced hands average 5 Misfit Points (when you are in the **40%** of having a SUPERfit, you actually **add** the Zar Misfit points if they are a number greater than the Zar Superfit Points, while when you simply are in the **46%** of having a fit of exactly 8 cards, you **do not bother** with the Zar Misfit points)

So from the tables above we see that in the GRAND zone (7NT) we average **34** HCP for the 72 – 5 = **67** Zar Points, while for the Slam zone in NT (6NT) we average **31-32** HCP for the 67 – 5 = **62** Zar Points (and that's deducting the average of 5 Zar Misfit Points while as we know 2 completely balanced hands will only deduct **2** Misfit Points).

So in the Slam and GRAND zone everything is "normal" from "normality" perspective.

In the 3NT zone, where the "common" rule is that you need at least **25** HCP, we see that the **52-55** Zar Points from which we deduct the average 5 Misfit Points to get to level 3, get an average HCP load of **24-26** HCP. That's also "normal" from "normal" perspective but we want to stress once again that the 5-point average Misfit Deduction will be BIGGER if you are in a "real" misfit – this in turn will drop you down to 2NT, even to 1NT in some cases. Which in turn reminds us the "common rule" that in misfit you have to step on the brakes ASAP.

As a side effect we see how well the Zar Misfit Points adjust the play-level for you.

Here is how you act (in an easy-to-grasp table format again and rough probabilities):

When	Percent	Zar Misfit Points
No 8+-card fit	15 %	Subtract
8-card fit	**50%**	**Disregard**
9+card superfit	35 %	Add

So let's get back to the bidding itself.

What happens with **Stayman** for example???

Well – I guess you actually mean to ask "What happens with the 2C-response to the 1 NT opening?" We will have a look at that when we come to the "Responding" section.

The interesting thing is that you actually **CAN consider** that the "2C-response" is **Stayman** because 100% of the time the response to 2C will be 2D (as if I say no 4+ Major) – and 2C is a relay to 2D anyway.

The more important thing to explicitly mention though is that the 1 NT opening can contain a 5-card Minor, even a 5-4 in the Minors as a matter of fact. This makes the pre-emptive power of the 1NT opening even STRONGER since chances are the Majors are in the opponents anyway.

How about the 4-4-4-1 hands?

You realize (again the Dirichlet Principle!) that with ANY 4-4-4-1 distribution you will have a 4-card Major. So you open 1M.

We already know that in HCP terms Weak NT opening (kind-of corresponding to the Zar Points opening of 1 NT) happens **10%** of the cases vs. **5%** for the 15-17 NT opening – practically the same **5%** probability as opening 1NT in Zar Points.

The pre-emptive power of the Zar Points 1NT (barring the 1M opening from the next opponents) though is obvious.

Thus we have touched upon the **3 Main Pre-emptive** (and in the SAME time **Constructive!**) opening weapons:

1) The **4-card Major** (with 26-30);

2) The **1 NT** Opening (with 26-30);

3) The **Higher-Level openings** with a **long suit** (with 26-30).

The fact that the 1NT opening denies 4-card Major makes ALL the responder's bids available for relays.

As we will see, despite the fact that **Zar Points Bidding is NATURAL** in general, in Game-forcing situations you have different relays to allow you to fully describe the hands on the way to the Game/ Slam / GRAND.

We will summarize three of the alternative relay systems which you may choose to utilize with the Zar Points Backbone.

What happens with the **balanced hands** with **more than 31 Zar Points**?

They go through the 1C and 1D openings.

What is actually the probability of having a Zar Points NT hand regardless of strength?

The numbers are presented below.

Zar Points NT specifications, NO restriction on strength:

No 6+ card minor;

No 4+ card major;

No 5-5 card minors;

happens 202,731 out of 1,000,000 hands, or **20.3% .**

As we will see, one of the most important things related to this approach (credited to the **dual strong opening** of 1C and 1D) is that the **direct opening of 2NT** is free for you to use.

We will see how in the section "Zar Points Openings above Level 1" - the next section of the presentation.

Zar Points Openings above Level 1

We know already that every opening in Zar Points is ... just a “normal” opening with 26+ Zar Points. The higher openings simply translate to longer suits, still with 26-30 points.

To address the question about the lengths of the suits for openings above Level 1, we have to clearly state the lengths covered by openings at Level 1 first.

Here are the possible bid-rebid combinations for the Level 1 openings:

1) open and re-bid the suit (length 5)
2) open and shift in a new suit (lengths 5-4)
3) open and jump-shift in a new suit on a forcing bid from partner (lengths 5-5)

You understand the relief coming from the presumption that jumps only show length rather then “two watermelons with a single arm”, which certainly is the case with the Strong-2C bidding systems.

So single suits up to length of 5 and two-suiters of up to 5-5 are covered with Level 1 openings (minor-two-suiters have to be handled separately due to the artificial minor-suit openings – see below).

We have experimented with a variety of opening schemes and the problem boils down to these 2 points:

1) It is very hard to mix both single-suited 7+-cards bids with any two-suiter bids;
2) By the time you touch level 3, it should be absolutely clear **exactly** which suit you hold as a 7+ cards suit, and in case of a two-suiter, which are the 2 suits **exactly**.

This ruled-out the 6-5 two-suiter opening at Level 3, despite the really delightful scheme covering the field completely – I’ll just keep it for my personal enjoyment and not even share it with you. It’s unusable in real life simply because you may drop your skin at the table in a considerable amount of cases, despite the seemingly-safe 6+ - 5+ lengths...

Before covering the bids themselves, it is worth asking some probability questions so we know what the real danger may possibly come from and how often that might happen.

The probabilities for the holding a 5-5 is as follows (relative to the 250,000 boards):

Two Suiter with 5+ 5+ and 26-30 ZP happens in 4396 hands or **1.76%.**

The 1.76% includes 6-5, 6-6, etc. With these hands you open at level 1 and **jump** in the second AFTER and IF your partner bids of course, so it is **safer** to jump with only 5-5.

Let’s have a look at the probabilities for 5+ - 6+

Two Suiter with 5+ 6+ and 26-30 ZP happens in 1250 hands or **0.5%.**

It is interesting to know WHEN you have a 5+ - 6+, what are the probabilities of your OPPONENTS having such a two-suiter also – so here they are (conditional probability):

Opponents with 5+ 6+ **when we have** 5+ 6+ 69/1250 **5.52%**

Here is the exhaustive table for all distributions:

Distribution Patterns when West has Distribution in Left Column

		---------------------- NORTH or SOUTH ----------------------------									
WEST	**%%**	**5-4**	**5-5**	**6-5**	**6-6**	**7-6**	**6**	**7**	**8**	**9**	***N/S***
5-4	61801	26446	3713	1152	58	6	10929	2976	402	38	***45720***
5-5	10138	4420	628	221	11	0	1944	659	102	9	***7994***
6-5	3376	1498	238	114	7	3	672	271	49	7	***2859***
6-6	163	70	14	9	0	1	32	12	3	0	***141***
7-6	8	6	0	0	0	0	1	0	0	0	***7***
6	51537	23005	3673	1485	87	9	9602	3095	475	38	***41469***
7	10105	4669	893	397	27	2	1907	702	109	11	***8717***
8	1183	578	114	69	4	0	217	93	14	3	***1092***
9	102	59	10	6	1	0	13	9	0	0	***98***
	138413										

Percentages

WEST	**%%**	**5-4**	**5-5**	**6-5**	**6-6**	**7-6**	**6**	**7**	**8**	**9**	***N/S***
5-4	24.7%	42.8%	6.0%	1.9%	0.1%	0.0%	17.7%	4.8%	0.7%	0.1%	***74.0%***
5-5	4.1%	43.6%	6.2%	2.2%	0.1%	0.0%	19.2%	6.5%	1.0%	0.1%	***78.9%***
6-5	1.4%	44.4%	7.0%	3.4%	0.2%	0.1%	19.9%	8.0%	1.5%	0.2%	***84.7%***
6-6	0.1%	42.9%	8.6%	5.5%	0.0%	0.6%	19.6%	7.4%	1.8%	0.0%	***86.5%***
7-6	0.0%	75.0%	0.0%	0.0%	0.0%	0.0%	12.5%	0.0%	0.0%	0.0%	***87.5%***
6	20.6%	44.6%	7.1%	2.9%	0.2%	0.0%	18.6%	6.0%	0.9%	0.1%	***80.5%***
7	4.0%	46.2%	8.8%	3.9%	0.3%	0.0%	18.9%	6.9%	1.1%	0.1%	***86.3%***
8	0.5%	48.9%	9.6%	5.8%	0.3%	0.0%	18.3%	7.9%	1.2%	0.3%	***92.3%***
9	0.0%	57.8%	9.8%	5.9%	1.0%	0.0%	12.7%	8.8%	0.0%	0.0%	***96.1%***
	55.4%										

NOTES:

1. "**%%**" column indicates number of times or **% WEST has distribution shown**
2. "%%" column percentages is based on 250,000 boards
3. The other percentages shown are based on the number in the "%%" column
4. The 6 and 7 columns do not include quantities shown in the 6-5, 6-6, or 7-6 columns

Let's discuss for a minute the "Percentages" table since it would be the one you would be interested in from "at the table" point of view. The first line says: chances for having **5-4** distribution is around **25%**.

The last number on the same first line (74%) states that **74%** of the time WHEN you have ? 5-4, the opponents have at least 5-4 or better (one of the distributions shown).

It is interesting to notice that more than **20%** of the time you have a **6-cards** suit – and **80%** of the time when you have a 6-card suit exactly, your opponents have some kind of a distributional hand, too.

So we now have an idea about how our own distribution influences the expected distributions in the opponents' hands.

The next natural question to ask is how our own distribution influences the FITS that the two partnerships have. In other words, how our own distribution changes the overall UNCONDITIONAL probabilities of having different fits that we are already aware of:

When	Percent	Zar Misfit Points
No 8+-card fit	15 %	Subtract
8-card fit	**50%**	**Disregard**
9+card superfit	35 %	Add

Naturally, these probabilities would change, CONDITIONAL to our specific distribution. For example, given that we look at our hand and see a 5-5- two-suiter or a 7-card single-suit, what are the CONDITIONAL probabilities for all the different types of fits – both in for our opponents (N-S) and for us (E-W)

We will start with the probabilities for the fits that WE have, given our (West) specific holding (reflected in the vertical first columns in the tables below):

---------------- FITS: East/West (we) Top Two Suits Distribution ----------------

West	7-7	8-6	8-7	8-8	9-6	9-7	9-8	9-9	10	11	12	13	*Total*
5-4	8852	2927	18872	7156	3784	8786	4863	681	5048	771	61	0	***61801***
5-5	1053	325	2735	1371	466	1499	1165	228	1119	161	13	3	***10138***
6-5	192	71	631	403	109	536	585	132	572	135	10	0	***3376***
6-6	7	0	22	14	1	21	41	10	39	7	1	0	***163***
7-6	0	0	0	1	0	1	2	1	2	1	0	0	***8***
6	3422	1334	9985	4675	2821	6772	4317	724	5970	1288	124	0	***41432***
7	237	174	1345	762	689	1615	1004	193	2138	654	110	1	***8922***
	13763	***4831***	***33590***	***14382***	***7870***	***19230***	***11977***	***1969***	***14888***	***3017***	***319***	***4***	***125840***
								Taking out duplicates					***122293***
								Percentage of 250000 boards					***48.9%***

------------------------------------- **FITS: Percentages** ---

	7-7	8-6	8-7	8-8	9-6	9-7	9-8	9-9	10	11	12	13	Total
5-4	14.3%	4.7%	30.5%	11.6%	6.1%	14.2%	7.9%	1.1%	8.2%	1.2%	0.1%	0.0%	***100.0%***
5-5	10.4%	3.2%	27.0%	13.5%	4.6%	14.8%	11.5%	2.2%	11.0%	1.6%	0.1%	0.0%	***100.0%***
6-5	5.7%	2.1%	18.7%	11.9%	3.2%	15.9%	17.3%	3.9%	16.9%	4.0%	0.3%	0.0%	***100.0%***
6-6	4.3%	0.0%	13.5%	8.6%	0.6%	12.9%	25.2%	6.1%	23.9%	4.3%	0.6%	0.0%	***100.0%***
7-6	0.0%	0.0%	0.0%	12.5%	0.0%	12.5%	25.0%	12.5%	25.0%	12.5%	0.0%	0.0%	***100.0%***
6	8.3%	3.2%	24.1%	11.3%	6.8%	16.3%	10.4%	1.7%	14.4%	3.1%	0.3%	0.0%	***100.0%***
7	2.7%	2.0%	15.1%	8.5%	7.7%	18.1%	11.3%	2.2%	24.0%	7.3%	1.2%	0.0%	***100.0%***

NOTES:

The totals 3376, 163 and 8 (for 6-5, 6-6, and 7-6) are also included in the 41432 and 8922 totals.

The FIT probabilities for our OPPONENTS are presented in the tables below. Some of the findings may come as surprise to you so we will briefly discuss that after presenting the tables.

------------------ **North/South Top 2 Suits Distribution** -----------------------

West	7-7	8-6	8-7	8-8	9-6	9-7	9-8	9-9	10	11	12	13	Total
5-4	8704	3075	18015	5936	4641	8821	4120	566	6428	1362	130	3	***61801***
5-5	997	381	2436	937	765	1580	904	181	1518	396	41	2	***10138***
6-5	180	83	542	314	198	501	478	120	702	218	39	1	***3376***
6-6	4	3	19	19	4	15	32	8	48	8	3	0	***163***
7-6	0	0	0	1	0	1	2	0	3	1	0	0	***8***
6	3457	1299	10325	5150	2481	6621	4444	711	5565	1223	154	2	***41432***
7	314	97	1722	1381	312	1525	1359	261	1518	385	46	2	***8922***
	13656	***4938***	***33059***	***13738***	***8401***	***19064***	***11339***	***1847***	***15782***	***3593***	***413***	***10***	***125840***
									Taking out duplicates				***122293***
									Percentage of 250000 boards				***48.9%***

------------------------------------- **Percentages** ---

	7-7	8-6	8-7	8-8	9-6	9-7	9-8	9-9	10	11	12	13	Total
5-4	14.1%	5.0%	29.2%	9.6%	7.5%	14.3%	6.7%	0.9%	10.4%	2.2%	0.2%	0.0%	***100.0%***
5-5	9.8%	3.8%	24.0%	9.2%	7.5%	15.6%	8.9%	1.8%	15.0%	3.9%	0.4%	0.0%	***100.0%***
6-5	5.3%	2.5%	16.1%	9.3%	5.9%	14.8%	14.2%	3.6%	20.8%	6.5%	1.2%	0.0%	***100.0%***
6-6	2.5%	1.8%	11.7%	11.7%	2.5%	9.2%	19.6%	4.9%	29.4%	4.9%	1.8%	0.0%	***100.0%***
7-6	0.0%	0.0%	0.0%	12.5%	0.0%	12.5%	25.0%	0.0%	37.5%	12.5%	0.0%	0.0%	***100.0%***
6	8.3%	3.1%	24.9%	12.4%	6.0%	16.0%	10.7%	1.7%	13.4%	3.0%	0.4%	0.0%	***100.0%***
7	3.5%	1.1%	19.3%	15.5%	3.5%	17.1%	15.2%	2.9%	17.0%	4.3%	0.5%	0.0%	***100.0%***

NOTES:

The totals 3376, 163 and 8 (for 6-5, 6-6, and 7-6) are also included in the 41432 and 8922 totals.

We see how **close** the numbers are for US and for THEM – this gets us back to "Zar Points Hand Evaluation" where we proved the following theorem:

"This leads us to **The Superfits Theorem:**

IF: **Opponents have N cards in 2 suits**

THEN: **We have the SAME amount of N cards**

in THE OTHER 2 suits.

If they have 16 cards in the minor suits, we have 16 cards in the major suits.
If they have 18 cards in the major suits, we have 18 cards in the minor suits. "

So why are the numbers slightly different then? Because we only consider CONDITIONAL probability, given that we have EXACTLY 5-5, or 6-5, etc. distribution. You probably have noticed the special grey background of some of the cells in the 5-5 and 6-card suits in the percentage table – this is because we will use these numbers for a very subtle decision regarding the minor-suits openings below.

You see how the probabilities of having a superfit grow almost straight-proportionally to the lengths of the suits of our two-suiter – if we round the % we can see that the probability for having a **10-card** fit grows **by 5%** for every card we add to our two-suiter:

- for 5-4 it is 10%,
- for 5-5 it is 15%,
- for 6-5 it is 20%,
- for 6-6 it is 30%,
- for 7-6 it is 35%.

In the same time the prospects of the opponents lag behind by an approximate amount of 20% (compare to the same holding of yours).

Now that we are comfortable with the numbers, let's focus on the GOAL of revealing the lengths of the 5+ - 6+ suits. The goal naturally will be oriented towards revealing the lengths of the MAJOR suit so we can cleanly land the **4M Games.**

We will know **which** and exactly **how long** a major your partner has, and if he has both, which one has 6 cards, which one has 5 cards – enabling him to make informed decision rather than letting him shoot in the dark, demonstrating "expert judgment" (in cases he guesses correctly).

The **Level 3** openings are straightforward **7+-card** suits, 26-30 Zar Points, as mentioned in the beginning of this section. If you open at Level 3, you have 7 cards in the suit (no transfers) and 26 – 30 Zar Points. Simple.

A hand with a 7-card suit, headed by A and K and nothing in the side suits, would have an expected value of 7-3-2-1 for 16 and 10 from HCP+CRTL for 26 Zar Points! A hand with 8-2-2-1 will have 27 Zar Points and so **both hands** would open!

In **that sense**, there is no pre-emptive opening in Zar Points at all. The mere fact that you open means you have at least 26 Zar Points, period. The only exception is 25 Zar Points with 4+ cards in Spades, due to the upgrade point for holding the spade suit.

You probably would be concerned with the "pure" pre-empts at level 2 and 3 with 6 and 7 card suits correspondingly and standard 7-10 HCP, which **can not "collect" 26** Zar Points BUT would open pre-emptive in "real bridge", so to say. We ran the numbers again to find out exactly the chances for those types of hands.

Pre-empt at level 2:

Less that 26 ZP (25 & 4+ spades)		
6 card Major exactly		
7-10 HCP	3400	**1.4%**

Pre-empt at level 3:

Less than 26 ZP (25 & 4+ spades)		
7 card any suit		
6-10 HCP	1177	**0.5%**

This is the trade-off with the convenience to know that your partner have 26+ Zar Points and make an informed decision. You have to decide for yourself how comfortable you are in one situation or another. And here is the probabilities view on the other higher-level opening with a two-suiter:

Two Suiter in Any Suit

Two Suiter with 5+ 5+		
26-30 ZP	4396	**1.76%**

The openings of **2NT** all-the-way **down to the 2C** opening are the ones we will use to cover the distribution-rich hands that do not have a 7-card suit, but have at least a 6-5 two-suiter.

The openings of 2C and 2D are transfers to 2D and 2H correspondingly. Here is how they work.

2C – transfer to 2D. Either a **6-5** two-suiter with **6 cards** in Hearts, OR **6-card** Heart uni-suit. In ANY case it **guarantees 6 cards in Hearts** so the opponents can pre-empt as much as they want – the vital information regarding the Major suit holding is transmitted. Re-bid of 2H on the 2D transfer establishes the 6-card uni-suit case.

2D – transfer to 2H. Either a **6-5** two-suiter with **6 cards** in Spades, OR **6-card** Spade uni-suit. In ANY case it **guarantees 6 cards in Spades** so the opponents can pre-empt as much as they want – the vital information regarding the Major suit holding is transmitted. Re-bid of 2S on the 2H transfer establishes the 6-card uni-suit case.

A KEY feature of this scheme is that it transmits the EXACT length of the suits BELOW level 3. This is especially important for the cases of two-suiter in the MAJORS.

If you have 6 Hearts with 5 Spades, you open 2C (indicating that you hold 6 cards in Hearts no matter what) and re-bid 2S on the 2D transfer acceptance.

If you have 5 Hearts and 6 Spades, you open 2D (indicating that you hold 6 cards in Spades no matter what) and re-bid 2NT.

If your second suit is a 5-card minor, in either case you simply bid you minor on the next turn.

The next 2 bids take care of the cases where you have a 5-card MAJOR with a 6-card minor. Here they go:

2H – 5-cards in Hearts with 6-card minor.

2S – 5-cards in Spades with 6-card minor.

A special word of caution here since you may think that if you have 3-cards in the major you have a FIT and it's OK to leave the contract there even if you have 3-cards in the minors. With 6-5 and ONLY 5 trumps, the two-suiter-hand is DIRECTLY exposed to trump shortening from the very lead and with only 8 trumps the hand with the 6-card minor suit will most probably be cut-off the eventually-established minor side-suit. The reason for this is that with 26-30 Zar Points and 6-5, MOST of the points come from distribution and the hand with 6-5 will not have enough **entries** to the established minor suit. So – to accept a contract in the Major suit you must provide a SUPERFIT - you must have 4+ cards in the Major yourself. When you think about it you'll understand what I am talking about.

So far we took care of any 6-5 combination that contains any Major suit (that's 5 out of the 6 possible combinations) and the only thing that remains is to take care of the minors – those are the cases where you hold a 6-card minor or a 5+ - 5+ minor two-suiter.

The opening bid we have available from the ones above 1 NT is the 2NT opening.

To find the other needed opening we have to see what is covered by the strong 1C and 1D openings first.

ALL the BALANCED-hand openings (besides the direct opening of 1NT which is 26-30) go through 1C opening:

- 1C opening + 1NT re-bid is 30-35 Zar Points, balanced (in Zar Points terms) hand;
- 1C opening + 2NT re-bid is 36+ Zar Points, balanced (in Zar Points terms) hand.

The direct implication of this is that when you open **1D**, you cannot have a BALANCED hand. Thus bid sequences of:

- 1D opening + 1NT re-bid
- 1D opening + 2NT re-bid

are free since after opening 1D you cannot have a balanced hand to begin with.

So we have to make an informed choice of which type of hand (between 6-card uni-suit and 5+-5+ two-suiter) to put where (between direct 2NT opening and 1D–?–1NT (2NT)).

Here we will use the "grey" area of the FITS-probability table in the beginning of this section. When we add-up the numbers in the gray area, we find the chances of NOT having a SUPERFIT in the 2 cases of interest. You see how close the numbers are – basically in both cases you have **around 92%** chance of having a fit!

So we have to **fine-tune the case** and look at the chances of:

- Having a SUPERFIT;
- Having a DOUBLEFIT.

So here they go:

Study to determine best use of <u>2NT</u> and <u>1D – X – 1NT (2NT)</u>
199448 = Number of Hands with 26-30 Zar Points

West has	Count	Double Fit(8+8+)		Super Fit(9+)	
6 suit minor	18827	5115	**27**.2%	9795	**52**.0%
5+5+ minors	2092	734	**35**.1%	1089	**52**.1%

It is amazing to note that in BOTH cases the chances of:

- Having a fit are **92%;**
-
- Having a superfit are **52%**.

The difference comes in the chances of having a DOUBLEFIT – 35% vs. 27%. So we will put the two-suiter into the direct opening of 2NT and the uni-minor-suit hand in the 1D opening + 1NT re-bid.

Let's try to present the cases in an easy-to-read table format:

Holding	Bid	Holding	Bid
6 CL, 5 DI	2NT	5 CL, 6 DI	2NT
6 CL, 5 HE	2♥	5 CL, 6 HE	2♣ - 2♦ - 3♣
6 CL, 5 SP	2♠	5 CL, 6 SP	2♦ - 2♥ - 3♣
6 DI, 5 HE	2♥	5 DI, 6 HE	2♣ - 2♦ - 3♦
6 DI, 5 SP	2♠	5 DI, 6 SP	2♦ - 2♥ - 3♦
6 HE, 5 SP	2♣ - 2♦ - 2♠	5 HE, 6 SP	2♦ - 2♥ - 3♥

So we are now ready to present the opening bids above 1 NT.

2♣	26 – 30 Zar Points, 6-card ♥ suit or 6 hearts and 5 other
2♦	26 – 30 Zar Points, 6-card ♠ suit or 6 spades and 5 other
2♥	26 – 30 Zar Points, 5-card ♥ suit and 6 cards in any minor
2♠	26 – 30 Zar Points, 5-card ♠ suit and 6 cards in any minor
2NT	26 – 30, at least 5-5 m-m
3♣	26 – 30 Zar Points, 7-card club suit
3♦	26 – 30 Zar Points, 7-card diamond suit
3♥	26 – 30 Zar Points, 7-card heart suit
3♠	26 – 30 Zar Points, 7-card spade suit
3NT	3NT and above are 8+card openings with suits not-encouraging 3NT

Since you might be complaining that opening with **5+ - 5+** and 26-30 Zar Points is kind-of-a risky business, let's see how risky it is.

You probably play or are at least aware of both the Michaels Cue-bids and Unusual-NT conventions for overcalling, if not with Ghestem and Copenhagen (called Danish in Europe) – all of them can actually be made with LESS than 26 Zar Points. Let's stick for the sake of this conversation with a HCP requirement of 10 HCP for ANY of the Michaels, Unusual-NT, Ghestem, Copenhagen, and Zar Points.

When you overcall with 10 HCP and the RHO for his opening has AT LEAST 12 HCP, then the "unknown hands" of LHO and your partner have TOGETHER a MAX of 18 HCP. And when you take into account that the expectation for ANY NORMAL opening in Zar Points is 12 HCP while that for Goren-style-opening is 14 HCP, then we come to the expected HCP-value of the 2 unknown hands of 40-12-14 = **14 HCP total** for both or **7 HCP** for each hand**!**

When **YOU open** with 26+ Zar Points and expected 12 HCP, the rest of the THREE unknown hands have an average of 28/3 = **9 HCP**.

Now you see the picture:

- in Michaels/Unusual-NT Opponents have expected strength of 14 + 7 = **21 HCP.**
-
- in Zar Points opening Opponents have an expected strength of 9 + 9 = **18 HCP**.

Not only that, but in both Michaels and Unusual-NT the **partner** of the OPENER actually already **KNOWS** that at the other side of the table there are at least 12 HCP, all-the-way to 20 HCP! In contrast, when YOU open, neither of the opponents know anything about his partner but the fact that he holds 13 cards (since you are the only one that has bid so far). So from **both** perspectives Zar Points openings with a 2-suiter hand are much **safer** AND have a **stronger pre-emptive effect** on the opponents.

And another thing which we will discuss later – this scheme allows for clean negative inference during the bidding – that fact that your partner **failed to open** via some of the higher-level openings already tells a lot!

If you have played with the Zar Bid Machine on the WWW.ZarPoints.COM website, you already have a feel about the dependencies between HCP and CONTROLS – the machine controls you so you cannot make a mistake here.

Let's have a look at the table below which presents the MAX and MIN number of controls for different HCP amounts:

HCP	**CTRL-min**	**CTRL-max**	**HCP**	**CTRL-min**	**CTRL-max**
3	0	1	13	1	6
4	0	2	14	1	6
5	0	2	15	1	7
6	0	2	16	2	8
7	0	3	17	2	8
8	0	4	18	2	8
9	0	4	19	3	9
10	0	4	20	3	9
11	0	5	21	3	9
12	0	6	22	4	10

In our case we are interested in Zar Points when you have 6-6 or 8+ suit – either way you **expect 18** Zar Points from distribution, leaving **8-12** for HCP+CTRL to fall in the 26-30 Zar Points interval for the opening, right?

So now we can see the span of the relatively "innocent" holding or 26 to 31 Zar Points in terms of plain HCP (with **18** coming from distribution) - you simply make the 26-18 = **8** presented as MAX CRTL and MIN HCP, while the 30-18 = **12** presented as MIN CTRL and MAX HCP. So we end up with the range of **6HCP to 12 HCP** or a span of **6 HCP.**

You can actually see the HCP span for the different Zar Points intervals from the tables of Zar Points distributions on page 19. It reflects the spans for ALL the intervals. Here are the intervals in HCP for the three different Bidding Layers:

Zar Points interval	Min HCP	Max HCP	Span
26-30	3	19	**16** HCP
31-35	7	22	**15** HCP
36+	11	30	**19** HCP

This **vast** span in terms of HCP probably comes as a surprise to you – it only reflects how **inadequate** the HCP are in terms of reflecting **your playing power**– that's why you have to come up with **TONS of adjustments** tailored to specific hands, rather than having something simple that "somehow" reflects "all-in-one".

This span also may come as a surprise on the background that Zar Points are 2 times lighter than Milton or Goren Points (based on the **52** against **26** points necessary to make a Game).

Therefore you may think of Zar Points reflecting the power within 5:2 = **2 ½** HCP while the interval spans actually through at least **15 HCP** interval – it all comes from comparing apples to oranges.

Here is the corresponding table for BALANCED hands spread of HCP and CTRL:

NO TRUMP STATISTICS FOR OPENING HANDS

```
                                   ---- HCP -----     -- CONTROLS --
Zar Points       Quantity            Low     High       Low     High
----------     ------------        -----   ------     -----   ------
 26 - 30   -   38351   5.3%         11       19         2        7
 31 - 35   -    9361   1.3%         14       21         3        8
 36+       -    3124   0.4%         17       30         5       11
               ------------
               50836   7.1%
```

So we have covered virtually all opening bids, allowing us to build a simple table as a **reference** to the **opening bids**.

Zar Points Bidding Backbone Openings

BID	**DESCRIPTION**
1♣	36+ Zar Points, ANY distribution, or 31-35 balanced
1♦	31 – 35 Zar Points, ANY distribution, or 26-30 with 6-card minor
1♥	26 – 30 Zar Points, 4+ cards in ♥, may have 4 cards in ♠
1♠	26 – 30 Zar Points, 4+ cards in ♠, may have 4 cards in ♥ (and 5♠)
1NT	26 – 30 Zar Points, no 6-card suit, no 4-card Major, no 5-5 in minors
2♣	26 – 30 Zar Points, 6-card ♥ suit or 6 ♥ and 5 cards in another suit
2♦	26 – 30 Zar Points, 6-card ♠ suit or 6 ♠ and 5 cards in another suit
2♥	26 – 30 Zar Points, 5-card ♥ suit and 6 cards in a minor
2♠	26 – 30 Zar Points, 5-card ♠ suit and 6 cards in a minor
2NT	26 – 30, at least 5-5 m-m
3♣	26 – 30 Zar Points, 7-card club suit
3♦	26 – 30 Zar Points, 7-card diamond suit
3♥	26 – 30 Zar Points, 7-card heart suit
3♠	26 – 30 Zar Points, 7-card spade suit
3NT	3NT and above are 8+card openings with suits not-encouraging 3NT

Zar Points Overcalls

Hey, why overcalls when we have only mentioned the Opening Bids so far?

Why here?

First, a **NOTE** of caution**:** Overcalling is **NOT part of any system** in general. So you can very well just use the overcalling style you use NOW, **adjusting** it to the Zar Points values. People with totally **different "Bidding Systems"** may very well play the **same overcalling** schemas, as I am sure you have seen many times.

The reason we will have a look at the overcalls at this point is 1) to finish the "inventory" of the main possible scenarios in Bridge in terms of probabilities, and 2) to stress the fact that IF you choose the Zar Points style of overcalling, they pretty much match the **opening.**

Remember that Zar Points have aggressive openings anyway, so a "normal" overcall is basically an opening hand in Zar Points. You would **lose** some of the overcalls with a 5+ suit headed by a KQJ and nothing aside, for example (if you cannot reach the magic number of 26) or you could **lower the limit for Level 1** overcall. The other side of the coin is that your partner will know that you have a Zar Points Opening and can compete adequately.

So let's have a look at the numbers after the Right-Hand-Side opponent has opened. We will consider a "normal" Goren opening, meaning the opener has 13+ Goren Points. Under that restriction, here are the numbers:

```
============================  ZAR OVERCALL ==============================

RHO opens with 13+ HCP (Goren) =    246742 or  98.7%
Number of boards passed out    =      3258 or   1.3%
Overcalling hands have 26+ ZP  =    116459 or  47.2% of RHO openers
```

RAW COUNT Overcall Range	------------ Overcall Responder's Range 10-	------------ 11-15	 16-20	 21-25	 26-30	 31+	 Total
26 - 30	529	7482	21149	23673	7036	1291	61160
31 - 35	375	4647	9871	7923	1793	158	24767
36 - 40	145	2308	5016	3153	292	19	10933
41 - 45	24	373	3554	5439	433	1	9824
46 - 50	3	17	679	5537	1094	0	7330
51 - 55	0	0	38	1259	882	0	2179
56 - 60	0	0	5	101	160	0	266
	1076	14827	40312	47085	11690	1469	116459

PERCENTAGE'S Overcall Range	10-	11-15	16-20	21-25	26-30	31+	Total
26 - 30	0.2	6.4	18.2	20.3	6.0	1.1	52.5
31 - 35	0.2	4.0	8.5	6.8	1.5	0.1	21.3
36 - 40	0.1	2.0	4.3	2.7	0.3	0.0	9.4
41 - 45	0.0	0.3	3.1	4.7	0.4	0.0	8.4
46 - 50	0.0	0.0	0.6	4.8	0.9	0.0	6.3
51 - 55	0.0	0.0	0.0	1.1	0.8	0.0	1.9
56 - 60	0.0	0.0	0.0	0.1	0.1	0.0	0.2
	0.9	12.7	34.6	40.4	10.0	1.3	100.0

(Columns 10- through 31+: --------- Overcall Responder's Range --------)

You see that the percentage of overcalling is again **47%** like the percentage of opening. So what are the chances of gathering the strength for Game/Slam/GRAND?

Overcall Range	Game 52+		Small Slam 62+		Grand Slam 67+		Totals
26 - 30	19279	16.6	1083	0.9	252	0.2	17.7
31 - 35	13990	12.0	1633	1.4	401	0.3	13.8
36 - 40	7433	6.4	1702	1.5	477	0.4	8.3
41 - 45	6295	5.4	933	0.8	303	0.3	6.5
46 - 50	4083	3.5	489	0.4	145	0.1	4.1
51 - 55	1308	1.1	201	0.2	75	0.1	1.4
56 - 60	170	0.1	39	0.0	30	0.0	0.2
	52558	45.1	6080	5.2	1683	1.4	51.8

NOTE that these percentages are **AFTER** the fact that overcaller ALREADY has 26+ Zar Points.

Here is how these numbers look **IF** you overcall with **Milton** Points:

========================= **MILTON** OVERCALL ============================

```
RHO opens with 13+ HCP (Goren)    =    246742 or  98.7%
Number of boards passed out       =      3258 or   1.3%
Overcalling with 10+ HCP (Milton) =    112951 or  45.8% of RHO openers
```

RAW COUNT Overcall Range	5-	6-9	10-12	13-15	16-18	19-21	22+	Total
10 - 11	11688	26502	9935	1408	199	8	0	49740
12 - 14	14618	22255	5866	579	29	0	0	43347
15 - 17	7747	7032	1128	44	0	0	0	15951
18 - 20	2325	1118	56	0	0	0	0	3499
21 - 23	323	68	0	0	0	0	0	391
24 - 26	23	0	0	0	0	0	0	23
27 - 29	0	0	0	0	0	0	0	0
	36724	56975	16985	2031	228	8	0	112951

(Columns 5- through 22+: ------------- Overcall Responder's Range -------------)

PERCENTAGE'S	------------ Overcall Responder's Range -------------							
Overcall Range	5-	6-9	10-12	13-15	16-18	19-21	22+	Total
10 - 11	1.2	23.5	8.8	1.2	0.2	0.0	0.0	44.0
12 - 14	1.5	19.7	5.2	0.5	0.0	0.0	0.0	38.4
15 - 17	0.8	6.2	1.0	0.0	0.0	0.0	0.0	14.1
18 - 20	0.2	1.0	0.0	0.0	0.0	0.0	0.0	3.1
21 - 23	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.3
24 - 26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27 - 29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	32.5	50.4	15.0	1.8	0.2	0.0	0.0	100.0

And the corresponding Game/Slam/GRAND prospects:

Overcall Range	Game 24+		Small Slam 32+		Grand Slam 36+		Total
10 - 11	1209	1.1	0	0.0	0	0.0	1.1
12 - 14	2928	2.6	0	0.0	0	0.0	2.6
15 - 17	3519	3.1	0	0.0	0	0.0	3.1
18 - 20	1501	1.3	0	0.0	0	0.0	1.3
21 - 23	293	0.3	0	0.0	0	0.0	0.3
24 - 26	23	0.0	0	0.0	0	0.0	0.0
27 - 29	0	0.0	0	0.0	0	0.0	0.0
	9473	8.4	0	0.0	0	0.0	8.4

Finally, let's have a look at the numbers when you play Goren Points:

============================ **GOREN** OVERCALL ==============================

```
RHO opens with 13+ HCP(Goren)    =    246742 or  98.7%
Number of boards passed out      =      3258 or   1.3%
Overcalling with 11+ HCP (Goren) =    129839 or  52.6% of RHO openers
```

RAW COUNT	------------- Overcall Responder's Range -------------							
Overcall Range	5-	6-9	10-12	13-15	16-18	19-21	22+	Total
11 - 12	5668	21592	21623	3248	1015	150	7	53303
13 - 15	7653	22070	15817	2320	496	47	1	48404
16 - 18	5192	10584	5270	512	45	0	0	21603
19 - 21	2076	2756	808	39	2	0	0	5681
22 - 24	399	333	59	0	0	0	0	791
25 - 27	38	17	1	0	0	0	0	56
28 - 30	1	0	0	0	0	0	0	1
31 - 33	0	0	0	0	0	0	0	0
	21027	57352	43578	6119	1558	197	8	129839

PERCENTAGE'S	------------	Overcall	Responder's	Range	------------			
Overcall Range	5-	6-9	10-12	13-15	16-18	19-21	22+	Total
11 - 12	0.6	16.6	16.7	2.5	0.8	0.1	0.0	41.1
13 - 15	0.8	17.0	12.2	1.8	0.4	0.0	0.0	37.3
16 - 18	0.5	8.2	4.1	0.4	0.0	0.0	0.0	16.6
19 - 21	0.2	2.1	0.6	0.0	0.0	0.0	0.0	4.4
22 - 24	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.6
25 - 27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28 - 30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31 - 33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	16.2	44.2	33.6	4.7	1.2	0.2	0.0	100.0

And the prospects for Game/Slam/GRAND:

Overcall Range	Game 26+		Small Slam 32+		Grand Slam 36+		Total
10 - 11	2444	1.9	36	0.0	0	0.0	1.9
13 - 15	6506	5.0	90	0.1	0	0.0	5.1
16 - 18	7597	5.9	117	0.1	1	0.0	5.9
19 - 21	3254	2.5	118	0.1	1	0.0	2.6
22 - 24	575	0.4	90	0.1	0	0.0	0.5
25 - 27	43	0.0	12	0.0	1	0.0	0.0
28 - 30	1	0.0	0	0.0	0	0.0	0.0
31 - 33	0	0.0	0	0.0	0	0.0	0.0
	20420	15.7	463	0.4	3	0.0	16.1

Now you can make an INFORMED judgment regarding the overcalling potentials.

So if you decide to steer your overcalling towards Zar Points (rather than sticking to your current guns as mentioned in the beginning of this section) the main rule to follow in Zar Points Overcalling is that an overcall is equal **in power** to the opening – the responder acts as if the over-caller has opened (on the lower end of the scale). This doesn't mean that you are expected to make the **same BIDS** as if you are opening (like overcalling 4-card major for example), but to use Zar Points as evaluation of the power of the hand needed to make an overcall. See the NOTES below.

Since at the time of our overcall the opponents have already started reducing the bidding space, our direct overcall spreads within the **26-35** Zar Points interval (rather than 26-30), while the "double + new suit" starts at **36+**.

Before we get to the responder in the Zar Points Bidding Backbone, we will have a look at the probability Tables for Responding after Interference. They are presented in the next section.

Zar Points after Interference

The last major "type" of bidding situations to cover is when partner opens (26+ Zar Points) and the Right-Hand-Side opponent interferes.

The first question is how we judge the strength of the RHO who makes the interference. The problem primarily stems from the fact that we want a GENERAL measure regardless of the type of interference – it is one thing the RHO to make a 1H / 1S overcall, it is another matter if he overcalls 1 NT, it is still another matter if overcalls 2C / 2D, and it is yet another matter if he pre-empts on level 2, or level 3, etc.

The other problems comes from the fact that you know neither the style of the opponents nor the way they judge their hands, that is you don't know what evaluation and bidding system they use.

So after heated debates and different experiments what we decided is that we will measure the overcall in Goren Points and we will consider that the guy has either 12+ HCP (for an interference with a take-out Double for example) or 9+ HCP and ANY 5+ card suit (for "normal" overcall).

We will start with the numbers for **Zar Points opening** and **Goren interference.**

========================== ZAR INTERFERENCE ============================

Opening with 26+ Zar Points = 248289 or 99.3% of the 250000 boards
Number of boards passed out = 1711 or 0.7%

Hands w/ 25 ZP & 4+ Spades = 24916 or 2.5% of the total hands
Number of Interferences = 118895 or 47.9% of hands opened

To INTERFER opponent must have 12+ HCP or 9+ HCP with a 5+card suit.

	------------ **Interference** Range (Goren Points) -----------									
Opener's Range	9-11		12-14		15-17		18-20		Total	
26 - 30	25579	10.3	30395	12.2	13786	5.6	4394	1.8	74154	29.9
31 - 35	14937	6.0	13061	5.3	4296	1.7	858	0.3	33152	13.4
36 - 40	5711	2.3	3541	1.4	774	0.3	105	0.0	10131	4.1
41 - 45	934	0.4	401	0.2	54	0.0	5	0.0	1394	0.6
46 - 50	47	0.0	15	0.0	1	0.0	0	0.0	63	0.0
51 - 55	1	0.0	0	0.0	0	0.0	0	0.0	1	0.0
56 - 60	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	47209	19.0	47413	19.1	18911	7.6	5362	2.2	118895	47.9

RAW COUNT	Responder's Range						
Opener's Range	10-	11-15	16-20	21-25	26-30	31+	Total
26 - 30	444	7497	29091	46541	31456	19016	134045
31 - 35	371	6312	20989	28125	13940	5837	75574
36 - 40	267	3752	10628	11255	4201	1296	31399
41 - 45	88	1129	2617	2080	544	115	6573
46 - 50	15	165	285	179	32	7	683
51 - 55	0	5	5	5	0	0	15
56 - 60	0	0	0	0	0	0	0
	1185	18860	63615	88185	50173	26271	248289

PERCENTAGE'S	Responder's Range						
Opener's Range	10-	11-15	16-20	21-25	26-30	31+	Total
26 - 30	0.18	3.0	11.7	18.7	12.7	7.7	54.0
31 - 35	0.15	2.5	8.5	11.3	5.6	2.4	30.4
36 - 40	0.11	1.5	4.3	4.5	1.7	0.5	12.6
41 - 45	0.04	0.5	1.1	0.8	0.2	0.0	2.6
46 - 50	0.01	0.1	0.1	0.1	0.0	0.0	0.3
51 - 55	0.00	0.0	0.0	0.0	0.0	0.0	0.0
56 - 60	0.00	0.0	0.0	0.0	0.0	0.0	0.0
	0.5	7.6	25.6	35.5	20.2	10.6	100.0

The same type of number over the same set of hands for **Milton** Bidding looks like that:

```
============================ MILTON INTERFERENCE ========================

  Opening with 12+ HCP (Milton) =    241598 or  96.6% of the 250000 boards
  Number of boards passed out   =      8402 or   3.4%
  Number of Interferences       =    104538 or  43.3% of hands opened

  To INTERFER opponent must have 12+ HCP or 9+ HCP with a 5+ card suit.
```

	Interference Range									
Opener's Range	9-11		12-14		15-17		18-20		Total	
12 - 14	30085	12.5	25230	10.4	9683	4.0	2284	0.9	67282	27.8
15 - 17	15930	6.6	9730	4.0	2569	1.1	397	0.2	28626	11.8
18 - 20	5057	2.1	2057	0.9	389	0.2	29	0.0	7532	3.1
21 - 23	772	0.3	234	0.1	21	0.0	0	0.0	1027	0.4
24 - 26	59	0.0	10	0.0	0	0.0	0	0.0	69	0.0
27 - 29	2	0.0	0	0.0	0	0.0	0	0.0	2	0.0
30 - 32	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
33 - 35	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	51905	21.5	37261	15.4	12662	5.2	2710	1.1	104538	43.3

RAW COUNT Opener's Range	Responder's Range 5-	6-9	10-12	13-15	16-18	19-21	22+	Total
12 - 14	18693	54579	39504	13301	4102	764	47	130990
15 - 17	15789	34757	18579	4464	1002	91	5	74687
18 - 20	8744	13450	5112	841	134	4	0	28285
21 - 23	2818	2970	728	85	3	0	0	6604
24 - 26	523	394	45	2	0	0	0	964
27 - 29	41	23	1	0	0	0	0	65
30 - 32	3	0	0	0	0	0	0	3
33 - 35	0	0	0	0	0	0	0	0
	46611	106173	63969	18693	5241	859	52	241598

If both partners have an opening hand, then both are counted above.

PERCENTAGE'S Opener's Range	Responder's Range 5-	6-9	10-12	13-15	16-18	19-21	22+	Total
12 - 14	7.7	22.6	16.4	5.5	1.7	0.3	0.0	54.2
15 - 17	6.5	14.4	7.7	1.8	0.4	0.0	0.0	30.9
18 - 20	3.6	5.6	2.1	0.3	0.1	0.0	0.0	11.7
21 - 23	1.2	1.2	0.3	0.0	0.0	0.0	0.0	2.7
24 - 26	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.4
27 - 29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30 - 32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
33 - 35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	19.3	43.9	26.5	7.7	2.2	0.4	0.0	100.0

And last, the same for the **Goren** type of bidding:

```
============================ GOREN INTERFERENCE ========================
   Opening with 13+ (Goren)    =    246742 or  98.7% of the 250000 boards
   Number of boards passed out =      3258 or   1.3%
   Number of Interferences     =    112955 or  45.8% of hands opened
   To INTERFER opponent must have 12+ HCP(Milton) or 9+ with a 5+ card suit.
```

Opener's Range	Interference Range 9-11		12-14		15-17		18-20		Total	
13 - 15	25568	10.4	26840	10.9	11303	4.6	3147	1.3	66858	27.1
16 - 18	16362	6.6	12652	5.1	3883	1.6	684	0.3	33581	13.6
19 - 21	6414	2.6	3348	1.4	709	0.3	81	0.0	10552	4.3
22 - 24	1275	0.5	485	0.2	55	0.0	1	0.0	1816	0.7
25 - 27	119	0.0	22	0.0	1	0.0	0	0.0	142	0.1
28 - 30	6	0.0	0	0.0	0	0.0	0	0.0	6	0.0
31 - 33	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
34 - 36	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	49744	20.2	43347	17.6	15951	6.5	3913	1.6	112955	45.8

RAW COUNT	Responder's Range							
Opener's Range	5-	6-9	10-12	13-15	16-18	19-21	22+	Total
13 - 15	8058	35285	44195	21491	10469	2900	483	122881
16 - 18	7441	27960	28616	10162	3777	751	95	78802
19 - 21	4954	14396	11028	2832	829	119	7	34165
22 - 24	1957	4322	2368	500	95	7	0	9249
25 - 27	416	764	292	42	2	0	0	1516
28 - 30	53	54	18	1	0	0	0	126
31 - 33	2	1	0	0	0	0	0	3
34 - 36	0	0	0	0	0	0	0	0
	22881	82782	86517	35028	15172	3777	585	246742

PERCENTAGE'S	Responder's Range							
Opener's Range	5-	6-9	10-12	13-15	16-18	19-21	22+	Total
13 - 15	3.3	14.3	17.9	8.7	4.2	1.2	0.2	49.8
16 - 18	3.0	11.3	11.6	4.1	1.5	0.3	0.0	31.9
19 - 21	2.0	5.8	4.5	1.1	0.3	0.0	0.0	13.8
22 - 24	0.8	1.8	1.0	0.2	0.0	0.0	0.0	3.7
25 - 27	0.2	0.3	0.1	0.0	0.0	0.0	0.0	0.6
28 - 30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
31 - 33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34 - 36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	9.3	33.6	35.1	14.2	6.1	1.5	0.2	100.0

You can use these tables and see what **your** Responding Systems covers and how you **distribute the load** of the different bids of the system **you currently play**.

So we now know the basic openings and all the probabilities for the responder with or without intervention.

Now we are ready to address the responder bids in the three basic cases of opening:

- responses after NORMAL opening (26-30 Zar Points);
- responses after MEDIUM opening 1D (31-35 Zar Points);
- responses after STRONG opening 1C (36 + Zar Points).

This is the subject of the next section.

Zar Points at Advancer position

Let's see how the picture looks like at the position of advancer – the partner of the overcaller. The decisions and weapons should match the probabilities presented below.

============================= **ZAR ADVANCER** =============================

RHO opens with 12+ HCP = 86951 or 34.8% of the 250000 boards
Overcall with 26+ Zar Points = 28807 or 33.1% of the 86951 hands
Hands w/ 25 ZP & 4+ Spades = 2100 or 7.3% of the overcalling hands

Opener Range	Advancer's Range 10-	%	11-15	%	16-20	%	21-25	%	26-30	%	31+	%	Total
26-30	188	0.1	2567	3.0	6665	7.7	6498	7.5	3601	4.1	822	0.9	23.4
31-35	105	0.0	1349	1.6	2684	3.1	1875	2.2	697	0.8	75	0.1	7.8
36-40	55	0.0	436	0.5	624	0.7	325	0.4	75	0.1	2	0.0	1.7
41-45	7	0.0	70	0.1	68	0.1	11	0.0	4	0.0	0	0.0	0.2
46-50	0	0.0	2	0.0	2	0.0	0	0.0	0	0.0	0	0.0	0.0
51-55	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0
56-60	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0
	355	0.4	4424	5.1	10043	11.6	8709	10.0	4377	5.0	899	1.0	33.1

Above percentages are based on 86951 hands.

And here are the chances for **Game / Slam / GRAND** (raw-count and percentages).

Open ZP	Major 52+	%	NoTrump 52+	%	Minor 57+	%	Slam 62+	%	Grand 67+	%	Total	
26-30	6095	7.0	4417	5.1	1002	1.2	693	0.8	133	0.2	14.2	
31-35	2450	2.8	1739	2.0	517	0.6	382	0.4	93	0.1	6.0	
36-40	561	0.6	383	0.4	115	0.1	156	0.2	67	0.1	1.5	
41-45	52	0.1	37	0.0	7	0.0	36	0.0	19	0.0	0.2	
46-50	2	0.0	0	0.0	0	0.0	0	0.0	2	0.0	0.0	
51-55	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0	
56-60	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0	
	9160	10.5	6576	7.6	1641	1.9	1267	1.5	314	0.4	21.8	*
	9160	3.7	6576	2.6	1641	0.7	1267	0.5	314	0.1	7.6	**

* - Above percentages are based on 86951 hands.
** - Above percentages are based on 250000 boards.

Totals: 18958 games + 9849 part scores = 28807 overcalling hands

Let's explicitly mention what conditions we have used to determine Game / Slam / GRAND.

Conditions for **ZAR** Games/Slams/GRANDS:

Grand Slam -	67+ ZP with fit or 72+ ZP without fit First Round Control all suits
Small Slam -	62+ ZP with fit or 67+ ZP without fit First Round Control for at least 3 suits Second Round Control for suit with no First Round Control
No Trump -	All suits stopped 52+ ZP and any 5-3 fit or 4-4 minor fit 57+ ZP without fit
Major Suit -	52+ ZP & Major suit fit
Minor suit***** -	57+ ZP & Minor suit fit

Conditions for **MILTON** Games/Slams/GRANDS:

Grand Slam -	36+ HCP First Round Control all suits
Small Slam -	32+ HCP with fit or 35+ HCP without fit First Round Control for at least 3 suits Second Round Control for suit with no First Round Control
No Trump -	All suits stopped 24+ HCP and any 5-3 or 4-4 minor fit 27+ HCP without fit
Major Suit -	24+ HCP and Major suit fit
Minor Suit***** -	27+ HCP and Minor suit fit

Conditions for **GOREN** Games/Slams/GRANDS:

Grand Slam -	36+ HCP First Round Control all suits
Small Slam -	32+ HCP with fit or 35+ HCP without fit First Round Control for at least 3 suits Second Round Control for suit with no First Round Control

No Trump -	All suits stopped 26+ HCP and any 5-3 or 4-4 minor fit 29+ HCP without fit
Major Suit -	26+ HCP and Major suit fit
Minor Suit* -	29+ HCP and Minor suit

*** Doesn't meet No Trump conditions & not more than 2 Quick Tricks in any suit.**

These conditions are used for all the tables, not only for the advancer presented above.

Zar Points Responses to the Opening Bids

The main philosophical question when we are at the point of Responding is deciding WHO actually drives the bidding. In other words, who can keep the bidding open by the means of **forcing bids**.

In all systems, Zar Points included, the answer is that the limited (that is - the already described hand) is the passive one and the unlimited (or still un-described hand) issues the forcing bids.

Since in Zar Points Bidding the opener's limits are very well defined, most of the time (except after 1D opening) **the driving force is the responder** who in the middle of the second round (after the opener's re-bid) knows almost every important aspect of the opener's hand.

Note that this is NOT the case in Systems like 2/1, SAYC, Acol, etc. where the opener's hand is within 4 Playing Levels! There usually the OPENER is the driving force.

The question is "which is better?" and the answer is ... "the **responder** being the driving force is better".

Why?

Because the **opener is ONE MOVE AHEAD in the bidding**, that's why. This means that by the time **forcing/non-forcing decision** has to be made (usually on the second round of bidding) the responder will **have received much more information** than the opener – and NEVER during the bidding process would the responder be **AHEAD of the opener** in the process of **sending information** through! Opener will ALWAYS have sent more information simply because he has bid MORE TIMES than the responder.

Simple stuff! I am sure you would agree if you think about it.

All the systems mentioned above **have it backwards** – the opener is the "active" side while he is ALWAYS in a disadvantage in terms of received information.

And the reason they have it backwards is that the opener is **virtually unlimited** (or limited within 4 Playing Levels)! That's the root of the evil.

One of the CRITICAL calculations that the responder is able to make (and the opener is **NOT able** to) is the Misfit calculation (the **M2** value of the Zar Misfit Points). After the first two bids of the opener, the responder knows basically 9+ cards in two of the suits of the opener and he can use the expected values for the **other two suits**, where the opener's COMBINED length is MAXIMUM 4.

Not only does the opener generally **only know** that responder has some 4+ cards (**ANY number >= 4**) in the X-suit (**could** be 7 cards instead of 4 for example, or actually even 13, for that matter – if you are void) but he knows that for **only ONE** of the 4 suits of the responder (the suit just bid)! The responder, on the other hand, has knowledge about **2 suits** and knows the lengths of these suits more precisely, **if not exactly**!

I know you may try to **defend** this historical flaw (opener being the driving force) by saying that the responder can make a **relay** and "grab" the driving position from the opener. This only makes matters worse from the perspective of our discussion, since it is **one more bid wasted**, basically saying "Partner, I also have 13 cards".

But **how important** is it **to use** the fact that the opener is ALWAYS ahead in the number of bids made? Not a whole lot ...if we are talking about the 20% of the games where the bidding is NOT competitive and opponents only bid Pass after Pass.

If, on the other hand, we are talking about the 80% of the games where the opponents have the courage to interfere, then ...boy, that's a different story. The sooner you **limit yourself** the better chances for your partner's informed intelligent decision. Otherwise he is going to shoot from the hip as usual (claiming expert judgment when he guesses correctly).

And since I have already opened my mouth on the subject, let's take a "one-page-break" from the main line here – it may be a worth-while break.

I know it may sound like kind of harsh criticism, but it is actually just a **constructive view** on the ropes that pull the game backwards – NOT that we are now smarter than the people that have created the game and the first bidding systems like Strong 2C almost a century ago, but they **just didn't have** at their disposal a lot things that we DO have in the 21-th century, like:

1) the **historical knowledge** and accumulated **experience** throughout the almost 80 years of active bridge throughout the world;

2) the hundreds of books, articles, and other **literature**, accumulated during the 80 years since the creation of the game;

3) the **formal records**, bulletins, etc. of thousands of tournaments - international, European, World and Olympic events;

4) the power of the **computers in bridge analysis** and theory – including large databases of boards, hand generators, double-dummy players, computer simulators, etc.;

5) the results of **all the efforts made over the years** to improve the bidding process, the conventions used, the implications of "dual-meaning" situations, etc.;

6) the **statistics available** from various websites, books, etc.;

7) the **mathematical analysis** of the game (from pure theory point of view);

8) the **comparative studies** on Bidding Systems;

9) the power of **Internet in general** and the improvements it brings to the game, etc.

If Garozzo claims for HIS system developed in the **70-es** that it's NO LONGER GOOD, why would you expect a system developed in the **30-es** be any better, when not only the game itself was **in its infancy stage** but the word COMPUTER for example was not even present in the dictionary, let alone words like Internet, Database, Generators, etc.!

Please NOTE, that I am **not** "trying to imply" here that Zar Points are "the best" or "the perfect" or "the complete" or "the anything" – all I am saying is that it is worth **READING** the data and the ideas and **THINKING** about them. Our great-grandfathers who created the game would be proud to see that, rather than being angry that you are not "loyal to the game".

Here is a short summary of the **fundamental flaws** of systems like Acol, 2/1, Standard American, SAYC, etc., all based on the **Strong 2C** system **developed in 1928**:

1) Wide-open range of the opening bid **– 4 Playing Levels**;

2) Single and very-rare Strong opening (2C) happening **0.8% of the time**;

3) **Opener in driver-seat** when he is always behind in receiving information;

4) **Double-conditions** for jump bids (like BOTH 6-card suit and 16+ HCP);

5) Game-force bids on the **first round** of bidding when only round-force is needed;

6) Game-force bids **at the opening** when responder has not even entered the bidding.

7) Virtually incapable of **negative inference**.

We already know about the first three so let's say a couple of words about the last four.

You can NOT build systems on principles where you constantly have to meet **TWO CONDITIONS simultaneously** in order to fulfill the requirements for a bid, like having 6-card suit **and** 16+ HCP! You will end up (AS you actually DO) with TONS of hands (MOST of them, actually) which meet ONE of the conditions but **NOT BOTH**! And THEN you make compromises and get into senseless discussions "Who's right who's wrong". Trying to SHOW simultaneously MANY THINGS with a SINGLE BID!

We have a saying in Bulgaria which goes like this: "You cannot carry two watermelons with one arm". IF you have a double-condition-bid, it HAS to come in a SERIES of such double-condition-bids in order to "cover the ground" rather than just being there by itself.

On the game-forcing bids – in order for the responder to make a Game-forcing bid on the FIRST round he has to **"cover" BOTH** the **minimum**-opening chance AND the **misfit**-chance conditions. Chances for the responder to be SURE that he has ENOUGH power NO MATTHER WHAT are VERY slim - he must have something like 15 HCP to guarantee that. Otherwise, why the rush? The 4th Suit GF convention is a VERY GOOD example! Now, that IS bridge!

And to issue a **Game-force bid at the opening** bid (2C) just because you have 21 HCP without the responder having the chance to even open his mouth yet is some kind of a "**monologue**" game rather than "bridge" – you can construct for homework TONS of hands where you have 21 HCP and there is not even a shred of a Game due to weak hand in partner, or no fit, or misfitting hands OR ALL of these in the same time – I'll just wait for you to bid the Game and will double for 1,100.

Is this why you waited so long to pickup these **0.8%-chance** 21+ HCP, just to **give 1,100**?

"BUT, hey – this is a very RARE case, man ...", I hear you screaming in self-defense. So let's turn back to **page 15** and see how rare it really is, since you insist:

21+ against 0-5	= 1.2 + 0.2	= 1.4% of all hands 12+ HCP
21+ against over 5	= 1.2 + 0.2 + 0.3	= 1.7% of all hands 12+ HCP

So if we use the Milton criteria, basically chances for you to fall on your face after issuing the decree of Game Force with 21+ HCP are roughly 1.4 / (1.4 +1.7) = **39% !**

Crazy stuff ... Open your eyes and smell the coffee.

Which in turn reminds me to get back to the "coffee" ...

In Zar Points, I have to warn you, SOME sequences may look like "SUDDENLY and UNEXPECTEDLY" cut-off (if you "listen" with the ears of your great-grandfather). It looks as if the guys are "cheating", reminding you of the Reese-Shapiro or Katz-Cohen scandals (none of these pairs played Zar Points). By the way, it is impossible for me to mention the name of the great **Terence Reese** without saying that he is my favorite Bridge Author. If you need to improve your skills in moving the cards around (something you will need if you want to avoid hurting yourself with Zar Points) Reese is your best bet, followed by **Hugh Kelsey**.

So, MOST of the time NEITHER the opener NOR the responder do force the bidding - that's why there is NO system as **natural** as Zar Points. You just bid your suits, free as a bird since you are WELL-RESTRICTED, both in terms of **brute force** (you'd probably use HCP here) and **length of suits**.

Like in:

1♥ - Pass - 2♦ - ALL Pass

"Director!!!" ...

Relax – 2 over 1 is NON-FORCING ... (I guess you are already looking for your eyeballs on the floor - I lost you as a reader forever...).

The MOST important thing to remember in Zar Points Bidding Backbone is that:

1) The **opener** is free to **jump all-over** the tree (the Bidding Tree that is) with non-forcing bids (with the remarkable exceptions of opening **1C and 1D**);

2) The **responder** is free to **jump all-over** the tree (same tree but on the other side) with non-forcing bids (with the remarkable exceptions of responding **1M** or **2C**);

The last point of failure in the Strong-2C system (#7 from the list on page 68) is the inability for **negative** inference. The reason for that is that a hand with 5332, 6520, 7321, 7600, etc. with HCP strength between 10 and 20 HCP will ALL open **1 Spade**! Do I have 5, 6, or 7 cards, or a 2-suiter, or 10 HCP or 20 HCP ... ? You will (eventually) learn this "later". In Zar Points you know which of these cases your partner is in from the very opening. So if he opens for example the same "1 Spade", you know that he is:

1) limited in strength between 26 and 30 Zar Points;
2) limited in length of 5 cards;
3) limited in shape since he cannot have 5 spades and 6 in other suit (2-suiter).

This is what is called "negative inference" – the fact that he has **failed to open** something else already tells a lot.

We already had a deep look at the Misfit tables and know that the responder is in a good position to calculate the **M2 points** (the sum of the 2 biggest suit-differences) and to apply the probabilities from the Misfits tables in order to "fix" the specific **value of M4.**

We will first present the responses to the "normal" openings of 1H/1S, followed by 1NT, and the higher-level openings.

Zar Points Responses to 1H / 1S opening

We already know how to proceed after 1H / 1S opening in terms of raising partner, inviting to Game, or simply jump to Game – we have covered this in the first part of the Zar Points Hand Evaluation, remember? – see page 15, in "3. The Responding".

We even have four typical examples there. You need to have a fit and 16-20 Zar Points in order to raise your partner to Level 2, 21-25 to invite, and 26+ Zar Points – you simply know that you will play a Game in the opening suit no matter what.

We did this on the basis of **Strong 2 Clubs** natural bidding, though. In other words, it was in the twisted world of opener being "restricted" in the virtually "unrestricted" interval of Four Playing Levels. Now we shall see how much easier it is when you know that your partner is restricted within 1 Playing Level.

Responses with 1M show 4+ cards and are always One Round Forcing **(RF)** on ANY opening, the artificial 1m-openings included.

So a **response of 1S** on an opening 1H is RF waiting for the opener to naturally disclose his hand. If opener re-bids the heart suit, he shows exactly 5-card suit in hearts.

Remember, that opener is LIMITED to a MAX of 30 Zar Points and only a further Invitational bid by the responder would be concerned with his min-max strength.

Responses of **1NT** in general are very limited, non-forcing, and discouraging Game in the opener's suit. The general intent is **"to play".** And it certainly denies 4+ cards in spades in the case of 1H opening. If the opening is 1S, then the responder CAN have 4 cards in Hearts, but still the emphasis is on the fact that chances to "collect" the 52 Zar Points for a Game a virtually non-existent.

This brings us to the **2C** response of opening 1M.

This bid is **artificial and forcing, denying 4 cards in Spades if made over 1H opening**. The basic intent is to show prospects for Game and encouraging the opener to continue in a natural track. The main purpose of this artificial forcing is **to free** every other bid on Level 2 and beyond as a non-forcing and natural bid, while providing the means for forcing without a 4-card Major (which is the only other forcing bid available in the system).

Every other bid above 2C is natural and non-forcing with a general intent "to play".

All "invitational" hands go through either 1M response or through the 2C-artificial forcing.

Direct raise of the suit of opening is pre-emptive and sign-off.

You realize of course that a lot of the conventions you use can be adapted to the Zar Points Bidding Backbone if they reflect your style and are not ruled-out by the nature of the system itself.

Note also, that the 1S forcing response to 1H may also have “artificial flavor” as a forcing bid, especially if you later show support for opener’s Heart suit. If you play it that way, the bid should be alerted of course.

Please check the response-table for the probabilities when you decide to incorporate one convention or another.

Before going to the Strong, Artificial, and Forcing Openings of 1C and 1D responses, we’ll cover the response to 1NT opening and the responses to the higher-level bids with pre-emptive flavor. Let’s start with 1NT.

Zar Points Responses to 1NT opening

The 1NT opening is kind-of the "catch-all" bid of the Bidding Backbone, with 3 MAIN characteristics:

1) NO 4-card Major;
2) 26-30 Zar Points;
3) NO 5-5 of 6-carder of any kind
4) Minor-suits-oriented hand.

Its main purpose besides being the "catch-all" bid, is to pre-empt the opponents' bid of 1M (and chances are that the Majors when you do NOT have them, are "after" you in the circle of bidding, with a 2:1 chance of being in your opponent's hands).

Let's see what considerations you should have at this point after the 1NT opening.

We already mentioned that you should constantly have in mind the SHAPE of the fit suit between both hands (or the longest suit if you only have 7-card fits) regarding the number of tricks you would make.

This exercise already involves a Double-Dummy Solver (like the one used in the Zar Count Machine on WWW.ZarPoints.COM) because we are looking at the actual TRICKS that the corresponding shape would make.

As mentioned on the website, the **Double-dummy player (DDP) programs** is proven to give on average 1.0 MORE tricks than what a good player would make at the table. The reason is that the DDP "sees" all cards and makes NO mistakes on leads, finesses, double-finesses, etc.

In the SAME time though, a study made on **25,000,000 plays** made on **OK Bridge** (one of the two major Online Playing Sites – the other remarkable one being Fred Gitelman's **BBO**) shows that the average amount of tricks that the defense gives as a present to the declarer (yes, you and me too, my friend) is 1.1 tricks! Thus, the difference between a DDP and the "Real Life" is 1.1 – 1.0 = 0.1 tricks or **virtually 0**!!!

So make no mistake – Double-Dummy players like Deep Finesse are a **good tool** with respect to emulating the "events at the table".

So, using a DDP we projected the number of tricks made on **NT** contracts based on **HCP + CTRL** points (Zar Points without the Distribution part, so to say). We ran these experiments for various cases like having No Fit with no 5-card suit, No Fit with one 5-card suit, One Fit shaped 4-4, Double 4-4 fit, and One Fit shaped 5:3.

Here are the results:

No Fit Case	8tr	9tr	10tr	11tr	Average	
4333 opposite 4333	30	33	37	39	34.75	
4432 opposite 4333	30	33	36	40	34.75	**34.42 points** (average-average)
4432 opposite 4432	29	32	36	38	33.75	

How do you read this table?

It shows that in order to make 8 tricks with the worse-possible distribution 4333 vs. 4333 you need 30 points (again, we are talking about HCP + CTRL points or so-called 6-4-2-1) while for **3NT** or 9 tricks you need **33 points** !

Since **10** HCP are equal to **13** 6-4-2-1 points, in HCP "terms" this translates to 33/1.3 = 25.4 HCP. Let's calculate the Zar Points on such a hand, though. It comes to 33 + 8 + 8 = **49** Zar Points, so you cannot get even close to **the minimum of 52** Zar Points necessary to consider Games – one more evidence that Zar Points work for NT also.

This brings us to the next field of exploration – the No Fit but with a 5-card suit shaped 5-2 (note that the distribution is marked in "general" terms rather than spades-against-spades, hearts-against-hearts, etc.).

No Fit, 5-card	8tr	9tr	10tr	11tr	Average	
5332 opposite 4432	29	32	36	38	33.75	
5332 opposite 5332	30	32	36	38	34	**33.88** (average-average)

Here basically you **drop 1 point** from the points necessary to make the corresponding NT tricks.

Let's now see what happens when you DO have a fit and the fit shapes 4:4:

One Fit, 4-4	8tr	9tr	10tr	11tr	Average	
4333 opposite 4333	30	34	37	42	35.75	
4432 opposite 4333	30	33	37	40	35	**35.33** (average-average)
4432 opposite 4432	31	33	38	39	35.25	

Here you have to **go up 1 point** to make the 3NT !

So far no fit with a 5-card suit needs 32, no fit needs 33, and a 4:4 fit needs 34 points IF you have 2 very balanced hands! WHY is that? Because ALL the rest of the 3 suits are shaped 3:3 basically and the opponents will "swing the machete" all-over-you in these 3 suits, having MORE cards than you do in EACH of these suits EVEN if you happen to make ALL the 4 tricks in the 4:4 fit!

How does the picture change in the case of DOUBLE fit 4:4?

Here is the table:

Two Fits, 4-4	**8tr**	**9tr**	**10tr**	**11tr**	**Average**	
4432 opposite 4432	32	36	38	40	36.5	**36.5** (average-average)

So it costs at least **another point** if there are two 4-4 fits! The reason is similar (but stronger!) to the case above – in the OTHER two suits the opponents are likely to break your neck really.

Let's see what happens when you DO have a Fit and it shapes 5:3.

One Fit, 5-3	**8tr**	**9tr**	**10tr**	**11tr**	**Average**	
5332 opposite 4333	30	32	35	37	33.5	
5332 opposite 4432	30	34	35	38	34.25	**33.67**(average-average)
5332 opposite 5332	29	32	35	37	33.25	

We suddenly dropped from the 36 required for two 4-4 fits all-the-way down to 32 with one 5-3 fit – the reason why we mentioned that **with 5:3** you should **prefer to play in NT**. The actual reason for that stems from the fact that with a 5-card suit your chances for making an ADDITIONAL trick from trumping are minimal (since chances are that on the other side you will have 3 only and trumping from the long trumps do not bring additional tricks, while facilitating bringing NT-tricks from length at a contract 1 Level lower).

Generally speaking, though, you can say that distribution is worth little at NT, compared to trump-games.

One special remark for those who read carefully – you may have noticed that "on prima vista" the 4432 distribution is not worth the 2 points difference with 4333. The Zar Misfit Points take care of adjusting that nicely – you understand that the 4432 would make the Zar Misfit Points count greater.

A last note, also geared towards the 4432 vs. 4333 - the 4432 opposite 4432 with no fit is worth about 1 point compared to 4333 opposite 4333 with no fit. The 6 cards fits are shaped 3-3 in the 4333 case, but 4-2 in the 4432 case.

It is worth studying the above tables on your own time – that's why all the Tables are provided actually.

In contrast, let's see how a similar table would look using 4:3 and 5:2 shapes of the suit, since an alternative to playing in NT is to play a Moysean Fit when you don't have a real 8-card fit.

	|== HCP + CTRL ==|				|=== Full Zar Points Count ===|				
No Fit, 4-3	**8tr**	**9tr**	**10tr**	**11tr**	**ZDP***	**8tr**	**9tr**	**10tr**	**11tr**	**Average**
3433 with 3343	30	34	37	40	16	46	50	**53**	56	51.25
3343 with 3424	29	33	36	41	18	47	51	**54**	59	52.75
3244 with 4432	29	32	35	40	20	49	52	**55**	60	54
4522 with 3244	28	31	35	38	22	50	53	**57**	60	55

53.25 Average for the 4-3 fits cases

*** - ZDP** stands for Zar Distribution Points, as you can guess.

So for making 10 tricks on an Italian or Moysean Fit (4:3) you need between 53 and 57 Zar Points which is only **1-point-shift** from the 52-56 interval for Game in 4M, as you have probably noticed already.

Let's have a look at the 5:2 shape of the 7-card fit now:

	|== HCP + CTRL ==|				|=== Full Zar Points Count ===|				
No Fit, 4-3	**8tr**	**9tr**	**10tr**	**11tr**	**ZDP**	**8tr**	**9tr**	**10tr**	**11tr**	**Average**
3352 with 3424	28	31	35	38	21	49	52	**56**	59	54
3352 with 3325	27	31	34	37	22	49	53	**56**	59	54.25
4522 with 3244	28	31	34	38	22	50	53	**56**	60	54.75

54.333 Average for the 5-2 fit cases

Here you need **56 Zar Points** to make a 4M Game – much more than the 53 in the case of 4:3 and the 53 (32 + 10 + 11 from the first table in this section) needed for 9 tricks in NT with a 5-card suit.

I hope you are already well-informed about the NT vs. Trump potential and requirements and would be able to make the right decision when the time comes.

So, now let's get back to our responses to the 1NT opening, with the above considerations in mind.

Stayman is no longer necessary here as you already know – you partner simply doesn't have a 4-card major. This means that ALL bids are available for relays, 2 Clubs including.

2C is a relay (as are ALL the rest of the responses). It asks for distribution:

5) 4333
6) 4432
7) 5332
8) 5422
9) 5431

which in turn means that you make this relay with a **Game-force strength**.

Note how EASY it is now to **show the exact** distribution **below 3NT**. Note also, that the WORSE the distribution the LOWER the responses to the 2C relay:

10) **2D** represents 4333, which means only 8 ZP come from distribution and the expected power in HCP + CTRL is within the range of 18 – 22 points! Oriented towards 3NT;
11) **2H** is 4432 with 3 cards in Hearts (respectively 2 in Spades and 4-4 in the minors since the opener cannot have a 4-card Major);
12) **2S** is 4432 with 3 cards in Spades (respectively 2 in Hearts and 4-4 in the minors since the opener cannot have a 4-card Major);
13) **2NT** is a distribution with 5 Clubs, no singleton;
14) **3C** is a distribution with 5 Diamonds, no singleton.
15) **3H** is a 5431 distribution with 3 Hearts (so singleton Spade and 5-4 in minors).
16) **3S** is a 5431 distribution with 3 Spades (so singleton Heart and 5-4 in minors).

So whenever the opener responds with a **bid in a MAJOR**, he has **exactly 3 cards** there regardless of anything else, be it on Level 2 or Level 3. On Level 2 he has 4432, on Level 3 he has 5431. Simple and straightforward.

Needless to say, you HAVE to support the 3H and 3S bids with your hand, if that would be the bid made by the opener. In other words, you have to be ready to play 3NT WHATEVER the distribution case might be. Hands with **Sign-off** and **Invitational** intentions use the other relays.

2D is a relay to 2H:

17) a re-bid of **2NT** after that is invitational to 3 NT or 4H with 5+ hearts OR
18) a re-bid of **2S** after the transfer to 2H by responder indicates **general invitation** to 3NT and shows no relevance to either Major.

2H is a relay to 2S – a re-bid of 2NT after that is invitational with 5+ Spades;

2S is a relay to 2NT or 3C – preparing a Sign-Off in CLUBS, but the opener may accept via either 2NT or 3C, the difference being that by the intermediate response of 2NT the opener shows interest towards a Minor Game in Clubs. Responder STILL may sign-off by a 3C re-bid.

2NT is a relay to 3C or 3D – preparing a Sign-Off in DIAMONDS, but the opener may accept it via either 3C or 3D, the difference being that by the intermediate response of 3C the opener shows interest towards a Minor Game in Diamonds. Responder STILL may sign-off by a 3D re-bid.

Both Minor-suit transfers give the pair a chance to explore a Minor-suit Game even with sub-minimal hands due to an EARLY SUPERFIT finding, in the case of opener accepting the transfers through the intermediate bid.

Level-3 responses are the Second **Game Forcing** facility with **exactly 4441** distribution which enables the Opener to make the judgment for Game, knowing the EXACT distribution in length and suits. The bid shows:

19) at least 26 Zar Points, and
20) a singleton in the bid suit.

This is the ONLY situation where the Responder shifts the decision to the Opener due to the specifics of the hand and the "One-Shot-Shows-It-All" nature of the bid – the only situation where there would be NO fit is when he hits 4333 with the 4 cards being in the suit of the singleton, so the hand should stand a 3NT Game in such a case.

The rest of the bids are yours to explore.

NOTE, that the above schema is just the Zar Points suggested response schema since it **takes advantage** of the **specifics of the distributions** allowed in the 1NT opening and its orientation towards the minors.

What happens after INTERVENTION by the opponents? You simply follow the SAME structure but make it "relative" or "stepwise" – something that shouldn't be new to you.

Feel free to incorporate your own gadgets if the scheme above makes you nervous.

Zar Points Responses to above-1NT opening

The openings above 1NT have a pre-emptive flavor, BUT caring the "side" information about possessing 26-30 Zar Points!

Thus, these are information-loaded Opening Bids!

The responder can pretty much shoot the final contract "from-the-hip" especially if he happens to have a fit in the opening suit. In such a case, he can also judge very well a potential sacrifice depending on the Vulnerability of both sides, rather than being in a fog of uncertainly regarding what to do and at what Level.

The responses therefore are straightforward:

21) **2NT** asks for side top-honor (return in the suit denies a **side top-honor**);
22)
23) **New Suit** is a round forcing primarily oriented toward **fit** and then towards **side** top-honor.

As with the previous bids, you can shove here your usual and (probably) well-elaborated arsenal you are convenient with, just adjusting it to the Zar Points.

The main thing BEFORE the response is to figure-out the range of the HCP+CTRL part since you know the LENGTH of the main suit and can estimate the distributional part of the 26-30 Zar Points interval the opener is in.

This will also help you in a Competitive Bidding situation to judge when to double for penalty and what you can expect in terms of defensive strength from the specific higher-level opening of your partner.

Zar Points Responses to 1C opening

We already mentioned that the working version of the Zar Points Bidding Backbone had the 1C and 1D opening reversed since the natural "instinct" is to make the stronger bid higher. However, in order to make the bids closer to some well-known realms so they are perceived as "convenient", we changed the 1C opening to be the unlimited 36+ Zar Points opening bid, while the 1D opening projects the intermediate 31-35 Zar Points had.

So 1C opening in Strong Clubs Systems is **16+ HCP** while in Zar Points it is **36+ Zar Points**. I am sure by now you realize how DIFFERENT these 2 boundaries of 16 HCP and 36 Zar Points are – if you look at the Zar Points Distribution Table of page 20 you will notice the 36+ Zar Points actually spreads (in plain HCP terms) **from 10 HCP** up!!!

You probably also feel the pressure of the 1C opening on the opponents when they know that it can be made with as low as 10 HCP! While the information **sent to your partner** that you have at least 36+ Zar Points is vital. So measuring new realms with the old meter is never a good idea.

Having **the Strong and unlimited bid** being **1C** is a very good association with a well-known class of bidding systems – The Strong Club Systems. This provides some kind of a "bridge" (excuse the pun) between the "old world" and the "new world order".

If the opener re-bids NT, he promises the 36+ balanced Zar Points version of the hand.

The first natural question is **"Can I use the 'old' set of responses to the Strong 1C Opening?"** and the answer is generally **YES**. However, it is a good idea to RE-THINK and RE-DO them in terms of Zar Points intervals and Playing Levels.

We already mentioned that you can have a **similar "parallel"** between your old system and the new Zar Points bids at the levels higher than one.

Since the opening of **1C** is unlimited, the responder can NOT estimate the combined power, so he cannot operate in a fashion similar to any other responses known so far. In other words, we are BACK to the "**Opener is in the driver seat**" scenario – for the first (and last) time in Zar Points (since the 1D opening is already limited).

Thus we are forced to stick to a schema similar to the standard Strong Club Systems but tailored to the Zar Points measures.

So HOW would we decide if we have a negative response here? The answer is similar to the answer of how we decide if we have the right to raise our partner 1M opening to level 2, provided we have a fit, that is, if we have **16 Zar Points** or more. Remember, we raise partner's 1H or 1S opening to 2H or 2S with 16 Zar Points since with the 26 for the opening of 1M we get to the 42 Zar Points needed for Level 2 Play.

Here our partner has minimum **36** Zar Points, we with our **16 we get to the 52-point** mark, the Game Mark (IF we do not fall into a wild misfit).

So now we are ready to start.

1D – shows less than 16 Zar Points, any distribution. Continuations are natural in general, any gadgets, relays, etc. available for you to adapt and adopt from your "previous life".

1H – positive (16+), at least 4 cards in Hearts (rather than the 5-cards in Precision for example – I hope by now you know why);

1S – positive (16+), at least 4 cards in Spades (rather than the 5-cards in Precision for example – I hope by now you know why);

1NT – 16-20 Zar Points with balanced hand, ...

All other bids **similar to Strong Club, 16+ Zar Points –** don't even want to bother you with things that you know from the Strong Club Systems. JUST adjust the intervals in a way convenient for Zar Points calculations.

Originally I had a Section for the suggested Relay Systems potentially applicable in different situations, but then decided against since you can read all about the Symmetric Relays, the Viking Club Relays, etc. on the Web and in the Books and decide which ones fit your style and attitude.

Have a look also at the Control Cards Points (CCP) discussed in the next section – they can be applied after the 1C Opening also.

Zar Points Responses to 1D opening

The 1D opening promises an intermediate hand of **31-35** Zar Points and any distribution BUT a balanced hand (see the 1D opening on page 22). If the re-bid is NT, it is the case with 6-card minor, 26-31 Zar Points version of the hand as noted before.

When we look at the table on page 20, we will notice that HCP-range of this bid is basically **between 7 and 22 –** again a large interval measured by the old HCP meter.

First, the 1D opening is NOT an absolute forcing since it is LIMITED - if you have the guts, you can pass it with long diamonds and no prospect for any other play. Just before doing it, imagine that your partner has a 35 Zar Points hand with 5 cards in Diamonds).

1H – forcing, natural (4+ cards in Hearts), and waiting to see what the opener has to say for his holding. Any new suit on the next round is forcing.

1S – forcing, natural (4+ cards in Spades), and waiting to see what the opener has to say for his holding. Any new suit on the next round is forcing.

1 NT – basically negative, no prospects for Game so far. After this bid responder is ready to pass the next bid of the opener if he continues.

2C – artificial forcing, no 4-card Major, will support a bid in Major from the opener with 3 cards directly on the next round, Game prospects, basically 21+ Zar Points so that with the minimum of the opener (31 Zar Points) you get a Game Sum of 52. This an artificial forcing bid with orientation towards the minors (since it is denying 4+ cards in any of the Majors).

2D and beyond – you have to decide again based on your style and attitude whether to use the space above 2C for showing **2-suiter hands** or strait **6+ card suits** with **limited** power. I have versions with both but decided that this is more of a style issue rather than being an integral part of the strategy so decided to leave this issue to you and your partner to chose.

My preference though is for **6-card suit, non-forcing.**

Let's first see what would be the "brute force" opener with the balanced version of the opening, whose minimum is 31 – 10 = 21 HCP+CTRL (10 being the average Distribution Count for the expected 4432 of the balanced hand), or using the 13:10 transformation to get to the HCP "equivalent", 21/1.3 = 16 HCP.

Thus, whatever you decide, measure the **forcing/non-forcing** component of the bid against a **Strong NT opening** (if that happens to be the case of the opening).

Similar consideration should be applied to the Level-3 responses.

A primary concern after an unlimited strong opening in any system is the exploration of Slam and GRAND. Many players have structured the responses of their Strong Openings to directly answer for Controls. The ultimate goal is to establish the availability of Controls in a way, which doesn't allow the defense to take two tricks (or even one if we want to play a GRAND) right from the lead, like AK in a suit or 2 Aces in suits where we don't have a distributional control (void or singleton) if playing a trump contract.

The problem is – when you have distributional control in a side suit you need to know WHAT controls specifically your partner has and WHERE those controls actually are.

What follows may be regarded as a "convention" (oops, I promised I am not going to touch conventions), but as the tables would show, it is a matter of theoretical approach to a vital issue in reaching high-level contracts so I'll take the liberty to study and present it.

The way people currently ask for Controls is by expecting the answer in steps, roughly one to one – the first step is 0-1 controls, the second 2, ... the N-th step showing N controls. And the counting of controls is the way we all know it and use it (in Zar Points including) – A is 2 controls, K is 1 control.

Do you see anything wrong with this picture? I guess not. Otherwise you wouldn't have been playing it that way, would you? Let's see what would possibly be wrong with this.

You ask and I give you the good news – I have 4 controls. Not bad, you should agree. When you think about the many different ways these 4 controls may present themselves, you'll come up with quite a few.

I guess you are already laughing – who-da-heck cares WHERE the controls are coming from, all that matters is whether we have 12 (for a GRAND) and 11 for a Slam.

And you are right – the bad news is that if you have EVERYTHING then EVERYBODY will get to where you are heading so what's the big deal? It's a **wash-board**.

Now, it's a different story when you "get there" with only 10 or even 9 controls, due to the fact that you have located exactly WHAT **controls** your partner has and in WHICH **suits**, so your void for example is NOT sitting opposite an A or K on the other side and all 9 or 10 controls work and fit well.

In order to achieve this we shouldn't be using a Control Counting system where the controls coming from the stronger honor (the A) are **divisible** by the controls coming from the other one (the K). That IS the case with A=2 and K=1 (2 = 2x1). And this is the reason for the lack of **separation** demonstrated in our example, the 4-controls-case above.

If the points assigned are A=3 and K-2, then it would be a different story.

BUT wait – we ALREADY have that **3:2 ratio** since 3:2 = 6:4! A = 6, K = 4.

This means that we will achieve the SAME **separation power** using the counting we ALREADY use ANYWAY –> A=6 and K=4! So instead of asking for CONTROLS we are going to ask for the points coming from the CONTROL CARDS. That's why we will call them **CCP – Control Card Points**.

Let's have a look at how the CCP are distributed in terms of Zar Points in both hands and the A-K combinations for any possible amount of CCP.

CCP for Opening Hands of any kind - Raw count of 1,000,000 hands

	26-30	31-35	36-40	41+	*Totals*	*As & Ks*	*As & Ks*
0	38	0	0	0	***38***	*-*	
2	0	0	0	0	***0***	*-*	
4	3307	7	0	0	***3314***	*0 + 1*	
6	12121	95	0	0	***12216***	*1 + 0*	
8	14888	367	0	0	***15255***	*0 + 2*	
10	83451	7152	70	0	***90673***	*1 + 1*	
12	52155	8817	209	0	***61181***	*2 + 0*	*0 + 3*
14	57520	23554	1653	8	***82735***	*1 + 2*	
16	42556	43463	6512	96	***92627***	*2 + 1*	*0 + 4*
18	9115	19613	4793	120	***33641***	*3 + 0*	*1 + 3*
20	2945	21700	14300	1127	***40072***	*2 + 2*	
22	117	7037	10261	1540	***18955***	*3 + 1*	*1 + 4*
24	0	1518	4951	1359	***7828***	*4 + 0*	*2 + 3*
26	0	271	3728	2850	***6849***	*3 + 2*	
28	0	0	605	884	***1489***	*4 + 1*	*2 + 4*
30	0	0	125	902	***1027***	*3 + 3*	
32	0	0	8	374	***382***	*4 + 2*	
34	0	0	0	50	***50***	*3 + 4*	
36	0	0	0	30	***30***	*4 +3*	
38	0	0	0	0	***0***	*-*	
40	0	0	0	0	***0***	*4 + 4*	
	278213	***133594***	***47215***	***9340***	***468362***		

The above opening hands include hands with voids and hands with no voids – that is **all opening** hands.

You have noticed the regions marked with GREY color – these are the ones that cover 99%+ of the cases. Due to the existence of these regions, you can **target** the steps used in your responses – you understand that the CCP can be used in different occasions after different openings, not only after the Strong and unlimited 1C opening!

For example if the responder uses the CCP convention after a normal 1S opening (26-30 Zar Points interval) the first step would be "4 CCP or less", while if he uses it after a 1D opening, it would be "10 CCP or less". You can examine how the CCP would actually fit in your system.

Let's see how the picture looks like in terms of percentages, relative to all hands first, and then relative to the opening hands only.

CCP for Opening Hands, any kind – Percentages based on 1,000,000 hands

% relative to all 1,000,000 hands

	26-30	31-35	36-40	41+	*Totals*
0	0.0%	0.0%	0.0%	0.0%	***0.0%***
2	0.0%	0.0%	0.0%	0.0%	***0.0%***
4	0.3%	0.0%	0.0%	0.0%	***0.3%***
6	1.2%	0.0%	0.0%	0.0%	***1.2%***
8	1.5%	0.0%	0.0%	0.0%	***1.5%***
10	8.3%	0.7%	0.0%	0.0%	***9.1%***
12	5.2%	0.9%	0.0%	0.0%	***6.1%***
14	5.8%	2.4%	0.2%	0.0%	***8.3%***
16	4.3%	4.3%	0.7%	0.0%	***9.3%***
18	0.9%	2.0%	0.5%	0.0%	***3.4%***
20	0.3%	2.2%	1.4%	0.1%	***4.0%***
22	0.0%	0.7%	1.0%	0.2%	***1.9%***
24	0.0%	0.2%	0.5%	0.1%	***0.8%***
26	0.0%	0.0%	0.4%	0.3%	***0.7%***
28	0.0%	0.0%	0.1%	0.1%	***0.1%***
30	0.0%	0.0%	0.0%	0.1%	***0.1%***
32	0.0%	0.0%	0.0%	0.0%	***0.0%***
34	0.0%	0.0%	0.0%	0.0%	***0.0%***
36	0.0%	0.0%	0.0%	0.0%	***0.0%***
38	0.0%	0.0%	0.0%	0.0%	***0.0%***
40	0.0%	0.0%	0.0%	0.0%	***0.0%***
	27.8%	***13.4%***	***4.7%***	***0.9%***	***46.8%***

% relative to opening hands only

	26-30	31-35	36-40	41+	*Totals*
0	0.0%	0.0%	0.0%	0.0%	***0.0%***
2	0.0%	0.0%	0.0%	0.0%	***0.0%***
4	0.7%	0.0%	0.0%	0.0%	***0.7%***
6	2.6%	0.0%	0.0%	0.0%	***2.6%***
8	3.2%	0.1%	0.0%	0.0%	***3.3%***
10	17.8%	1.5%	0.0%	0.0%	***19.4%***
12	11.1%	1.9%	0.0%	0.0%	***13.1%***
14	12.3%	5.0%	0.4%	0.0%	***17.7%***
16	9.1%	9.3%	1.4%	0.0%	***19.8%***
18	1.9%	4.2%	1.0%	0.0%	***7.2%***
20	0.6%	4.6%	3.1%	0.2%	***8.6%***
22	0.0%	1.5%	2.2%	0.3%	***4.0%***
24	0.0%	0.3%	1.1%	0.3%	***1.7%***
26	0.0%	0.1%	0.8%	0.6%	***1.5%***
28	0.0%	0.0%	0.1%	0.2%	***0.3%***
30	0.0%	0.0%	0.0%	0.2%	***0.2%***
32	0.0%	0.0%	0.0%	0.1%	***0.1%***
34	0.0%	0.0%	0.0%	0.0%	***0.0%***
36	0.0%	0.0%	0.0%	0.0%	***0.0%***
38	0.0%	0.0%	0.0%	0.0%	***0.0%***
40	0.0%	0.0%	0.0%	0.0%	***0.0%***
	59.4%	***28.5%***	***10.1%***	***2.0%***	***100.0%***

The percentages would certainly change in cases where the responder has already shown a singleton or void (the first table has BOTH - with or without voids - in the same bucket).

An example would be a Splinter bid, or after a distribution - asking, or after the Zar Points 1NT opening and the consequent distribution revealing, etc.

So let's see how the table would look like when we EXCLUDE the hands with voids, followed by the case where we would exclude hands that do NOT have voids.

Here is how the table looks like for hands not containing any voids.

CCP for Opening Hands without voids - Raw count of 1,000,000 hands

	26-30	31-35	36-40	41+	*Totals*	*As & Ks*	*As & Ks*
0	12	0	0	0	***12***	-	
2	0	0	0	0	***0***	-	
4	1806	3	0	0	***1809***	***0 + 1***	
6	8753	12	0	0	***8765***	***1 + 0***	
8	12301	132	0	0	***12433***	***0 + 2***	
10	75789	4279	11	0	***80079***	***1 + 1***	
12	50239	6607	58	0	***56904***	***2 + 0***	***0 + 3***
14	56693	20142	770	0	***77605***	***1 + 2***	
16	42501	40562	4318	10	***87391***	***2 + 1***	***0 + 4***
18	9115	19255	3996	33	***32399***	***3 + 0***	***1 + 3***
20	2945	21597	12893	541	***37976***	***2 + 2***	
22	117	7037	9966	1096	***18216***	***3 + 1***	***1 + 4***
24	0	1518	4906	1123	***7547***	***4 + 0***	***2 + 3***
26	0	271	3728	2574	***6573***	***3 + 2***	
28	0	0	605	884	***1489***	***4 + 1***	***2 + 4***
30	0	0	125	875	***1000***	***3 + 3***	
32	0	0	8	374	***382***	***4 + 2***	
34	0	0	0	50	***50***	***3 + 4***	
36	0	0	0	30	***30***	***4 +3***	
38	0	0	0	0	***0***	-	
40	0	0	0	0	***0***	***4 + 4***	
	260271	***121415***	***41384***	***7590***	***430660***		

Now, let's have a look at the percentages.

CCP for Opening Hands without voids - Percentages based on 1,000,000 hands

% relative to all 1,000,000 hands

	26-30	31-35	36-40	41+	*Totals*
0	0.0%	0.0%	0.0%	0.0%	***0.0%***
2	0.0%	0.0%	0.0%	0.0%	***0.0%***
4	0.2%	0.0%	0.0%	0.0%	***0.2%***
6	0.9%	0.0%	0.0%	0.0%	***0.9%***
8	1.2%	0.0%	0.0%	0.0%	***1.2%***
10	7.6%	0.4%	0.0%	0.0%	***8.0%***
12	5.0%	0.7%	0.0%	0.0%	***5.7%***
14	5.7%	2.0%	0.1%	0.0%	***7.8%***
16	4.3%	4.1%	0.4%	0.0%	***8.7%***
18	0.9%	1.9%	0.4%	0.0%	***3.2%***
20	0.3%	2.2%	1.3%	0.1%	***3.8%***
22	0.0%	0.7%	1.0%	0.1%	***1.8%***
24	0.0%	0.2%	0.5%	0.1%	***0.8%***
26	0.0%	0.0%	0.4%	0.3%	***0.7%***
28	0.0%	0.0%	0.1%	0.1%	***0.1%***
30	0.0%	0.0%	0.0%	0.1%	***0.1%***
32	0.0%	0.0%	0.0%	0.0%	***0.0%***
34	0.0%	0.0%	0.0%	0.0%	***0.0%***
36	0.0%	0.0%	0.0%	0.0%	***0.0%***
38	0.0%	0.0%	0.0%	0.0%	***0.0%***
40	0.0%	0.0%	0.0%	0.0%	***0.0%***
	26.0%	***12.1%***	***4.1%***	***0.8%***	***43.1%***

% relative to opening hands only

	26-30	31-35	36-40	41+	*Totals*
0	0.0%	0.0%	0.0%	0.0%	***0.0%***
2	0.0%	0.0%	0.0%	0.0%	***0.0%***
4	0.4%	0.0%	0.0%	0.0%	***0.4%***
6	2.0%	0.0%	0.0%	0.0%	***2.0%***
8	2.9%	0.0%	0.0%	0.0%	***2.9%***
10	17.6%	1.0%	0.0%	0.0%	***18.6%***
12	11.7%	1.5%	0.0%	0.0%	***13.2%***
14	13.2%	4.7%	0.2%	0.0%	***18.0%***
16	9.9%	9.4%	1.0%	0.0%	***20.3%***
18	2.1%	4.5%	0.9%	0.0%	***7.5%***
20	0.7%	5.0%	3.0%	0.1%	***8.8%***
22	0.0%	1.6%	2.3%	0.3%	***4.2%***
24	0.0%	0.4%	1.1%	0.3%	***1.8%***
26	0.0%	0.1%	0.9%	0.6%	***1.5%***
28	0.0%	0.0%	0.1%	0.2%	***0.3%***
30	0.0%	0.0%	0.0%	0.2%	***0.2%***
32	0.0%	0.0%	0.0%	0.1%	***0.1%***
34	0.0%	0.0%	0.0%	0.0%	***0.0%***
36	0.0%	0.0%	0.0%	0.0%	***0.0%***
38	0.0%	0.0%	0.0%	0.0%	***0.0%***
40	0.0%	0.0%	0.0%	0.0%	***0.0%***
	60.4%	***28.2%***	***9.6%***	***1.8%***	***100.0%***

You see the clear **concentration** in the interval between **10 and 16 CCP** here, especially when considering the percentages relative to the Opening Hands only.

Now, let's turn to the set of hands that DO contain at least one void.

CCP for Opening Hands ONLY WITH voids – Raw count based on 1,000,000 hands

	26-30	31-35	36-40	41+	*Totals*	*As & Ks*	*As & Ks*
0	26	0	0	0	***26***	*-*	
2	0	0	0	0	***0***	*-*	
4	1501	4	0	0	***1505***	***0 + 1***	
6	3368	83	0	0	***3451***	***1 + 0***	
8	2587	235	0	0	***2822***	***0 + 2***	
10	7662	2873	59	0	***10594***	***1 + 1***	
12	1916	2210	151	0	***4277***	***2 + 0***	***0 + 3***
14	827	3412	883	8	***5130***	***1 + 2***	
16	55	2901	2194	86	***5236***	***2 + 1***	***0 + 4***
18	0	358	797	87	***1242***	***3 + 0***	***1 + 3***
20	0	103	1407	586	***2096***	***2 + 2***	
22	0	0	295	444	***739***	***3 + 1***	***1 + 4***
24	0	0	45	236	***281***	***4 + 0***	***2 + 3***
26	0	0	0	276	***276***	***3 + 2***	
28	0	0	0	0	***0***	***4 + 1***	***2 + 4***
30	0	0	0	27	***27***	***3 + 3***	
32	0	0	0	0	***0***	***4 + 2***	
34	0	0	0	0	***0***	***3 + 4***	
36	0	0	0	0	***0***	***4 +3***	
38	0	0	0	0	***0***	*-*	
40	0	0	0	0	***0***	***4 + 4***	
	17942	***12179***	***5831***	***1750***	***37702***		

Above **opening** hands include ONLY hands WITH **at least 1 void –** that's **3.8%** of all the hands, keeping in mind that 21 of the 39 possible distributions contain at least one void.

Let's now examine the percentages of those 21 different distributions with voids, relative to all the hands first, and then relative to the Opening Hands only.

CCP for Opening Hands ONLY WITH voids – Percentages on

1,000,000 hands

% relative to all 1,000,000 hands

	26-30	31-35	36-40	41+	*Totals*
0	0.0%	0.0%	0.0%	0.0%	***0.0%***
2	0.0%	0.0%	0.0%	0.0%	***0.0%***
4	0.2%	0.0%	0.0%	0.0%	***0.2%***
6	0.3%	0.0%	0.0%	0.0%	***0.3%***
8	0.3%	0.0%	0.0%	0.0%	***0.3%***
10	0.8%	0.3%	0.0%	0.0%	***1.1%***
12	0.2%	0.2%	0.0%	0.0%	***0.4%***
14	0.1%	0.3%	0.1%	0.0%	***0.5%***
16	0.0%	0.3%	0.2%	0.0%	***0.5%***
18	0.0%	0.0%	0.1%	0.0%	***0.1%***
20	0.0%	0.0%	0.1%	0.1%	***0.2%***
22	0.0%	0.0%	0.0%	0.0%	***0.1%***
24	0.0%	0.0%	0.0%	0.0%	***0.0%***
26	0.0%	0.0%	0.0%	0.0%	***0.0%***
28	0.0%	0.0%	0.0%	0.0%	***0.0%***
30	0.0%	0.0%	0.0%	0.0%	***0.0%***
32	0.0%	0.0%	0.0%	0.0%	***0.0%***
34	0.0%	0.0%	0.0%	0.0%	***0.0%***
36	0.0%	0.0%	0.0%	0.0%	***0.0%***
38	0.0%	0.0%	0.0%	0.0%	***0.0%***
40	0.0%	0.0%	0.0%	0.0%	***0.0%***
	1.8%	***1.2%***	***0.6%***	***0.2%***	***3.8%***

% relative to opening hands only

	26-30	31-35	36-40	41+	*Totals*
0	0.1%	0.0%	0.0%	0.0%	***0.1%***
2	0.0%	0.0%	0.0%	0.0%	***0.0%***
4	4.0%	0.0%	0.0%	0.0%	***4.0%***
6	8.9%	0.2%	0.0%	0.0%	***9.2%***
8	6.9%	0.6%	0.0%	0.0%	***7.5%***
10	20.3%	7.6%	0.2%	0.0%	***28.1%***
12	5.1%	5.9%	0.4%	0.0%	***11.3%***
14	2.2%	9.0%	2.3%	0.0%	***13.6%***
16	0.1%	7.7%	5.8%	0.2%	***13.9%***
18	0.0%	0.9%	2.1%	0.2%	***3.3%***
20	0.0%	0.3%	3.7%	1.6%	***5.6%***
22	0.0%	0.0%	0.8%	1.2%	***2.0%***
24	0.0%	0.0%	0.1%	0.6%	***0.7%***
26	0.0%	0.0%	0.0%	0.7%	***0.7%***
28	0.0%	0.0%	0.0%	0.0%	***0.0%***
30	0.0%	0.0%	0.0%	0.1%	***0.1%***
32	0.0%	0.0%	0.0%	0.0%	***0.0%***
34	0.0%	0.0%	0.0%	0.0%	***0.0%***
36	0.0%	0.0%	0.0%	0.0%	***0.0%***
38	0.0%	0.0%	0.0%	0.0%	***0.0%***
40	0.0%	0.0%	0.0%	0.0%	***0.0%***
	47.6%	***32.3%***	***15.5%***	***4.6%***	***100.0%***

Again the highest concentration is **between 10 and 16** CCP.

Examine the tables and see how they fit your own system and style.

Let's focus now on another important question regarding the CCP and their distribution – HOW are the CCP distributed in terms of the Zar Points intervals, starting from 57 Zar Points (Level 5 eventually) all-the-way to 72 Zar Points (keeping in mind that you may have a deduction for not having a Fit and still being able to reach the 67-point GRAND mark. We will also have **three columns** for each Level, so we are able to actually see how the CCP distribution **moves** between different brackets like:

57+		
31-35	**36-40**	**41+**
vs.	**vs.**	**vs.**
26-30	**21-25**	**16-20**

so we get the picture of the changes as we "move points" from one hand to another, so to say. Here is the first table, presenting the raw numbers for the 18,295 boards having Slam or Grand:

	57+			**62+**			**67+**			**72+**			**77+**		
	31-35 vs. 26-30	**36-40 vs. 21-25**	**41+ vs. 16-20**	**31-35 vs. 31-35**	**36-40 vs. 26-30**	**41+ vs. 21-25**	**31-35 vs. 36-40**	**36-40 vs. 31-35**	**41+ vs. 26-30**	**31-35 vs. 41+**	**36-40 vs. 36-40**	**41+ vs. 31-35**	**36-40 vs. 41+**	**41+ vs. 36-40**	
10	0														***0***
12	1														***1***
14	5	2													***7***
16	20	14	2												***36***
18	55	25	1	2	1										***84***
20	283	164	21	16	14	1	0	2							***501***
22	351	195	32	29	26	9	1	0							***643***
24	891	459	66	101	92	19	4	6	1	0	0	1			***1640***
26	1586	847	202	282	242	73	20	25	5	0	1	0			***3283***
28	867	437	91	228	161	44	16	17	9	1	2	0			***1873***
30	1675	962	219	685	552	168	82	88	44	4	4	0	1		***4484***
32	646	374	119	430	290	95	87	90	45	4	6	3	0		***2189***
34	337	210	64	301	227	100	80	86	39	3	17	10	3		***1477***
36	251	140	69	364	283	123	138	173	84	23	38	22	1	2	***1711***
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	***0***
40	18	10	5	54	38	23	59	71	32	14	20	16	5	1	***366***
	6986	***3839***	***891***	***2492***	***1926***	***655***	***487***	***558***	***259***	***49***	***88***	***52***	***10***	***3***	***18295***

And finally, we will have a look at the same tables, reflected in percentages:

	57+			**62+**			**67+**			**72+**			***77+***
	31-35 vs. 26-30	**36-40 vs. 21-25**	**41+ vs. 16-20**	**31-35 vs. 31-35**	**36-40 vs. 26-30**	**41+ vs. 21-25**	**31-35 vs. 36-40**	**36-40 vs. 31-35**	**41+ vs. 26-30**	**31-35 vs. 41+**	**36-40 vs. 36-40**	**41+ vs. 31-35**	
10	0.0%												
12	0.0%												
14	0.0%	0.0%											A
16	0.1%	0.1%	0.0%										L
18	0.3%	0.1%	0.0%	0.0%	0.0%								L
20	1.5%	0.9%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%					
22	1.9%	1.1%	0.2%	0.2%	0.1%	0.0%	0.0%	0.0%					Z
24	4.9%	2.5%	0.4%	0.6%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	E
26	8.7%	4.6%	1.1%	1.5%	1.3%	0.4%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	R
28	4.7%	2.4%	0.5%	1.2%	0.9%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	O
30	9.2%	5.3%	1.2%	3.7%	3.0%	0.9%	0.4%	0.5%	0.2%	0.0%	0.0%	0.0%	E
32	3.5%	2.0%	0.7%	2.4%	1.6%	0.5%	0.5%	0.5%	0.2%	0.0%	0.0%	0.0%	S
34	1.8%	1.1%	0.3%	1.6%	1.2%	0.5%	0.4%	0.5%	0.2%	0.0%	0.1%	0.1%	
36	1.4%	0.8%	0.4%	2.0%	1.5%	0.7%	0.8%	0.9%	0.5%	0.1%	0.2%	0.1%	
38	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
40	0.1%	0.1%	0.0%	0.3%	0.2%	0.1%	0.3%	0.4%	0.2%	0.1%	0.1%	0.1%	
	38.2%	***21.0%***	***4.9%***	***13.6%***	***10.5%***	***3.6%***	***2.7%***	***3.1%***	***1.4%***	***0.3%***	***0.5%***	***0.3%***	***0.0%***

The main observation to "take home" here is that the more "**evenly spread**" the power is between the two hands, the better chances for having the controls you need to make the high-level contract possible.

The remaining question is how you answer the "question" about the SUITS of your control cards.

You answer under the presumption that your partner who HAS already **asked** about CCP **knows** EXACTLY what you have in terms of number of A's and number of K's, so:

24) with 1 A you show **the suit** of the Ace;
25) with 2, you answer by **CRASH** (Color-RAnk-SHape);
26) with 3, you show the suit of **the missing** A.

You can make your own modifications of the scheme to fit your style.

Trump Games – the real picture

We are already aware of the Zar Points Bidding Backbone approaches towards virtually every aspect of the game of bridge. To check and double-check the validity of the approaches we have created massive databases of multi-million boards.

Just one little humble remark for you so you appreciate the value of the research - if you:

- have started playing since the first day of bridge in the mid 1920-ies;

- have played every day 4 bridge sessions of 25 boards, or 100 boards a day, including on the New Years Eve and Christmas,

then you would have played (during these 80 years since the inception of bridge) the amount of 2,920,000 boards, which is approximately the amount of boards in our database of 3 million boards.

And the information we have on each and every board is MANY TIMES bigger that the information any player would have had while playing the boards, including the possible bids in a variety of evaluation and bidding methods (see the Zar Count Machine on the website WWW.ZarPoints.COM for details).

Among other things, every board of the 3-millon boards has the best contracts in both NS and EW directions so we can compare what is doable with any type of hand. What follows in these last several sections is actually based in a fully-normalized subset of 1 million boards (4 million hands) and probably will open your eyes for a variety of critical data, which in turn will provide you with the information needed for making **critical** decisions in **critical** situations.

THEN you will start appreciating the wonderful game of bridge indeed.

We will start with the Game decisions in the trump games – both 4M and 5m, followed by examination the NT games, including borderline decisions like deciding between 2NT and 3NT for example. Then we will move to the Slam and Grand zones and see what happens there.

Some of the results are presented in graphical charts for easier summary and visualizing of the main conclusions and tendencies. After each of these last sections try to “take home” one simple rule that you have discovered for yourself – you may shoot me an email and discuss whatever you have found out and the level of importance it carries.

To save space, we will only present the tables with the percentages this time, since this is the most informative data that you would need. If you are interested in the raw count, you can download it from the website. Here is the first GAMES table we will discuss.

Zar Points and HCP when Double Dummy shows a game, but not Slam

ZP	NT	MAJOR	MINOR	TOTAL
39	0.0%	0.0%	0.0%	0.0%
40	0.0%	0.0%	0.0%	0.0%
41	0.0%	0.0%	0.0%	0.0%
42	0.0%	0.0%	0.0%	0.0%
43	0.0%	0.0%	0.0%	0.0%
44	0.1%	0.1%	0.0%	0.2%
45	0.1%	0.2%	0.0%	0.4%
46	0.3%	0.5%	0.1%	0.8%
47	0.6%	0.8%	0.2%	1.6%
48	1.1%	1.4%	0.3%	2.8%
49	2.0%	2.3%	0.7%	5.0%
50	2.9%	3.5%	1.2%	7.6%
51	4.2%	4.9%	2.1%	11.2%
52	5.7%	6.4%	3.3%	15.4%
53	7.4%	8.0%	4.9%	20.3%
54	8.5%	9.2%	6.8%	24.5%
55	9.5%	**9.8%**	8.7%	28.0%
56	**9.9%**	**9.9%**	10.2%	30.0%
57	**9.9%**	9.4%	**11.3%**	**30.6%**
58	9.0%	8.3%	**10.8%**	28.1%
59	8.0%	7.1%	10.3%	25.5%
60	6.4%	5.6%	8.6%	20.6%
61	4.8%	4.2%	6.8%	15.7%
62	3.4%	2.9%	4.8%	11.0%
63	2.3%	2.0%	3.4%	7.8%
64	1.5%	1.3%	2.2%	5.0%
65	1.0%	0.9%	1.4%	3.2%
66	0.5%	0.5%	0.8%	1.8%
67	0.4%	0.3%	0.5%	1.2%
68	0.2%	0.2%	0.3%	0.7%
69	0.1%	0.1%	0.2%	0.4%
70	0.1%	0.1%	0.1%	0.2%
71	0.0%	0.0%	0.0%	0.1%
72	0.0%	0.0%	0.0%	0.0%
	100.0%	100.0%	100.0%	300.0%

HCP	NT	MAJOR	MINOR	TOTAL
8	0.0%	0.0%	0.0%	0.0%
9	0.0%	0.0%	0.0%	0.0%
10	0.0%	0.0%	0.0%	0.0%
11	0.0%	0.0%	0.0%	0.0%
12	0.0%	0.0%	0.0%	0.0%
13	0.0%	0.1%	0.0%	0.1%
14	0.0%	0.2%	0.1%	0.2%
15	0.0%	0.4%	0.2%	0.6%
16	0.0%	0.7%	0.3%	1.1%
17	0.1%	1.3%	0.7%	2.0%
18	0.2%	2.2%	1.3%	3.7%
19	0.5%	3.5%	2.0%	6.0%
20	1.4%	5.5%	3.5%	10.3%
21	3.3%	7.5%	5.2%	15.9%
22	6.5%	9.8%	7.5%	23.8%
23	10.9%	11.8%	9.7%	32.4%
24	15.3%	**12.9%**	12.2%	40.5%
25	**17.3%**	**12.7%**	**13.3%**	**43.3%**
26	**16.2%**	11.2%	**13.5%**	41.0%
27	12.4%	8.7%	11.8%	32.9%
28	8.2%	5.8%	8.8%	22.8%
29	4.7%	3.4%	5.8%	13.9%
30	2.0%	1.5%	2.7%	6.2%
31	0.7%	0.6%	1.1%	2.4%
32	0.2%	0.2%	0.3%	0.7%
33	0.0%	0.0%	0.1%	0.1%
34	0.0%	0.0%	0.0%	0.0%
	100.0%	100.0%	100.0%	300.0%

You probably wonder why Zar Points show the correct **57 Zar Points** for the Games in 5m (MINOR) but stays around **55-56 Zar Points** for the Major Games – the reason of course is that these 55-56 actually include both 10 **and** 11 tricks (4M and 5M) cases.

The second question is how you catch the few hands that are below the 52 Zar Points mark and still have a Game (some 15-20 of the hands)? The answer is – by using the **Upgrade points** like superfit Zar Ruffing Power points, HCP-Concentration points, HCP-in-Partner-suit upgrade points, etc.

Note, that "at the table" the upgrade points are used only in terms of clarifying decisions like:

- Should I invite with this hand?
- Should I accept an invitation with this hand?
- Should I sacrifice, double, or pass in a competitive situation?

Thus, the total value of the upgrades should be **limited by 1 Level** (5 Zar Points). The more you have the better, but the corrections should not dominate the decision – the Basic Zar Points should. The same 1 Level limit applies to the downgrades.

Here are the percentages for the different types of Games:

138651	**13.9%**	**Number of NT Games**
167822	**16.8%**	**Number of Major Games**
62029	**6.2%**	**Number of Minor Games**
68391	**6.8%**	**Number of Slams / Grands**
692747	**69.3%**	**Number of less than Game**
=====	=====	
1129640	113.0%	

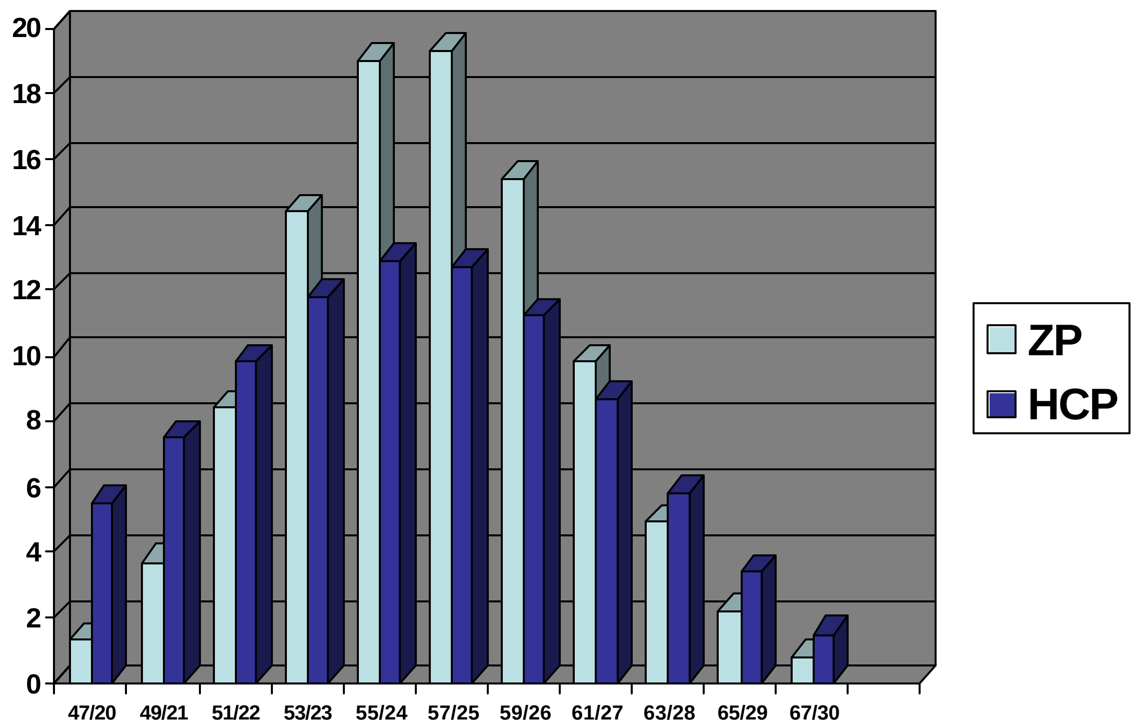
NOTE 1: Used **1,000,000 boards** (4,000,000 hands); Not used boards containing Slams & Grands
NOTE 2: One board may be counted in **SEVERAL** columns, if NT, AND M / m games are available

Since the Games Peak in general (the LAST column of the table) is at **57 Zar Points and 25 HCP respectively**, we will plot the above numbers around these peak numbers and see how the graphics compare. And since at that level Zar Points are **twice "cheaper",** we will map 2 Zar Points to 1 HCP, meaning that the columns will go 57/25, then 55/24. 53/23, etc. adding the Zar Points numbers just below so all the numbers are accounted for.

For example the column 57/25 takes the 56 AND the 57 for Zar Points, the 55/24 takes 54 AND 55, etc. So, we will actually plot the following data:

	47/20	**49/21**	**51/22**	**53/23**	**55/24**	**57/25**	**59/26**	**61/27**	**63/28**	**65/29**	**67/30**
ZP	1.3	3.7	8.4	14.4	19	19.3	15.4	9.8	4.9	2.2	0.8
HCP	5.5	7.5	9.8	11.8	12.9	12.7	11.2	8.7	5.8	3.4	1.5

And here is the graphics itself:



You see the distinct concentration in the Zar Points case – the interval of **23 to 26 HCP** catches **48.6%** of the Games, while the corresponding Zar Points interval of **52 to 59 ZP** catches **68.1%**!

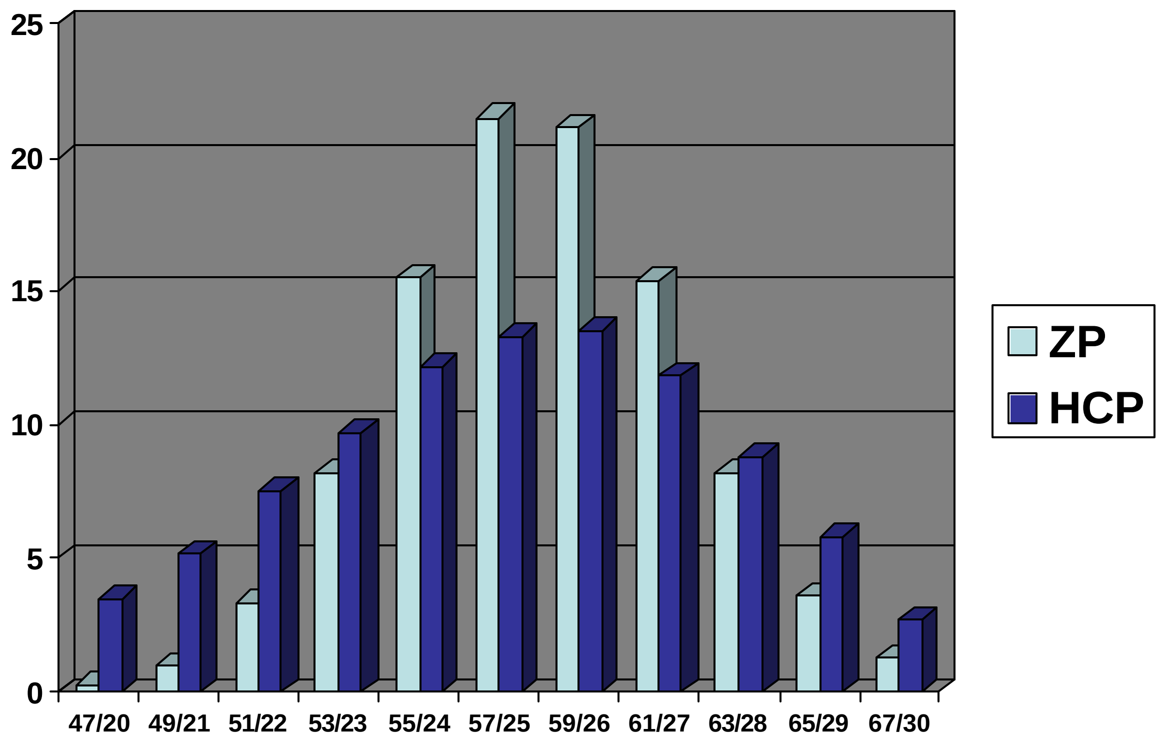
That's **68 vs. 48** – quite a difference in concentration! And all that is over the **SAME set** of 1,000,000 boards (4,000,000 hands)!

We will see a similar picture in the Minor games despite the fact that we are talking about only 11 tricks exactly.

For 5m (Games in Minor) we have to plot the following table:

	47/20	**49/21**	**51/22**	**53/23**	**55/24**	**57/25**	**59/26**	**61/27**	**63/28**	**65/29**	**67/30**
ZP	0.3	1	3.3	8.2	15.5	21.5	21.1	15.4	8.2	3.6	1.3
HCP	3.5	5.2	7.5	9.7	12.2	13.3	13.5	11.8	8.8	5.8	2.7

And here is the graphics itself:



The interval of **24 – 27 HCP** (the one containing the majority of the cases) covers **50.8%** of the Minor Games (5m).

The corresponding **54 – 61 Zar Points** covers **73.5%** of the Games.

In both cases you can roughly consider that Zar Points have **50% better concentration** than the conventional brute-force HCP.

So let us now see what happens in the NT Games.

No trump Games – the real picture

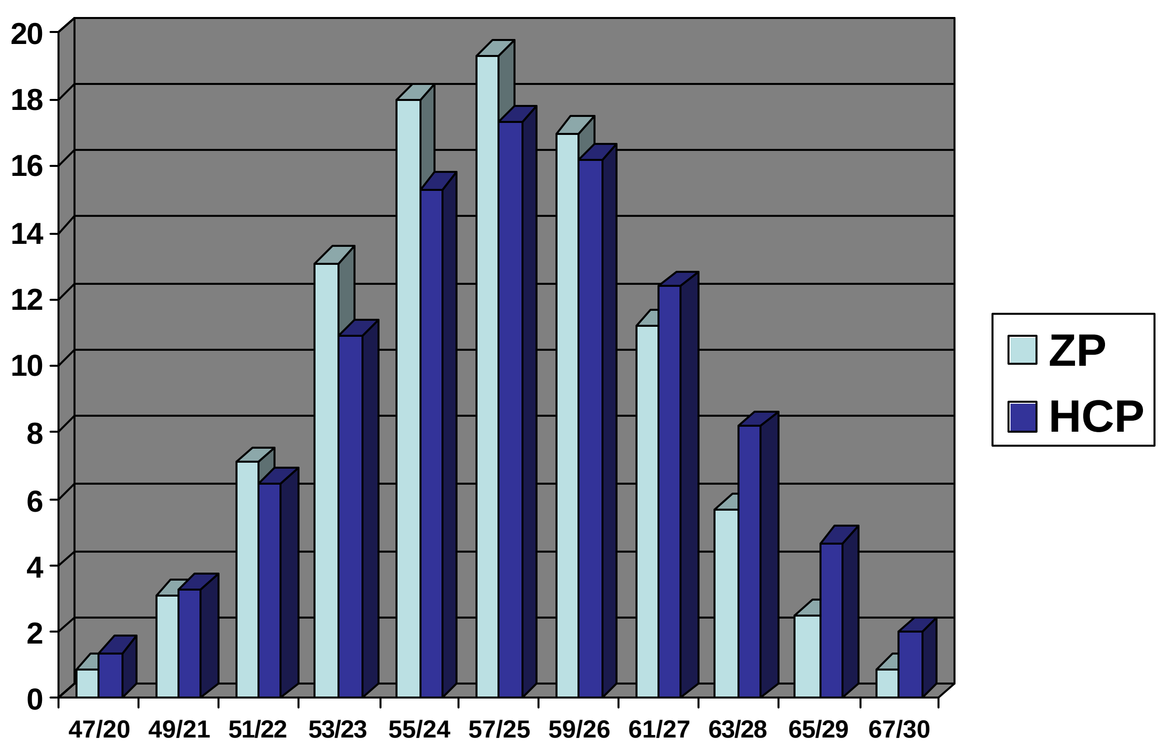
We cover 9, 10, and 11 tricks made in no-trump game. We will present the big picture first (corresponding to the graphics presented above for the 4M and 5m games) and then we will get into deeper details.

The need for the detailed tables comes from the fact that for NT games there are a lot of additional factors to be considered, as we already know from the previous NT sections.

For NT Games we have to plot the following table:

	47/20	**49/21**	**51/22**	**53/23**	**55/24**	**57/25**	**59/26**	**61/27**	**63/28**	**65/29**	**67/30**
ZP	0.9	3.1	7.1	13.1	18	19.3	17	11.2	5.7	2.5	0.9
HCP	1.4	3.3	6.5	10.9	15.3	17.3	16.2	12.4	8.2	4.7	2.0

And here is the graphics itself:



This time it is much closer, compared to the trump games of 4M and 5m.
The interval between **23 and 27** HCP covers the majority, and in HCP terms that is a whopping **72.1%.** The corresponding interval of **52 to 61** Zar Points still covers more than that – **79.1%**.

We will consider 3 main features of the partnership's hands and the way they influence the amount of Zar Points necessary for a game in 3 NT (and 4 NT and 5NT):

- having a **fit** vs. not having a fit;
- having a **5-card suit** vs. not-having a 5-card suit;
- having a fit with **5-3 split** vs. a 4-4 split.

NO TRUMP TABLE WITH PARTICULAR DISTRIBUTION

	-- NO FIT --		------- FIT --------			
ZP	**No 5**	**5**	**4-4**	**5-3**	**Rest**	**Total**
40	0.0	0.0	0.0	0.0	0.0	***0.0***
41	0.0	0.0	0.0	0.0	0.0	***0.0***
42	0.1	0.0	0.0	0.0	0.0	***0.1***
43	0.1	0.0	0.0	0.0	0.0	***0.2***
44	0.6	0.0	0.1	0.1	0.0	***0.8***
45	1.0	0.0	0.2	0.1	0.0	***1.3***
46	2.1	0.0	0.6	0.3	0.0	***3.0***
47	3.2	0.2	1.1	0.7	0.0	***5.3***
48	5.5	0.4	1.9	1.3	0.1	***9.2***
49	7.2	0.8	3.2	2.6	0.3	***14.0***
50	8.7	1.5	4.8	3.8	0.5	***19.2***
51	10.3	2.5	6.1	5.3	1.4	***25.6***
52	11.5	4.2	7.7	6.7	2.2	***32.3***
53	11.2	6.2	9.5	8.7	3.4	***39.1***
54	10.6	7.7	10.2	9.9	4.7	***43.1***
55	8.9	9.1	10.3	10.0	6.6	***44.8***
56	6.6	9.8	10.3	9.8	8.3	***44.9***
57	5.0	10.5	9.0	9.8	9.2	***43.6***
58	3.5	10.0	7.3	8.5	10.4	***39.8***
59	2.3	9.3	5.8	7.2	9.8	***34.5***
60	0.9	8.0	4.6	5.4	9.2	***28.1***
61	0.5	6.4	2.8	3.7	8.3	***21.6***
62	0.2	4.6	1.8	2.5	7.3	***16.4***
63	0.1	3.3	1.2	1.7	5.5	***11.8***
64	0.0	2.2	0.6	0.9	4.1	***7.9***
65	0.0	1.5	0.4	0.4	3.1	***5.5***
66	0.0	0.8	0.1	0.3	2.0	***3.2***
67	0.0	0.5	0.1	0.1	1.5	***2.3***
68	0.0	0.3	0.1	0.1	0.8	***1.2***
69	0.0	0.1	0.1	0.0	0.6	***0.8***
70	0.0	0.0	0.0	0.0	0.4	***0.5***
71	0.0	0.0	0.0	0.0	0.2	***0.2***
72	0.0	0.0	0.0	0.0	0.0	***0.0***
73	0.0	0.0	0.0	0.0	0.1	***0.1***
74	0.0	0.0	0.0	0.0	0.0	***0.0***
	100.0	***100.0***	***100.0***	***100.0***	***100.0***	***500.0***

	-- NO FIT --		------- FIT --------			
HCP	**No 5**	**5**	**4-4**	**5-3**	**Rest**	**Total**
16	0.0	0.0	0.0	0.0	0.0	***0.0***
17	0.0	0.0	0.0	0.0	0.0	***0.0***
18	0.0	0.0	0.0	0.0	0.1	***0.2***
19	0.1	0.1	0.1	0.2	0.5	***1.0***
20	0.4	0.4	0.4	0.7	1.5	***3.5***
21	1.4	1.7	1.6	2.4	3.9	***11.0***
22	3.3	4.2	4.2	5.6	6.7	***24.1***
23	8.2	9.1	8.3	10.5	12.4	***48.6***
24	12.6	14.6	13.4	15.8	17.1	***73.5***
25	16.7	17.4	17.2	18.4	17.3	***87.0***
26	17.1	18.0	18.0	16.6	15.9	***85.6***
27	15.0	14.5	14.8	13.0	11.5	***69.0***
28	11.2	10.3	10.5	8.6	7.2	***47.8***
29	7.3	5.8	6.4	5.0	3.7	***28.3***
30	4.1	2.4	3.1	2.2	1.5	***13.3***
31	1.8	0.9	1.2	0.8	0.4	***5.1***
32	0.7	0.2	0.4	0.2	0.1	***1.6***
33	0.2	0.0	0.1	0.0	0.0	***0.4***
34	0.1	0.0	0.0	0.0	0.0	***0.1***
	100.0	***100.0***	***100.0***	***100.0***	***100.0***	***500.0***

Let's emphasize once again that these are NT games with 9, 10, or 11 tricks in NT, rather than 9-tricks-only.

Why the peak for NT (9, 10, or 11 tricks) is that low (**52 Zar Points**) if you have neither a fit nor a 5-card suit? Because this is the case where you have the minimum distribution points, and the maximum of HCP + CTRL. The moment you hold a 5-card suit the amount of distribution points and Misfit Points increases and you need on average **57 Zar Points** to compensate (1 level difference between 57 and 52).

Look at the HCP table – it definitely looks much more "steady" if you look at the GREY areas where most of the cases are concentrated.

Here are the most important conclusions from this data:

- In each and every HCP diapason, having a **5-card** suit in a non-fit case improves your chances of pulling-it-off by approximately 1/16 or **6%**, compared to not having a 5-card suit.

- In case you have a fit, splitting the suit **5-3 is an advantage** in the minimum-HCP-cases (24-5 HCP) and **disadvantage in the maximum**-HCP-cases (26-27 HCP).

- Having a **fit is an advantage** in the minimum-HCP-cases (24-25 HCP) and **disadvantage in the maximum**-HCP-cases (26-27 HCP).

I guess some of these facts may come as a surprise to you.

Now, let's turn to the Zar Points portion of the table.

The first thing that comes to mind is how DIFFERENT the cases are – just look at the grey areas which cover most of the cases. The reason for that is ... in the Distribution Points and minimum Misfit Points, of course.

If you have a 5-card suit or longer (look at the column named "Rest") a good portion of the Zar Points comes from **distribution** which leaves you with less "brute-HCP-power" needed to cover both the need for stoppers in all suits, and to deliver tempo and power to establish tricks from length in your long suits – these tricks are "given" in TRUMP Game since they are declared TRUMPS and are tricks "right-off-the-bat". And your misfit points are also bigger when you hold a 5-card suit.

Thus:

- when you have a 5+ card suit, you need to be in the **57+ Zar-Points** zone;
- when you have no 5+ card suits, the "normal" **52+ Zar-Points** zone suffices.

Keep this in mind in the process of bidding when you reach a point of deciding that NT is the best type of contract you want to land.

But the critical question is at the BORDER between **8 tricks and 9 tricks** in NT. And we will see how the numbers drop towards the values pointed to by the partnership's Zar Points.

PERCENTAGE TABLE FOR NO TRUMP ANALYSIS (9 tricks exactly)

	----- NO FIT ---		------- FIT -----			
ZP	**No 5**	**5**	**4-4**	**5-3**	**Rest**	**Total**
40	0.0%	0.0%	0.0%	0.0%	0.0%	***0.0%***
41	0.1%	0.0%	0.0%	0.0%	0.0%	***0.1%***
42	0.1%	0.0%	0.0%	0.0%	0.0%	***0.1%***
43	0.2%	0.0%	0.0%	0.0%	0.0%	***0.2%***
44	1.0%	0.0%	0.1%	0.1%	0.0%	***1.3%***
45	1.6%	0.0%	0.3%	0.2%	0.1%	***2.2%***
46	3.3%	0.1%	0.7%	0.5%	0.1%	***4.7%***
47	5.1%	0.3%	1.5%	1.0%	0.3%	***8.3%***
48	8.6%	0.7%	2.4%	1.9%	0.6%	***14.2%***
49	10.3%	1.3%	4.0%	3.5%	1.4%	***20.5%***
50	12.1%	2.4%	6.1%	4.8%	2.2%	***27.6%***
51	13.0%	4.0%	7.5%	6.7%	3.9%	***35.1%***
52	**13.4%**	6.2%	9.1%	8.3%	5.4%	***42.4%***
53	10.6%	8.8%	10.2%	9.9%	7.2%	***46.8%***
54	8.7%	10.4%	**10.9%**	**10.6%**	8.5%	***49.1%***
55	6.0%	10.8%	9.9%	10.2%	9.9%	***46.8%***
56	2.9%	10.5%	9.5%	9.2%	10.3%	***42.4%***
57	2.1%	10.8%	7.6%	8.8%	10.1%	***39.3%***
58	0.6%	9.1%	5.8%	7.1%	9.0%	***31.6%***
59	0.3%	7.6%	4.7%	5.3%	8.1%	***26.0%***
60	0.0%	6.2%	3.1%	4.1%	6.5%	***19.8%***
61	0.0%	3.8%	2.2%	3.0%	5.0%	***14.0%***
62	0.0%	2.9%	1.7%	1.9%	3.8%	***10.3%***
63	0.0%	1.8%	1.1%	1.3%	2.7%	***6.9%***
64	0.0%	1.0%	0.6%	0.7%	1.8%	***4.1%***
65	0.0%	0.7%	0.4%	0.4%	1.2%	***2.7%***
66	0.0%	0.4%	0.2%	0.2%	0.7%	***1.5%***
67	0.0%	0.2%	0.1%	0.1%	0.4%	***0.9%***
68	0.0%	0.1%	0.1%	0.1%	0.3%	***0.6%***
69	0.0%	0.0%	0.0%	0.0%	0.2%	***0.2%***
70	0.0%	0.0%	0.0%	0.0%	0.1%	***0.2%***
71	0.0%	0.0%	0.0%	0.0%	0.1%	***0.1%***
72	0.0%	0.0%	0.0%	0.0%	0.0%	***0.0%***
	100.0%	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***500.0%***

	---- NO FIT ---		------- FIT -----			
HCP	**No 5**	**5**	**4-4**	**5-3**	**Rest**	**Total**
14	0.0%	0.0%	0.0%	0.0%	0.0%	***0.0%***
15	0.0%	0.0%	0.0%	0.0%	0.0%	***0.0%***
16	0.0%	0.0%	0.0%	0.0%	0.0%	***0.0%***
17	0.0%	0.0%	0.0%	0.0%	0.2%	***0.2%***
18	0.0%	0.0%	0.0%	0.1%	0.5%	***0.6%***
19	0.2%	0.2%	0.2%	0.3%	1.6%	***2.4%***
20	0.6%	0.7%	0.7%	1.3%	3.5%	***6.9%***
21	2.3%	2.8%	2.4%	3.9%	7.0%	***18.4%***
22	5.4%	6.9%	6.4%	8.7%	11.7%	***39.2%***
23	12.9%	14.0%	11.4%	15.1%	16.4%	***69.8%***
24	18.3%	20.7%	17.7%	20.4%	18.8%	***95.9%***
25	**22.1%**	21.4%	20.1%	20.6%	16.8%	***101.0%***
26	18.3%	17.5%	18.4%	15.4%	12.1%	***81.7%***
27	11.5%	10.0%	12.4%	8.9%	6.8%	***49.6%***
28	5.9%	4.3%	6.5%	3.6%	3.0%	***23.3%***
29	1.9%	1.2%	2.6%	1.4%	1.1%	***8.3%***
30	0.4%	0.2%	0.8%	0.3%	0.4%	***2.1%***
31	0.1%	0.0%	0.2%	0.1%	0.1%	***0.5%***
32	0.0%	0.0%	0.0%	0.0%	0.0%	***0.1%***
33	0.0%	0.0%	0.0%	0.0%	0.0%	***0.0%***
	100.0%	***10.0%***	***100.0%***	***100.0%***	***100.0%***	***500.0%***

The **no-fit** situation revolves around **52 Zar Points**, while if you have a fit you need around 54.

If you look at the “Rest” column where the suits with 6- cards goes, you already need **56**.

The longer suit you see in your hand the more Zar Points you need to make it. In HCP terms the peak is at the 25 HCP – something that you certainly know very well.

PERCENTAGE TABLE FOR NO TRUMP ANALYSIS (8 tricks exactly)

	---- NO FIT ----		------- FIT -----			
ZP	**No 5**	**5**	**4-4**	**5-3**	**Rest**	**Total**
39	0.0%	0.0%	0.0%	0.0%	0.0%	***0.0%***
40	0.3%	0.0%	0.0%	0.0%	0.0%	***0.3%***
41	0.7%	0.0%	0.0%	0.0%	0.0%	***0.7%***
42	1.3%	0.0%	0.1%	0.1%	0.0%	***1.5%***
43	2.3%	0.0%	0.4%	0.2%	0.0%	***3.0%***
44	4.8%	0.1%	1.0%	0.4%	0.2%	***6.4%***
45	6.1%	0.2%	1.7%	0.9%	0.3%	***9.2%***
46	9.7%	0.9%	3.0%	1.9%	0.6%	***16.1%***
47	11.9%	1.8%	4.2%	2.8%	1.3%	***22.0%***
48	**14.0%**	3.2%	6.1%	4.7%	2.3%	***30.3%***
49	13.0%	5.0%	7.7%	6.1%	3.5%	***35.4%***
50	11.5%	7.2%	9.2%	8.3%	5.1%	***41.2%***
51	9.5%	9.0%	9.8%	9.8%	6.8%	***45.0%***
52	6.8%	10.9%	10.0%	9.7%	8.0%	***45.4%***
53	4.4%	11.4%	10.6%	10.6%	8.9%	***45.9%***
54	2.2%	10.8%	8.6%	9.6%	9.5%	***40.7%***
55	1.1%	9.7%	7.4%	8.4%	9.4%	***36.0%***
56	0.5%	7.7%	5.7%	7.3%	9.2%	***30.3%***
57	0.1%	6.9%	4.3%	6.1%	7.9%	***25.2%***
58	0.0%	5.1%	3.2%	4.4%	6.8%	***19.5%***
59	0.0%	3.5%	2.4%	3.0%	5.6%	***14.5%***
60	0.0%	2.8%	1.8%	2.3%	4.5%	***11.4%***
61	0.0%	1.7%	1.0%	1.4%	3.2%	***7.3%***
62	0.0%	0.9%	0.7%	0.9%	2.3%	***4.8%***
63	0.0%	0.6%	0.4%	0.5%	1.7%	***3.3%***
64	0.0%	0.4%	0.2%	0.3%	1.0%	***1.9%***
65	0.0%	0.1%	0.2%	0.2%	0.7%	***1.2%***
66	0.0%	0.1%	0.1%	0.1%	0.5%	***0.7%***
67	0.0%	0.0%	0.1%	0.1%	0.3%	***0.5%***
68	0.0%	0.0%	0.0%	0.0%	0.2%	***0.2%***
69	0.0%	0.0%	0.0%	0.0%	0.1%	***0.1%***
70	0.0%	0.0%	0.0%	0.0%	0.0%	***0.1%***
	100.0%	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***500.0%***

	---- NO FIT ----		------- FIT -----			
HCP	**No 5**	**5**	**4-4**	**5-3**	**Rest**	**Total**
14	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**
15	0.0%	0.0%	0.0%	0.0%	0.1%	**0.1%**
16	0.0%	0.0%	0.0%	0.0%	0.3%	***0.4%***
17	0.0%	0.1%	0.1%	0.2%	0.8%	***1.2%***
18	0.4%	0.4%	0.4%	0.7%	2.3%	***4.0%***
19	1.6%	1.5%	1.5%	2.3%	4.8%	***11.7%***
20	5.3%	5.8%	4.5%	6.0%	8.7%	***30.3%***
21	11.2%	12.0%	9.2%	12.0%	12.9%	***57.3%***
22	18.8%	19.0%	15.6%	17.3%	16.2%	***86.9%***
23	**21.8%**	22.6%	19.9%	20.0%	16.6%	***100.8%***
24	19.3%	18.8%	19.1%	17.4%	14.3%	***88.9%***
25	12.4%	11.8%	14.3%	11.9%	10.2%	***60.5%***
26	6.3%	5.4%	8.4%	6.8%	6.6%	***33.4%***
27	2.2%	1.8%	4.2%	3.3%	3.4%	***14.8%***
28	0.5%	0.7%	1.8%	1.4%	1.7%	***6.1%***
29	0.2%	0.1%	0.8%	0.5%	0.8%	***2.4%***
30	0.1%	0.0%	0.2%	0.2%	0.3%	***0.8%***
31	0.0%	0.1%	0.1%	0.1%	0.1%	***0.3%***
32	0.0%	0.0%	0.0%	0.0%	0.0%	***0.1%***
33	0.0%	0.0%	0.0%	0.0%	0.0%	***0.0%***
	100.0%	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***500.0%***

For 8 tricks the HCP peak drops from 25 to 23 and the Zar Points (in the balanced hands case) drops from 52 to 48.

You can study these Games Tables from a lot of different perspectives and decide for yourself what you should do in different Game decisions situations.

Let us turn to the Slams and Grands now.

Slams and Grands – the real picture

Here we will split the tables in two groups – suit-slams and NT-slams. **Trump slams** first.

PERCENTAGE TABLE FOR TRUMP ANALYSIS (12 tricks exactly)

	---- NO FIT ------		----- FIT ------			
ZP	**No 5**	**5**	**4-4**	**5-3**	**Rest**	**Total**
50	0.1	0.0	0.0	0.0	0.2	***0.3***
51	0.2	0.1	0.2	0.2	0.3	***1.1***
52	0.0	0.0	0.7	0.3	0.6	***1.7***
53	2.0	0.2	0.9	0.5	1.1	***4.6***
54	2.0	0.3	1.7	1.0	1.7	***6.8***
55	3.4	0.2	2.8	1.8	2.6	***11.0***
56	5.6	0.8	4.7	3.3	3.8	***18.2***
57	9.0	1.6	6.0	4.7	5.1	***26.4***
58	12.6	3.0	7.9	6.9	6.8	***37.1***
59	11.6	4.2	10.2	8.8	8.5	***43.2***
60	14.5	6.5	11.1	10.0	9.4	***51.5***
61	11.4	8.5	**11.1**	11.3	9.8	***52.0***
62	11.3	**11.3**	10.2	**11.3**	**9.9**	***53.8***
63	6.0	11.0	8.9	9.7	9.1	***44.8***
64	4.6	11.6	6.4	8.3	8.0	***38.8***
65	3.1	9.9	5.6	6.3	6.1	***31.0***
66	0.7	7.7	3.4	5.3	4.9	***22.1***
67	1.2	6.4	2.9	3.6	3.7	***17.8***
68	0.6	5.1	2.0	2.5	2.9	***13.1***
69	0.0	5.2	0.9	1.5	1.9	***9.5***
70	0.1	1.9	1.1	1.1	1.3	***5.5***
71	0.0	1.8	0.5	0.6	0.8	***3.7***
72	0.0	1.3	0.3	0.3	0.6	***2.4***
73	0.0	0.6	0.2	0.3	0.3	***1.5***
74	0.0	0.6	0.0	0.1	0.2	***0.9***
75	0.0	0.3	0.1	0.1	0.2	***0.6***
76	0.0	0.1	0.0	0.1	0.1	***0.2***
77	0.0	0.0	0.0	0.0	0.0	***0.0***
78	0.0	0.1	0.0	0.0	0.0	***0.1***
79	0.0	0.0	0.0	0.0	0.0	***0.0***
	100.0	***100.0***	***100.0***	***100.0***	***100.0***	***500.0***

	---- NO FIT -----		---- FIT ------			
HCP	**No 5**	**5**	**4-4**	**5-3**	**Rest**	**Total**
20	0.0	0.0	0.1	0.2	1.7	***2.0***
21	0.0	0.0	0.4	0.3	3.1	***3.7***
22	0.0	0.2	1.2	1.2	4.3	***6.9***
23	0.0	0.2	2.3	2.1	6.9	***11.6***
24	0.2	0.7	3.7	3.6	9.0	***17.2***
25	0.4	1.8	6.3	6.1	10.8	***25.4***
26	1.3	4.6	9.5	9.3	13.1	***37.9***
27	3.7	7.9	11.5	12.5	**13.5**	***49.0***
28	5.5	11.9	14.6	14.7	11.3	***57.9***
29	13.4	17.3	**15.4**	**15.2**	9.6	***70.8***
30	19.4	**18.3**	13.3	13.0	7.3	***71.4***
31	18.5	13.9	9.1	9.3	4.6	***55.4***
32	15.3	10.5	6.0	6.2	2.6	***40.7***
33	10.9	6.1	3.4	3.4	1.2	***25.0***
35	6.3	4.0	1.9	1.7	0.6	***14.5***
36	2.8	1.6	0.7	0.6	0.3	***6.0***
37	1.7	0.6	0.3	0.4	0.1	***3.1***
38	0.6	0.1	0.2	0.1	0.0	***1.1***
39	0.1	0.2	0.1	0.0	0.0	***0.4***
	100.0	***100.0***	***100.0***	***100.0***	***100.0***	***500.0***

You see that at Slam level the MAX is achieved at **29 HCP** with **8-card fit**, regardless of whether or not the suit splits 4:4 or 5:3 between the partners, dropping to **27 HCP** when the partnership has a fit and one of the partners has at least **6 cards** (the “Rest” column).

In Zar Points terms **62 Zar Points** is the mark where both 6+ and 5-card suits hit.

Here is the picture for **12 tricks in NT.**

PERCENTAGE TABLE FOR NO TRUMP ANALYSIS (12 tricks exactly)

	------ NO FIT ----	--	------- FIT ------			
ZP	**No 5**	**5**	**4-4**	**5-3**	**Rest**	**Total**
50	0.1	0.0	0.0	0.0	0.0	***0.1***
51	0.1	0.0	0.0	0.0	0.0	***0.2***
52	0.0	0.0	0.1	0.1	0.0	***0.3***
53	1.6	0.0	0.2	0.3	0.1	***2.1***
54	2.1	0.2	0.4	0.6	0.2	***3.4***
55	4.0	0.1	1.3	1.2	0.4	***6.9***
56	5.8	1.0	2.5	2.4	0.9	***12.7***
57	10.7	0.9	3.7	4.3	1.5	***21.1***
58	12.3	3.0	4.5	5.6	2.8	***28.2***
59	12.6	3.8	7.9	7.6	4.8	***36.7***
60	13.6	6.7	10.5	10.0	6.5	***47.2***
61	13.1	8.9	11.9	11.4	8.4	***53.7***
62	**12.0**	**11.7**	**11.9**	**11.3**	**10.6**	***57.5***
63	6.3	10.6	11.5	10.6	11.1	***50.1***
64	3.6	12.4	8.4	9.7	11.3	***45.4***
65	2.0	10.8	7.7	7.3	9.9	***37.7***
66	0.1	8.2	5.5	6.2	9.0	***29.0***
67	0.0	6.7	4.9	4.3	6.9	***22.8***
68	0.0	5.9	2.7	2.7	5.6	***16.9***
69	0.0	4.1	1.4	2.0	3.4	***10.9***
70	0.0	1.7	1.2	1.2	2.4	***6.6***
71	0.0	1.5	0.7	0.5	1.5	***4.2***
72	0.0	1.1	0.6	0.3	1.0	***3.0***
73	0.0	0.4	0.5	0.2	0.6	***1.7***
74	0.0	0.3	0.2	0.0	0.4	***0.9***
75	0.0	0.0	0.2	0.1	0.2	***0.4***
76	0.0	0.0	0.0	0.0	0.1	***0.1***
77	0.0	0.0	0.0	0.0	0.0	***0.0***
78	0.0	0.0	0.0	0.0	0.1	***0.1***
79	0.0	0.0	0.0	0.0	0.0	***0.0***
	100.0	***100.0***	***100.0***	***100.0***	***100.0***	***500.0***

	------ NO FIT ---		------- FIT --------			
HCP	**No 5**	**5**	**4-4**	**5-3**	**Rest**	**Total**
20	0.0	0.0	0.0	0.0	0.1	**0.1**
21	0.0	0.0	0.0	0.0	0.1	***0.1***
22	0.0	0.0	0.1	0.0	0.3	***0.4***
23	0.0	0.0	0.0	0.2	0.8	***1.0***
24	0.1	0.0	0.1	0.4	2.2	***2.8***
25	0.1	0.6	1.1	1.9	4.5	***8.2***
26	0.6	2.3	2.3	3.8	8.0	***17.1***
27	2.7	5.3	4.3	8.6	12.0	***33.0***
28	5.8	8.8	10.4	13.0	15.5	***53.5***
29	12.7	17.0	15.8	18.5	17.9	***82.0***
30	20.7	22.0	20.2	19.1	16.5	***98.5***
31	20.1	17.9	18.6	15.6	11.7	***83.9***
32	17.7	13.6	14.6	11.0	6.7	***63.6***
33	12.4	8.5	7.9	5.3	2.5	***36.7***
35	4.7	3.3	3.6	2.0	0.9	***14.5***
36	2.0	0.7	1.0	0.4	0.2	***4.3***
	99.7	**100.0**	**99.9**	**99.9**	**100.0**	***499.5***

So in NT the median is at **30 HCP** which might look a bit low. However, when you look at the highest INTERVAL of 3 HCP which covers the greatest chances (above 17.5%) you see that that interval **for NT Slams is 30-32 HCP.**

In Zar Points terms the median is **62 Zar Points** – that shouldn't come as a surprise. It fluctuates up or down depending on the length of the suit (due to fluctuation of the ratio between the distributive and HCP + CTRL portion).

Let's turn now to the Grand statistics. Here we will present the NT and SUIT Grand Slams together as we did for Games. To facilitate comparison, we will also present the Small Slam table in that format first, followed by the Grand Slam.

Percentage Table for Slam NT/Suit by COLUMN

ZP	NT	SUIT	TOTAL
45	0.0	0.0	***0.0***
46	0.0	0.0	***0.0***
47	0.0	0.0	***0.0***
48	0.0	0.0	***0.0***
49	0.0	0.1	***0.1***
50	0.0	0.1	***0.1***
51	0.0	0.3	***0.3***
52	0.1	0.5	***0.6***
53	0.2	0.9	***1.1***
54	0.3	1.6	***1.9***
55	0.8	2.4	***3.2***
56	1.6	3.7	***5.3***
57	2.6	5.0	***7.6***
58	3.9	6.8	***10.7***
59	5.9	8.5	***14.4***
60	7.9	9.5	***17.4***
61	9.6	10.1	***19.7***
62	**11.0**	**10.2**	***21.3***
63	10.9	9.2	***20.1***
64	10.5	8.0	***18.5***
65	8.9	6.2	***15.1***
66	7.7	4.9	***12.6***
67	5.9	3.7	***9.6***
68	4.5	2.8	***7.3***
69	2.8	1.9	***4.7***
70	1.9	1.3	***3.2***
71	1.2	0.8	***1.9***
72	0.8	0.5	***1.3***
73	0.5	0.3	***0.8***
74	0.3	0.2	***0.5***
75	0.2	0.1	***0.3***
76	0.1	0.1	***0.1***
	100.0	***100.0***	***200.0***

HCP	NT	SUIT	TOTAL
12	0.0	0.0	***0.0***
13	0.0	0.0	***0.0***
14	0.0	0.0	***0.0***
15	0.0	0.0	***0.0***
16	0.0	0.1	***0.1***
17	0.0	0.2	***0.2***
18	0.0	0.3	***0.3***
19	0.0	0.7	***0.7***
20	0.0	1.2	***1.2***
21	0.0	2.1	***2.2***
22	0.2	3.2	***3.4***
23	0.5	5.2	***5.7***
24	1.4	7.0	***8.4***
25	3.2	8.9	***12.1***
26	5.9	10.9	***16.7***
27	9.7	**12.2**	***21.9***
28	13.6	**12.1**	***25.7***
29	17.6	11.5	***29.1***
30	**18.0**	9.5	***27.6***
31	14.0	6.5	***20.4***
32	9.3	4.1	***13.4***
33	4.4	2.1	***6.6***
34	1.7	1.1	***2.9***
35	0.4	0.5	***0.9***
36	0.1	0.2	***0.3***
37	0.0	0.1	***0.1***
38	0.0	0.0	***0.0***
39	0.0	0.0	***0.0***
	100.0	***100.0***	***200.0***

The peak for Zar Points is around **62 Zar Points** for this 12-tricks study and around **29 HCP** average peak for HCP.

As we can see from the GRAND Table below, the corresponding numbers for Grand Slam are **66 Zar Points peak** and **33 HCP peak**. Here is the table:

Percentage Table for GRAND NT/Suit by COLUMN

ZP	NT	SUIT	TOTAL
49	0.0	0.0	***0.0***
50	0.0	0.0	***0.0***
51	0.0	0.0	***0.0***
52	0.0	0.1	***0.1***
53	0.0	0.2	***0.2***
54	0.0	0.2	***0.2***
55	0.1	0.4	***0.5***
56	0.1	0.9	***1.0***
57	0.4	1.2	***1.6***
58	0.6	2.0	***2.5***
59	1.4	3.1	***4.4***
60	2.2	4.0	***6.1***
61	3.5	5.9	***9.4***
62	5.0	7.3	***12.3***
63	6.8	8.7	***15.5***
64	8.7	9.8	***18.5***
65	10.2	10.1	***20.3***
66	**11.5**	**10.0**	***21.5***
67	10.5	8.8	***19.3***
68	9.8	7.4	***17.2***
69	8.0	5.7	***13.7***
70	6.8	4.7	***11.5***
71	4.9	3.2	***8.1***
72	3.3	2.3	***5.6***
73	2.4	1.6	***4.1***
74	1.6	1.0	***2.6***
75	1.1	0.6	***1.7***
76	0.6	0.4	***1.0***
77	0.3	0.1	***0.4***
78	0.2	0.1	***0.3***
79	0.1	0.1	***0.2***
80	0.1	0.0	***0.1***
81	0.1	0.0	***0.1***
	100.0	***100.0***	***200.0***

HCP	NT	SUIT	TOTAL
14	0.0	0.0	***0.0***
15	0.0	0.0	***0.0***
16	0.0	0.0	***0.0***
17	0.0	0.1	***0.1***
18	0.0	0.1	***0.1***
19	0.0	0.3	***0.3***
20	0.0	0.5	***0.5***
21	0.0	0.9	***0.9***
22	0.1	1.5	***1.6***
23	0.1	2.1	***2.3***
24	0.6	3.6	***4.2***
25	1.7	5.3	***7.0***
26	2.8	6.9	***9.8***
27	5.2	8.6	***13.8***
28	8.4	10.6	***19.0***
29	10.4	11.3	***21.7***
30	14.1	**12.4**	***26.5***
31	**15.3**	**11.7**	***27.0***
32	13.7	9.0	***22.7***
33	10.5	6.4	***16.9***
34	8.1	4.2	***12.4***
35	5.0	2.5	***7.6***
36	2.5	1.2	***3.7***
37	0.9	0.4	***1.3***
38	0.4	0.2	***0.6***
39	0.1	0.0	***0.1***
	100.0	***100.0***	***200.0***

I hope these tables and graphics will help you get oriented next time you enter the jungle of bidding, regardless of whether you play Zar Points or ... hm ... what were you playing, actually?

Law of Total Tricks

"The Law" was discovered (for lack of better word) some 50 years ago (in 1955) by the French bridge player Jean-René Vernes. If I have to summarize what area of bridge it addresses, I'd say it's all about decision making in competitive auctions where both sides have a superfit in equally-split HCP power.

Larry Cohen's book on The Law is universally considered the best book on the subject – that's why he was the first to review this section of the book. I was really interested in finding his reaction (he has been through all the phases of the Zar Points development actually).

The Law as presented in the original article of Vernes (which you can read on The Bridge World website) states that "*the number of total tricks in a hand is approximately equal to the total number of trumps held by both sides, each in its respective suit.*"

In its "applicable at the table" form it actually states that:

In split HCP power (basically around 19-21 HCP) the number of tricks you can take on offense in trump contract is equal to the combined number of trumps you hold.

How valid is the Law is something that has been in discussions for ... 50 years already. I think 50 years is enough ...

We will present the complete statistics for both Zar Points and HCP (again only in percentage rather that raw numbers) and at the end we will make the proper wording so you can know exactly the percentage of time The Law is valid and how it fluctuates when the HCP power shifts up or down.

Since we will need to cover 3 dimensions - the amount of power (in Zar Points or in straight HCP), the amount of trumps, and the amount of tricks, we will need to split the study in separate tables based on the number of trumps.

After presenting the complete tables, we will make a close selection of the results ONLY for the cases of 19, 20, and 21 HCP then we will take the average percentage of these 3 cases and finally state the real Law of Total Tricks:

"The Law":

In balanced HCP power (19-21 HCP) your **HIGHEST TRICKS-CHANCE is 37%, for**:
9 tricks if you have **10 trumps or less**;
10 tricks if you have **more than 10 trumps**.

This means that chances for ANY other number of tricks will be less than 37%, since **37% is the peak.** So let's follow the plan.

PERCENTAGE TABLE for SUPERFIT of 9 TRUMPS

ZP	7	8	9	10	11	12	13	Total
32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	***0.0***
33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	***0.0***
34	0.1	0.0	0.0	0.0	0.0	0.0	0.0	***0.1***
35	0.4	0.0	0.0	0.0	0.0	0.0	0.0	***0.4***
36	0.7	0.0	0.0	0.0	0.0	0.0	0.0	***0.7***
37	1.7	0.1	0.0	0.0	0.0	0.0	0.0	***1.8***
38	3.4	0.4	0.0	0.0	0.0	0.0	0.0	***3.7***
39	5.1	0.9	0.1	0.0	0.0	0.0	0.0	***6.1***
40	6.9	1.3	0.1	0.0	0.0	0.0	0.0	***8.2***
41	9.1	2.9	0.3	0.0	0.0	0.0	0.0	***12.3***
42	11.7	4.3	0.6	0.0	0.0	0.0	0.0	***16.6***
43	**12.7**	6.7	1.4	0.0	0.0	0.0	0.0	***20.7***
44	11.5	9.0	2.1	0.2	0.0	0.0	0.0	***22.8***
45	10.1	11.2	4.2	0.5	0.0	0.0	0.0	***26.0***
46	8.6	11.8	5.6	1.1	0.1	0.0	0.0	***27.3***
47	6.0	**12.0**	8.0	1.5	0.1	0.0	0.0	***27.7***
48	4.3	10.9	9.9	3.0	0.3	0.1	0.0	***28.4***
49	3.2	8.4	11.5	4.9	0.6	0.0	0.0	***28.7***
50	1.7	7.0	**12.3**	6.8	1.4	0.1	0.0	***29.4***
51	1.2	4.7	11.9	9.2	2.3	0.1	0.0	***29.4***
52	0.6	3.4	9.6	11.0	3.7	0.7	0.0	***29.1***
53	0.3	2.1	7.2	**12.5**	5.8	1.1	0.0	***29.1***
54	0.2	1.2	5.8	12.3	7.8	1.6	0.5	***29.4***
55	0.1	0.8	3.5	9.9	10.4	2.8	0.5	***27.9***
56	0.1	0.4	2.2	9.1	11.3	3.8	0.6	***27.5***
57	0.1	0.2	1.6	6.1	**12.1**	5.5	0.5	***26.0***
58	0.0	0.1	0.9	4.5	10.9	8.4	1.1	***25.9***
59	0.0	0.1	0.5	2.6	9.7	10.7	2.8	***26.4***
60	0.0	0.0	0.3	1.8	7.8	**11.7**	3.1	***24.7***
61	0.0	0.0	0.2	1.1	5.5	10.9	7.8	***25.6***
62	0.0	0.0	0.1	0.7	3.9	10.8	8.7	***24.2***
63	0.0	0.0	0.1	0.5	2.7	7.9	10.1	***21.2***
64	0.0	0.0	0.0	0.3	1.3	7.7	**12.1**	***21.5***
65	0.0	0.0	0.0	0.1	1.0	4.7	9.7	***15.6***
66	0.0	0.0	0.0	0.1	0.5	3.8	11.0	***15.4***
67	0.0	0.0	0.0	0.1	0.4	3.0	7.8	***11.3***
68	0.0	0.0	0.0	0.0	0.3	1.9	7.4	***9.5***
69	0.0	0.0	0.0	0.0	0.1	1.1	3.9	***5.0***
70	0.0	0.0	0.0	0.0	0.1	0.7	4.4	***5.2***
71	0.0	0.0	0.0	0.0	0.0	0.4	2.8	***3.2***
72	0.0	0.0	0.0	0.0	0.0	0.2	2.3	***2.5***
73	0.0	0.0	0.0	0.0	0.0	0.1	1.0	***1.2***
74	0.0	0.0	0.0	0.0	0.0	0.2	1.0	***1.2***
75	0.0	0.0	0.0	0.0	0.0	0.0	0.8	***0.8***
76	0.0	0.0	0.0	0.0	0.0	0.0	0.0	***0.0***
77	0.0	0.0	0.0	0.0	0.0	0.0	0.0	***0.0***
78	0.0	0.0	0.0	0.0	0.0	0.0	0.2	***0.2***
	100.0	***100.0***	***100.0***	***100.0***	***100.0***	***100.0***	***100.0***	***700.0***

HCP	7	8	9	10	11	12	13	Total
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	***0.0***
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	***0.0***
8	0.1	0.0	0.0	0.0	0.0	0.0	0.0	***0.1***
9	0.2	0.1	0.0	0.0	0.0	0.0	0.0	***0.3***
10	1.1	0.1	0.0	0.0	0.0	0.0	0.0	***1.3***
11	2.4	0.3	0.1	0.0	0.0	0.0	0.0	***2.9***
12	4.4	1.0	0.1	0.0	0.0	0.0	0.0	***5.6***
13	8.3	2.7	0.4	0.1	0.0	0.0	0.0	***11.5***
14	11.0	4.3	0.9	0.2	0.0	0.0	0.0	***16.3***
15	13.4	7.5	2.4	0.6	0.1	0.0	0.0	***24.0***
16	15.5	10.9	4.3	1.0	0.3	0.0	0.0	***32.0***
17	14.6	13.7	7.2	2.1	0.3	0.1	0.0	***38.0***
18	12.0	15.4	10.4	4.1	1.0	0.2	0.0	***43.1***
19	7.8	15.1	13.6	6.6	1.9	0.3	0.1	***45.5***
20	5.2	11.8	**15.4**	9.9	3.4	0.6	0.0	***46.3***
21	2.2	8.0	14.2	12.6	6.2	1.8	0.6	***45.5***
22	0.7	5.2	13.2	14.7	9.4	3.2	0.8	***47.1***
23	0.5	2.3	9.0	15.1	11.2	5.4	1.6	***45.1***
24	0.1	1.0	4.8	13.0	14.5	8.4	2.0	***43.7***
25	0.1	0.3	2.6	9.4	14.9	10.5	3.7	***41.6***
26	0.0	0.1	1.2	6.0	13.5	13.3	6.9	***41.1***
27	0.0	0.0	0.2	3.2	10.7	15.5	9.5	***39.2***
28	0.0	0.0	0.1	1.1	6.8	12.5	13.3	***33.7***
29	0.0	0.0	0.0	0.4	3.6	10.8	14.2	***29.0***
30	0.0	0.0	0.0	0.1	1.5	7.9	13.5	***22.9***
31	0.0	0.0	0.0	0.0	0.5	5.5	11.7	***17.7***
32	0.0	0.0	0.0	0.0	0.2	2.5	8.9	***11.6***
33	0.0	0.0	0.0	0.0	0.0	1.1	7.5	***8.6***
34	0.0	0.0	0.0	0.0	0.0	0.4	3.2	***3.5***
35	0.0	0.0	0.0	0.0	0.0	0.0	1.9	***2.0***
36	0.0	0.0	0.0	0.0	0.0	0.0	0.6	***0.6***
37	0.0	0.0	0.0	0.0	0.0	0.0	0.1	***0.1***
	100.0	***100.0***	***100.0***	***100.0***	***100.0***	***100.0***	***100.0***	***700.0***

Don’t get scared by the 15%. The percentages here are taken by vertical rather than by row – it just shows that the MAXIMUM with **9 TRUMPS** is around 20 HCP. The corresponding number for MAX % for 9 tricks in **Zar Points is 50** – in the middle of the **Level 3** zone. Here is the table where the percentages are taken by the row (horizontally):

PERCENTAGE TABLE by ROW for 9 TRUMPS FIT

ZP	7	8	9	10	11	12	13
32	100.0	0.0	0.0	0.0	0.0	0.0	0.0
33	100.0	0.0	0.0	0.0	0.0	0.0	0.0
34	100.0	0.0	0.0	0.0	0.0	0.0	0.0
35	96.2	3.8	0.0	0.0	0.0	0.0	0.0
36	95.7	4.3	0.0	0.0	0.0	0.0	0.0
37	89.3	10.7	0.0	0.0	0.0	0.0	0.0
38	86.3	12.9	0.8	0.0	0.0	0.0	0.0
39	79.5	18.9	1.7	0.0	0.0	0.0	0.0
40	78.7	20.2	1.0	0.0	0.0	0.0	0.0
41	66.7	30.0	3.2	0.0	0.0	0.0	0.0
42	62.6	31.8	5.4	0.2	0.0	0.0	0.0
43	52.3	38.5	9.0	0.2	0.0	0.0	0.0
44	41.5	45.6	11.9	1.0	0.0	0.0	0.0
45	30.6	**47.3**	20.0	2.1	0.0	0.0	0.0
46	24.1	46.3	25.0	4.4	0.2	0.0	0.0
47	15.9	44.5	33.8	5.6	0.3	0.0	0.0
48	10.9	38.4	39.5	10.5	0.7	0.1	0.0
49	7.9	29.1	45.0	16.5	1.5	0.0	0.0
50	4.1	23.4	**46.7**	22.4	3.2	0.1	0.0
51	3.0	15.7	45.4	30.4	5.4	0.1	0.0
52	1.5	11.8	38.5	38.2	9.0	0.8	0.0
53	0.9	7.7	30.1	45.2	14.7	1.4	0.0
54	0.7	4.8	25.4	46.3	20.6	2.1	0.2
55	0.4	3.5	17.4	**42.7**	31.5	4.2	0.2
56	0.4	2.0	12.1	42.2	37.0	6.1	0.3
57	0.2	1.1	9.7	32.8	45.6	10.2	0.2
58	0.1	0.8	6.1	27.6	47.0	17.7	0.7
59	0.2	0.4	4.5	18.3	48.2	26.4	2.0
60	0.0	0.4	3.1	15.0	45.5	33.5	2.5
61	0.2	0.5	2.5	11.1	39.5	38.4	7.8
62	0.0	0.0	1.2	8.9	33.7	45.7	10.5
63	0.2	0.2	1.1	7.6	30.5	44.4	16.1
64	0.0	0.2	0.4	5.7	18.0	52.4	23.3
65	0.0	0.0	1.3	3.6	19.5	47.7	27.9
66	0.0	0.0	0.4	2.4	12.2	46.9	38.2
67	0.0	0.0	0.0	2.6	12.0	49.2	36.1
68	0.0	0.0	0.0	0.0	12.1	41.8	46.1
69	0.0	0.0	0.0	0.0	5.6	47.2	47.2
70	0.0	0.0	0.0	1.5	6.2	32.3	60.0
71	0.0	0.0	0.0	0.0	2.7	29.7	67.6
72	0.0	0.0	0.0	0.0	0.0	23.1	76.9
73	0.0	0.0	0.0	0.0	7.1	28.6	64.3
74	0.0	0.0	0.0	0.0	6.7	33.3	60.0
75	0.0	0.0	0.0	0.0	0.0	12.5	87.5
76	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77	0.0	0.0	0.0	0.0	0.0	0.0	0.0
78	0.0	0.0	0.0	0.0	0.0	0.0	100.0
	1150.2	***494.7***	***442.4***	***445.0***	***516.0***	***676.1***	***775.5***

HCP	7	8	9	10	11	12	13
6	50.0	50.0	0.0	0.0	0.0	0.0	0.0
7	100.0	0.0	0.0	0.0	0.0	0.0	0.0
8	100.0	0.0	0.0	0.0	0.0	0.0	0.0
9	58.3	29.2	12.5	0.0	0.0	0.0	0.0
10	84.3	11.2	4.5	0.0	0.0	0.0	0.0
11	80.0	16.0	4.0	0.0	0.0	0.0	0.0
12	72.5	23.6	3.5	0.5	0.0	0.0	0.0
13	64.5	29.7	5.2	0.6	0.0	0.0	0.0
14	58.8	32.2	7.6	1.2	0.2	0.0	0.0
15	47.1	36.7	13.2	2.7	0.3	0.0	0.0
16	39.7	38.8	17.4	3.3	0.6	0.0	0.0
17	30.3	39.5	23.6	5.9	0.7	0.1	0.0
18	21.2	38.0	29.1	9.8	1.7	0.2	0.0
19	12.7	34.3	35.0	14.8	3.0	0.2	0.0
20	8.3	26.2	**38.6**	21.4	5.1	0.5	0.0
21	3.6	18.6	37.5	28.7	10.0	1.4	0.1
22	1.2	12.3	35.0	33.8	15.1	2.5	0.2
23	1.0	6.3	27.3	39.5	20.7	4.9	0.4
24	0.3	3.0	16.8	39.5	30.9	8.8	0.6
25	0.3	1.2	10.9	34.5	38.3	13.4	1.3
26	0.0	0.4	6.0	27.1	42.7	20.7	3.0
27	0.1	0.0	1.7	18.5	43.4	31.0	5.4
28	0.0	0.0	1.0	9.6	40.9	37.3	11.2
29	0.0	0.0	0.3	5.2	31.3	46.0	17.2
30	0.0	0.0	0.0	1.5	19.9	52.9	25.7
31	0.0	0.0	0.0	0.6	10.4	55.7	33.3
32	0.0	0.0	0.0	0.0	6.5	46.4	47.0
33	0.0	0.0	0.0	0.0	2.0	32.7	65.3
34	0.0	0.0	0.0	0.0	0.0	28.2	71.8
35	0.0	0.0	0.0	0.0	0.0	5.6	94.4
36	0.0	0.0	0.0	0.0	0.0	16.7	83.3
37	0.0	0.0	0.0	0.0	0.0	0.0	100.0
	834.1	***447.3***	***330.6***	***298.8***	***323.5***	***405.2***	***560.5***

Now you see the real numbers for the corresponding HCP and Zar Points. The GREY area also shows you another thing – that if you have BALANCED power and a superfit of 9 trumps, Zar Points show you that you are in the 48-52 diapason which is **Level 3 !** And when you look at the MAX numbers in every column you see they change **by 5** Zar Points from Level to level – exactly the amount used in **Zar Points per Level.**

PERCENTAGE TABLE by ROW for 10 TRUMPS FIT

ZP	7	8	9	10	11	12	13
30	100.0	0.0	0.0	0.0	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32	0.0	0.0	0.0	0.0	0.0	0.0	0.0
33	100.0	0.0	0.0	0.0	0.0	0.0	0.0
34	100.0	0.0	0.0	0.0	0.0	0.0	0.0
35	100.0	0.0	0.0	0.0	0.0	0.0	0.0
36	96.6	3.4	0.0	0.0	0.0	0.0	0.0
37	84.0	16.0	0.0	0.0	0.0	0.0	0.0
38	85.4	12.2	2.4	0.0	0.0	0.0	0.0
39	76.6	23.4	0.0	0.0	0.0	0.0	0.0
40	65.6	29.7	4.6	0.0	0.0	0.0	0.0
41	56.9	36.2	6.3	0.7	0.0	0.0	0.0
42	48.6	42.9	8.3	0.3	0.0	0.0	0.0
43	35.0	49.4	14.9	0.4	0.2	0.0	0.0
44	29.8	47.1	20.8	2.3	0.0	0.0	0.0
45	19.3	46.4	29.5	4.8	0.0	0.0	0.0
46	13.5	44.6	33.8	7.9	0.3	0.0	0.0
47	9.3	39.0	41.5	9.3	0.8	0.0	0.0
48	5.0	34.0	46.5	13.4	1.0	0.0	0.0
49	3.4	26.3	**50.1**	17.7	2.5	0.0	0.0
50	1.5	19.1	45.8	27.4	5.9	0.2	0.0
51	1.0	11.6	43.4	35.7	7.6	0.8	0.0
52	0.4	7.3	39.1	40.1	12.7	0.4	0.0
53	0.1	4.1	29.6	47.9	16.9	1.3	0.1
54	0.3	2.0	20.4	**49.**1	24.4	3.6	0.0
55	0.1	1.5	14.3	45.7	33.1	4.7	0.5
56	0.0	0.6	10.2	39.2	41.5	8.1	0.5
57	0.0	0.4	6.9	30.7	45.7	15.2	1.1
58	0.0	0.2	3.3	25.7	51.2	17.2	2.3
59	0.0	0.0	1.5	13.8	**52.7**	29.7	2.3
60	0.0	0.0	1.3	12.9	48.5	33.8	3.5
61	0.0	0.0	1.1	8.9	40.7	45.3	4.0
62	0.0	0.0	0.3	4.2	32.8	51.9	10.7
63	0.0	0.0	0.7	3.5	24.4	55.1	16.3
64	0.0	0.0	0.5	2.5	14.9	61.2	20.9
65	0.0	0.0	0.0	1.5	12.0	55.6	30.8
66	0.0	0.0	0.0	0.8	12.9	50.0	36.4
67	0.0	0.0	0.0	0.0	8.8	33.8	57.5
68	0.0	0.0	0.0	0.0	4.8	38.7	56.5
69	0.0	0.0	0.0	0.0	2.6	42.1	55.3
70	0.0	0.0	0.0	0.0	0.0	33.3	66.7
71	0.0	0.0	0.0	0.0	6.7	20.0	73.3
72	0.0	0.0	0.0	0.0	0.0	55.6	44.4
73	0.0	0.0	0.0	0.0	0.0	0.0	100.0
74	0.0	0.0	0.0	0.0	0.0	0.0	100.0
75	0.0	0.0	0.0	0.0	0.0	0.0	100.0
76	0.0	0.0	0.0	0.0	0.0	0.0	100.0
77	0.0	0.0	0.0	0.0	0.0	0.0	0.0
78	0.0	0.0	0.0	0.0	0.0	100.0	0.0
	1032.6	***497.5***	***476.8***	***446.4***	***505.9***	***757.6***	***883.1***

HCP	7	8	9	10	11	12	13
4	100.0	0.0	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	80.0	20.0	0.0	0.0	0.0	0.0	0.0
7	80.0	20.0	0.0	0.0	0.0	0.0	0.0
8	75.0	25.0	0.0	0.0	0.0	0.0	0.0
9	72.2	22.2	2.8	0.0	2.8	0.0	0.0
10	64.6	25.3	8.9	1.3	0.0	0.0	0.0
11	50.0	37.0	11.6	1.4	0.0	0.0	0.0
12	49.1	39.3	10.7	0.9	0.0	0.0	0.0
13	42.0	36.8	17.9	3.1	0.3	0.0	0.0
14	34.9	39.8	20.0	5.2	0.2	0.0	0.0
15	28.5	34.0	28.2	8.0	1.3	0.0	0.0
16	20.1	35.0	31.6	10.7	2.6	0.0	0.0
17	12.9	34.7	34.3	13.7	4.0	0.4	0.0
18	8.3	28.1	35.7	21.1	6.2	0.5	0.1
19	6.0	23.5	**38.9**	22.5	8.0	0.9	0.1
20	2.4	16.3	35.5	30.7	12.6	2.2	0.2
21	1.0	10.5	29.7	34.9	18.5	4.6	0.7
22	0.3	6.7	24.5	**37.1**	24.1	6.4	0.9
23	0.3	2.2	19.1	34.9	30.7	11.0	1.7
24	0.0	0.9	10.4	34.5	36.1	16.7	1.5
25	0.1	0.6	5.8	24.8	42.7	22.4	3.5
26	0.0	0.3	2.5	19.3	**42.8**	28.9	6.2
27	0.0	0.0	0.6	11.7	36.7	41.1	9.9
28	0.0	0.0	0.6	4.1	33.7	47.4	14.2
29	0.0	0.0	0.0	2.1	27.2	47.3	23.4
30	0.0	0.0	0.0	1.9	12.7	54.8	30.6
31	0.0	0.0	0.0	0.0	7.6	50.0	42.4
32	0.0	0.0	0.0	0.0	8.0	32.0	60.0
33	0.0	0.0	0.0	0.0	0.0	31.6	68.4
34	0.0	0.0	0.0	0.0	0.0	26.7	73.3
35	0.0	0.0	0.0	0.0	25.0	0.0	75.0
36	0.0	0.0	0.0	0.0	0.0	33.3	66.7
	727.8	***458.2***	***369.4***	***323.7***	***383.8***	***458.1***	***478.9***

You see that for the HCP the "magic" number for 10 tricks (the 37.1% is already OUTSIDE of the grey area, while for Zar Points in still RIGHT IN THE MIDDLE of grey area **for 10 tricks of 52 -56 points** – one more proof of the precise pinpointing of Zar Points. And the MAX values again changes by **5 Zar Points per Level**.

PERCENTAGE TABLE by ROW for 11 TRUMPS FIT

ZP	7	8	9	10	11	12	13
32	100.0	0.0	0.0	0.0	0.0	0.0	0.0
33	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34	100.0	0.0	0.0	0.0	0.0	0.0	0.0
35	50.0	50.0	0.0	0.0	0.0	0.0	0.0
36	33.3	33.3	33.3	0.0	0.0	0.0	0.0
37	72.7	27.3	0.0	0.0	0.0	0.0	0.0
38	57.1	28.6	14.3	0.0	0.0	0.0	0.0
39	83.3	16.7	0.0	0.0	0.0	0.0	0.0
40	57.1	35.7	7.1	0.0	0.0	0.0	0.0
41	41.9	44.2	14.0	0.0	0.0	0.0	0.0
42	39.5	42.1	15.8	2.6	0.0	0.0	0.0
43	29.7	45.9	20.3	4.1	0.0	0.0	0.0
44	21.8	48.5	28.7	1.0	0.0	0.0	0.0
45	12.7	50.8	31.4	4.2	0.8	0.0	0.0
46	11.8	45.5	35.5	6.4	0.9	0.0	0.0
47	8.4	37.1	42.7	10.5	1.4	0.0	0.0
48	6.6	27.7	44.6	18.7	2.4	0.0	0.0
49	3.1	23.3	46.1	24.9	2.6	0.0	0.0
50	0.5	18.0	**46.6**	30.6	4.4	0.0	0.0
51	0.9	9.0	44.3	33.0	11.8	0.9	0.0
52	0.0	9.1	36.8	40.5	12.7	0.9	0.0
53	0.0	2.4	26.5	49.8	20.4	0.9	0.0
54	0.0	1.4	20.5	45.1	28.8	4.2	0.0
55	0.0	1.4	14.2	**53.1**	25.6	5.7	0.0
56	0.0	1.1	11.7	40.4	38.3	8.0	0.5
57	0.0	0.6	3.6	32.1	51.8	11.9	0.0
58	0.0	0.0	2.7	32.7	36.7	26.7	1.3
59	0.0	0.0	1.6	18.0	49.2	24.6	6.6
60	0.0	0.0	0.8	12.7	**54.8**	30.2	1.6
61	0.0	0.0	0.0	6.7	43.8	41.0	8.6
62	0.0	1.3	0.0	3.9	35.5	55.3	3.9
63	0.0	0.0	0.0	2.6	27.3	59.7	10.4
64	0.0	0.0	0.0	0.0	20.4	53.1	26.5
65	0.0	0.0	0.0	4.5	9.1	65.9	20.5
66	0.0	0.0	0.0	0.0	8.0	84.0	8.0
67	0.0	0.0	0.0	0.0	7.4	51.9	40.7
68	0.0	0.0	0.0	0.0	5.3	31.6	63.2
69	0.0	0.0	0.0	0.0	7.1	42.9	50.0
70	0.0	0.0	0.0	0.0	7.7	30.8	61.5
71	0.0	0.0	0.0	0.0	11.1	0.0	88.9
72	0.0	0.0	0.0	0.0	0.0	0.0	100.0
73	0.0	0.0	0.0	0.0	0.0	0.0	0.0
74	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75	0.0	0.0	0.0	0.0	0.0	0.0	0.0
76	0.0	0.0	0.0	0.0	0.0	0.0	100.0
	730.6	***600.9***	***543.0***	***478.1***	***525.3***	***630.0***	***592.2***

HCP	7	8	9	10	11	12	13
6	100.0	0.0	0.0	0.0	0.0	0.0	0.0
7	40.0	40.0	20.0	0.0	0.0	0.0	0.0
8	42.9	42.9	14.3	0.0	0.0	0.0	0.0
9	20.0	60.0	10.0	10.0	0.0	0.0	0.0
10	52.4	19.0	23.8	4.8	0.0	0.0	0.0
11	43.6	28.2	20.5	7.7	0.0	0.0	0.0
12	29.0	35.5	30.6	4.8	0.0	0.0	0.0
13	31.5	30.3	25.8	10.1	2.2	0.0	0.0
14	20.4	40.9	29.2	7.3	2.2	0.0	0.0
15	12.3	33.7	31.3	17.2	5.5	0.0	0.0
16	11.3	32.6	34.8	15.4	5.0	0.9	0.0
17	5.1	25.5	36.1	22.7	10.2	0.4	0.0
18	4.5	18.9	**36.2**	27.2	11.2	1.9	0.0
19	2.3	14.2	34.3	29.4	16.2	3.6	0.0
20	0.6	8.4	26.8	**44.1**	17.3	2.0	0.9
21	0.3	5.4	26.8	36.1	23.3	7.3	0.6
22	0.3	2.4	15.0	36.4	32.2	12.6	1.0
23	0.0	2.7	9.3	35.8	32.3	18.6	1.3
24	0.0	0.0	5.7	24.4	40.3	27.3	2.3
25	0.0	1.1	5.6	18.1	**42.9**	25.4	6.8
26	0.0	0.0	0.0	11.2	41.3	38.5	9.1
27	0.0	0.0	1.0	13.5	29.2	46.9	9.4
28	0.0	0.0	0.0	2.9	17.4	**55.1**	24.6
29	0.0	0.0	0.0	0.0	24.4	48.8	26.8
30	0.0	0.0	0.0	0.0	11.5	42.3	46.2
31	0.0	0.0	0.0	0.0	5.0	60.0	35.0
32	0.0	0.0	0.0	0.0	0.0	36.4	63.6
33	0.0	0.0	0.0	0.0	0.0	0.0	100.0
34	0.0	0.0	0.0	0.0	0.0	100.0	0.0
35	0.0	0.0	0.0	0.0	0.0	0.0	0.0
36	0.0	0.0	0.0	0.0	0.0	0.0	100.0
	416.5	***441.7***	***437.4***	***379.2***	***369.6***	***527.9***	***427.7***

Believe it or not, the top 11-trick result of 54.8 is **AGAIN in the MIDDLE** of the grey area which “happens” to be between **58 and 62** points – exactly **the area for Level 5!** And the MAX values again change by **5 Zar Points per Level**.

Let’s move to the final stage – averaging the numbers:

9-trumps

	7	**8**	**9**	**10**	**11**	**12**	**13**	
19	12.7	34.3	35.0	14.8	3.0	0.2	0.0	***100.0***
20	8.3	26.2	**38.6**	21.4	5.1	0.5	0.0	***100.0***
21	3.6	18.6	37.5	28.7	10.0	1.4	0.1	***100.0***
Avg	**8.2**	**26.4**	**37**	**21.6**	**6**	**0.7**	**0**	

10-trumps

19	6.0	23.5	38.9	22.5	8.0	0.9	0.1	***100.0***
20	2.4	16.3	**35.5**	30.7	12.6	2.2	0.2	***100.0***
21	1.0	10.5	29.7	34.9	18.5	4.6	0.7	***100.0***
Avg	**3.1**	**16.8**	**34.6**	**29.4**	**13**	**2.6**	**0.3**	

11-trumps

19	2.3	14.2	34.3	29.4	16.2	3.6	0.0	***100.0***
20	0.6	8.4	26.8	**44.1**	17.3	2.0	0.9	***100.0***
21	0.3	5.4	26.8	36.1	23.3	7.3	0.6	***100.0***
Avg	**1**	**9.3**	**29.3**	**36.5**	**18.9**	**4.3**	**0.5**	

12-trumps

19	0.0	9.8	34.1	39.0	9.8	7.3	0.0	***100.0***
20	0.0	14.3	20.0	**45.7**	17.1	2.9	0.0	***100.0***
21	0.0	0.0	26.1	30.4	26.1	17.4	0.0	***100.0***
Avg	**0**	**8**	**26.7**	**38.4**	**17.7**	**9.2**	**0**	

You see that the regular **"Law of Total Tricks"** stating that "With 10 trumps and HCP power basically divided between the two partnerships you are expected to make 10 tricks" is valid ... a mere **29% of the time**. Here is the real LAW:

With **9 or 10** trumps your highest chance of **36%** is to make **9 tricks .**
With **11 or 12** trumps your highest chance of **37%** is to make **10 tricks** .

The Law of Total Tricks:

In balanced HCP power (19-21 HCP) your **HIGHEST TRICKS-CHANCE is 37%, for**:
9 tricks if you have **10 trumps or less**;
10 tricks if you have **more than 10 trumps**.

Chances for ANY other number of tricks will be less than 37%, since **37% is the peak.**

Why would we be interested in making "EXACTLY" 9 tricks with 9 trumps, "EXACTLY" 10 tricks with 10 trumps etc.? Because **that's what The Law states**, being looked at from single-partnership perspective. Now, let's change the tables above to reflect the total chance of having 9 tricks OR MORE, than 10 tricks OR MORE, etc. In other words, to calculate the chances that we will make **NOT LESS than** the amount of tricks we are interested in.

We will use only the **AVERAGE** row (the last row):

9-trumps

	7+	8+	9+	10+	11+	12+	13+
Avg	**100**	**91.7**	**65.3**	**28.3**	**6.7**	**0.7**	**0**

10-trumps

	7+	8+	9+	10+	11+	12+	13+
Avg	**100**	**96.7**	**79.9**	**45.3**	**15.9**	**2.9**	**0.3**

11-trumps

	7+	8+	9+	10+	11+	12+	13+
Avg	**100**	**98.8**	**89.5**	**60.2**	**23.7**	**4.8**	**0.5**

12-trumps

	7+	8+	9+	10+	11+	12+	13+
Avg	**100**	**100**	**92.0**	**65.3**	**26.9**	**9.2**	**0**

So your chances for **9+ tricks** are (slightly rounded for easy remembering):

- 65% with 9 trumps;
- 80% with 10 trumps;
- 90% with 11 trumps;

So your chances for **10+ tricks** are (slightly rounded for easy remembering):

- 30% with 9 trumps;
- 45% with 10 trumps;
- 60% with 11 trumps;

So your chances for **11+ tricks** are (slightly rounded for easy remembering):

- 6% with 9 trumps;
- 16% with 10 trumps;
- 24% with 11 trumps;

The percentages are rounded for easy memorizing. For "at-the-table" use may be the first two (9 and 10 tricks) sets of numbers are enough.

Thus, in terms of single-partnership point of view, The Law actually should state that you make:

- **9+ tricks** with 9 trumps **65%** of the time,
- **10+ tricks** with 10 trumps **45%** of the time, and
- **11+ tricks** with 11 trumps **25%** of the time.

Let's now look at what happens with **the real** Law of Total Tricks, stating that in balanced HCP power (19-21 HCP) the total number of tricks available at the table on trump contracts is equal to the SUM of the biggest fits of both partnerships. Here is the truth:

Law of Total Tricks

PERCENTAGES

WE	THEY	15	16	17	18	19	20	21	22
7	7	88.8%	10.2%	0.9%	0.1%	0.0%	0.0%	0.0%	0.0%
	8	70.2%	26.4%	3.1%	0.3%	0.0%	0.0%	0.0%	0.0%
8	7	**70.0%**	26.8%	2.8%	0.4%	0.0%	0.0%	0.0%	0.0%
	8	19.7%	**45.1%**	28.3%	6.1%	0.8%	0.1%	0.0%	0.0%
	9	4.1%	22.3%	**40.9%**	26.0%	5.9%	0.7%	0.1%	0.0%
	10	0.5%	5.1%	22.9%	**40.6%**	24.9%	5.3%	0.7%	0.0%
	11	0.0%	0.9%	5.9%	34.3%	**39.9%**	17.1%	1.9%	0.0%
9	8	4.1%	22.9%	**40.7%**	25.8%	5.7%	0.7%	0.1%	0.0%
	9	0.5%	6.7%	23.8%	**35.8%**	23.8%	7.7%	1.5%	0.2%
	10	0.0%	1.2%	10.0%	28.1%	**34.6%**	19.6%	5.5%	0.9%
	11	0.0%	0.2%	3.4%	18.0%	32.7%	28.3%	13.8%	3.6%
	12	0.0%	0.0%	0.0%	2.3%	12.2%	38.4%	32.6%	14.5%
	13	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%
10	8	0.5%	5.1%	24.9%	**40.9%**	23.1%	5.0%	0.4%	0.0%
	9	0.0%	1.0%	9.5%	28.4%	**34.4%**	19.9%	5.6%	1.1%
	10	0.0%	0.0%	2.0%	14.0%	30.4%	32.5%	15.6%	5.5%
	11	0.0%	0.0%	0.5%	7.6%	25.8%	29.6%	25.2%	11.4%
	12	0.0%	0.0%	0.0%	1.2%	3.7%	30.5%	37.8%	26.8%
	13	0.0%	0.0%	0.0%	0.0%	7.7%	69.2%	23.1%	0.0%
11	8	0.0%	0.6%	7.2%	34.6%	**38.2%**	16.1%	3.0%	0.3%
	9	0.0%	0.0%	3.6%	16.3%	34.5%	26.4%	15.2%	3.8%
	10	0.0%	0.0%	0.6%	6.4%	26.2%	36.4%	20.9%	9.4%
	11	0.0%	0.0%	0.0%	3.1%	18.2%	27.7%	32.3%	18.7%
	12	0.0%	0.0%	0.0%	2.2%	2.2%	41.3%	26.1%	28.3%
	13	0.0%	0.0%	0.0%	0.0%	0.0%	44.4%	33.3%	22.2%

WE	THEY	15	16	17	18	19	20	21	22
12	**9**	0.0%	0.0%	0.0%	3.2%	16.9%	37.7%	30.5%	11.7%
	10	0.0%	0.0%	0.0%	0.0%	7.2%	31.4%	33.3%	28.1%
	11	0.0%	0.0%	0.0%	0.0%	6.1%	25.8%	25.8%	42.4%
	12	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	44.4%	55.6%
13	**9**	0.0%	0.0%	0.0%	0.0%	0.0%	33.3%	66.7%	0.0%
	10	0.0%	0.0%	0.0%	0.0%	0.0%	20.0%	40.0%	40.0%
	11	0.0%	0.0%	0.0%	0.0%	0.0%	50.0%	0.0%	50.0%
		258.5%	***174.7%***	***231.0%***	***375.8%***	***454.9%***	***795.2%***	***535.5%***	***374.6%***

You see that basically The Law is CORRECT if it is stated like this: In balanced HCP power (19-21 HCP) the total number of tricks available at the table on trump contracts reaches **MAXIMUM** at the SUM of the biggest fits of both partnerships, **at 37%".**

An important note: The Law is valid **on average 37%** of the time REGARDLESS of which way you look at it – from single partnership point of view or from the "classic" point of view where the SUM of the two best fits of the 2 pairs is calculated.

Note also that the percentages for the BIG numbers (12, 13 tricks) are twisted by the fact that those happen rarely – and when they DO happen, you know what to do anyway...

If you care to calculate the percentage of **"plus or minus 1" trick** (for example with SUM equal to 17, taking 16 + 17 + 18 tricks), this "New Law" is valid **not 37%** of the time, but **~85% !**

Now that we know how the Law of Total Tricks actually applies in the "neutral" zone of 19 to 21 HCP in either side, let's have a look at the picture where there is no limitations imposed on either side. Here is the table – results from 1,000,000 boards played in Double-Dummy both directions:

Contract Level Dependencies in Percentages – no HCP limits

Tricks	6-	7	8	9	10	11	12	13	Total
6-	0.0	0.1	1.1	3.0	4.8	**5.0**	3.4	1.1	***18.5***
7	0.1	1.1	2.5	3.6	**3.4**	2.1	0.9	0.2	***13.8***
8	1.1	2.5	3.9	**4.1**	3.2	1.7	0.6	0.1	***17.2***
9	3.0	3.5	**4.2**	3.6	2.3	1.0	0.3	0.1	***17.8***
10	4.8	**3.4**	3.2	2.2	1.2	0.4	0.1	0.0	***15.3***
11	**5.0**	2.2	1.7	1.0	0.4	0.2	0.0	0.0	***10.5***
12	3.4	0.9	0.6	0.3	0.1	0.0	0.0	0.0	***5.4***
13	1.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	***1.5***
Totals	***18.5***	***13.8***	***17.2***	***17.9***	***15.3***	***10.5***	***5.3***	***1.5***	***100.0***

There are several observations that are worthwhile mentioning. The average % is 4%, but relative to the average Total of 16% (last column), you see that it constitutes **25%** of the average total, meaning that typically you expect to have **17 tricks at the table**. That's the top percentage which in turn means that **the part-score zone** is really competitive – when you have 9 tricks the most probable amount of tricks your opponents have is 8, when you have 8, the most probable amount of tricks for your opponents is 9. So ... it's a wild zone them part scores...

The Law of a Priori Total Tricks

The most probable number of Total Tricks at the table **prior** to any bidding is **17.**

It also tells you that chances for you to have part-score are GOOD when opponents tend to try to steal the play at a very low level (like 1 NT for example). You **have to balance**, unless you have some special considerations. If you look at the **8-trick** column, you will see that chances for your opponents NOT having at least 8 tricks are 1.1 + 2.5 = 3.6%. A **miserable 3%**!

Did I get you here? Just checking if you are paying attention.

It IS 3.6% of the TOTAL boards, though. However, we have a **conditional probability**, the condition being that we already have 8 tricks on our side, so we have to calculate the ratio of **3.6 / 17.2** (the Total for the column) which comes to **20%.** This still means that 80% of the time your opponents would have at least a Level 2 contract themselves. NOTE again, that we actually count Level 2 **OR BETTER** for them, rather than ONLY Level 2.

If we move one level up, the picture changes a bit. Chances for opponents to have the same level or better contract are (3.6 + 2.2 + 1.0 + 0.3 + 0.1) / 17.9 = 7.2 / 17.9 = **40%.**

That is 2 times less than the 80% for Level 2.

Same calculation at level 4 (10 tricks) looks like that: (1.2 + 0.4 + 0.1) / 15.3 = 11% or in order to remember if easier, you can consider it **10%** of the time. So the rule to take home is:

1) When we have **Level 2** contract, opponents have the same Level 2, **80%** of the time.

2) When we have **Level 3** contract, opponents have the same Level 3, **40%** of the time.

3) When we have **Level 4** contract, opponents have the same Level 4, **10%** of the time.

Looking at rule 3), you probably notice that this isn't the right question to ask when you have a Game in 4S for example.

The question that you want answered is "Do the opponents have a **good sacrifice**". When you think about it, is the SAME question we were concerned about when considering the part-score contracts, only then the "sacrifice" translated to "Stealing the part-score".

The right question is what the chances are for them having a **Level 2 and Level 1** part score contracts, which constitutes good sacrifice - Level 2 in equal vulnerability, Level 1 in vulnerability favorable for them.

And here are the answers:

1) When we have **10 tricks**, chances for the opponents to have Level 2 contract OR MORE is 7.3 / 15.3 = 48% or for all practical purposes you can remember **50%**.

2) When we have **10 tricks**, chances for the opponents to have Level 1 contract OR MORE is 10.6 / 15.3 = 69% or for all practical purposes you can remember **70%**.

So in **favorable** vulnerability your opponents' chances to have a successful sacrifice against a Game are a good **70%** !

You probably know Zia's rule that the most underused bidding tool is the **penalty double**, and as we have been able to see, that IS a valid statement for **part-scores**, but is hardly valid for sacrifices against Game where statistically your success-chances are 70%.

Especially when you are vulnerable, competing at Level 3 should be very well thought-out decision, because opponents may pull-out "**Zia's sword**" AND succeed 60% of the time, as point 2) at the top of the page tells us.

Note **how** we can utilize these numbers when you use Zar Points. If partner opens 1H and I have fit and 21 Zar Points, I know we have a contract at Level 3 in Hearts since 26 + 21 = 47 Zar Points needed for Level 3.

But I also know that opponents' chances of NOT having a Level 3 contract are **60%**, chances for having Level 3 contract are **20%** and their chances for having Level 4 and beyond are another **20%.**

What is the situation at the **slam level**?

1) If we have **12 tricks** chances the opponents to have **7 tricks** or more is 1.9 / 5.3 = **35%** approximately.

2) If we have **12 tricks** chances the opponents to have **8 tricks** or more is 1.0 / 5.3 = **20%** approximately.

This basically gives you the chances of the opponents to have a good sacrifice against you slam.

And if we have a **GRAND**, opponents chances of collecting **more than 8 tricks is about 10%.**

All easy numbers to remember.

The Law of Double-fit Total Tricks

We already know how The Law of Total Tricks sits in terms of the total tricks at the table when both sides have a fit, It is interesting to see how The Law behaves when both sides have a DOUBLE fit. We know from the Zar Fits Theorem that **double-fits for both sides are equal**, meaning that when we have N cards in 2 suits, the opponents have the same amount of N cards in the other 2 suits. But what are the chances of making X amount of tricks in this DOUBLE-fit situation? We will consider that for a double-fit of 16, then 17, etc. Here are the tables in percentage. EW is plotted vertically, NE is plotted horizontally.

Double Fit of 16 Percentages

Tricks	7	8	9	10	11	12	13	
7	0.0	1.1	6.6	**9.7**	3.9	0.6	0.0	***22***
8	1.1	7.4	**11.9**	5.4	1.2	0.1	0.0	***27***
9	6.5	**11.6**	6.8	1.6	0.2	0.0	0.0	***27***
10	**9.6**	5.8	1.6	0.4	0.0	0.0	0.0	***17***
11	4.3	1.2	0.3	0.0	0.0	0.0	0.0	***6***
12	0.6	0.1	0.0	0.0	0.0	0.0	0.0	***1***
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	***0***
	22	***27***	***27***	***17***	***5***	***1***	***0***	***100***

The peak by far is around **17** TOTAL Tricks – 1 more than the value **16** of the Double Fit. If we find the ratio between the average **11 %** and the Column Total average of **22%** we arrive at a probability of **50%.**

The Law of Double Fit Total Tricks

As we will see, the most probable **TOTAL NUMBER of TRICKS** is **N + 1** where **N** is the number of cards of the Double Fit.

Here are the other tables – the **N + 1** is highlighted.

Double Fit of 17 - Percentages

Tricks	7	8	9	10	11	12	13	
7	0.0	0.0	0.5	2.8	**5.2**	3.1	0.6	***12***
8	0.0	0.5	3.6	**7.8**	5.5	1.6	0.2	***19***
9	0.5	3.8	**8.8**	7.7	2.9	0.6	0.0	***24***
10	2.9	**7.6**	7.7	3.6	0.9	0.1	0.0	***23***
11	**5.5**	5.6	3.0	0.8	0.1	0.0	0.0	***15***
12	3.4	1.7	0.5	0.1	0.0	0.0	0.0	***6***
13	0.5	0.2	0.0	0.0	0.0	0.0	0.0	***1***
	13	***19***	***24***	***23***	***15***	***5***	***1***	***100***

The peak by far is around **18** TOTAL Tricks – 1 more than the value **17** of the Double Fit.

Double Fit of 18 - Percentages

Tricks	7	8	9	10	11	12	13	
7	0.0	0.0	0.0	0.3	1.6	3.3	1.0	***6***
8	0.0	0.0	0.3	2.5	**5.4**	4.0	0.8	***13***
9	0.0	0.3	2.7	**6.9**	6.5	2.8	0.4	***20***
10	0.3	2.4	**7.2**	8.8	4.8	1.3	0.2	***25***
11	1.8	**5.5**	7.2	4.9	1.7	0.3	0.0	***21***
12	**3.2**	4.0	2.9	1.5	0.2	0.0	0.0	***12***
13	1.3	1.0	0.5	0.1	0.0	0.0	0.0	***3***
	7	***13***	***21***	***25***	***20***	***12***	***3***	***100***

The peak by far is around **19** TOTAL Tricks – 1 more than the value **18** of the Double Fit. And the picture stays steady even as we go further up to 19, 20 etc. Total Tricks.

We will present only the next two – 19 and 20 cards Double Fits – since as we approach the extreme values of Double Fits, the cases become more and more rare and the information gets twisted. Here are the last two tables:

Double Fit of 19 - Percentages

Tricks	7	8	9	10	11	12	13	
7	0.0	0.0	0.0	0.0	0.0	1.2	1.0	***2***
8	0.0	0.0	0.0	0.4	1.9	3.6	**2.1**	***8***
9	0.0	0.0	0.3	2.7	5.9	**5.2**	1.6	***16***
10	0.0	0.2	2.6	8.2	**8.5**	4.4	1.0	***25***
11	0.2	1.7	7.0	**8.5**	6.2	1.8	0.2	***26***
12	1.3	4.4	**5.7**	4.7	2.1	0.2	0.1	***19***
13	0.8	**1.8**	1.7	0.4	0.3	0.0	0.0	***5***
	2	***8***	***17***	***25***	***25***	***16***	***6***	***100***

Double Fit of 20 - Percentages

Tricks	**7**	**8**	**9**	**10**	**11**	**12**	**13**	
7	0.0	0.0	0.0	0.0	0.0	0.0	1.3	***1***
8	0.0	0.0	0.0	0.0	0.0	1.6	1.3	***3***
9	0.0	0.0	0.0	0.6	4.3	4.8	**3.4**	***13***
10	0.0	0.0	0.5	3.0	6.9	**4.0**	2.6	***17***
11	0.0	0.3	2.6	7.4	**12.5**	5.3	1.6	***30***
12	0.0	2.7	6.1	**8.0**	7.9	1.4	0.3	***26***
13	0.6	1.3	**3.0**	3.4	1.1	0.0	0.0	***9***
	1	***4***	***12***	***22***	***33***	***17***	***10***	***100***

So when you know the number of cards **(N)** you expect to have in your two best fits, you also know that the expected Total Number of Tricks at the table is **(N + 1).**

And do not forget the other important average number we found out – the expected number of Total Tricks at the table when you **do not have any additional information** (that is right before the bidding even starts). It is the "**a priori**" average number of **17 Total Tricks** at the table, giving you the "right" to fight for the part score.

A final word about the "other side of the coin" of using this information – passing at a lower level with a "close-to-game' values, expecting the opponents to balance. In a sense it is a "**trap-pass**" against BOTH opponents, after which you pull-out the "Zia's sword" and collect a hefty penalty double.

Besides being a probability game, bridge is a heavy-duty "cat-and-mouse" game where psychology and "reading the opponent" play a role as vital as you theoretical knowledge and technical skills needed to succeed.

Performance considerations

It is a natural question to ask what kind of performance you get out of utilizing Zar Points vs. some popular methods like Losing Trick Count, Goren, etc.

The critical question here is how well it behaves at the border between Part-score and Game, the border between Game and Slam, and the border between Slam and GRAND.

Since the 3-million-boards database have been played in BOTH directions NS and EW, we have the best contracts in each direction (which we actually used in The Law of Total Tricks and The Law of Double-fit Total Tricks research, for example). We went ahead and collected all the boards out of the 1 million that have a Part-score in Spades, then Game in Spades, then Slam in Spades, and at the end GRAND in Spades. The goal was to check the behavior of Losing Trick Count (LTC), Goren, Winning Trick Count (WTC), Lawrence, Bergen, and Zar **at the borders** of Part-score, Game, Slam, and GRAND and see which one would be a winner in a match of a total of **105,535 boards**:

- 37,691 Part-scores, Level 3 (9 tricks in Spades);
- 56,019 Games, Level 4 and 5 (10 or 11 tricks in Spades);
- 8,750 Slams, Level 6 (12 tricks in Spades);
- 3,075 GRANDS, Level 7 (13 tricks in Spades);.

The numbers you see above (since they are numbers out of 1 million boards) actually give you the probability for having a Part-score, a Game, a Slam, and a GRAND in Spades **only** and considering **only** boards where you have a **play above Level 2** (obviously, the same numbers are valid for Hearts, for example). We mention the proportion at the end of this section.

It all boils down to **overbidding and underbidding**. In other words we will take first ALL the boards in the database that gave a part-score in Spades and see how many of them Zar Points will OVERBID to Game (or higher), than the same for LTC, Goren, etc.

After that we will get all the Games in Spades and see how many of those boards Zar Points will UNDERBID to a part-score, than the same for LTC, Goren, etc. This "border condition" is 52 Zar Points, 10 LTC points, 26 Goren Points, 10 WTC points, 10 Lawrence Points (LP), and 40 Bergen Points (BP).

This way we will have a CLEAR answer to the question what happens at the Game/Part-score "border". In a similar way we will find the answer to the Game/Slam question (that "border condition" is 62 Zar Points, 12 LTC points, 32 Goren Points, 12 WTC, 12 LP, 48 BP) and at the end to the Slam/GRAND question (that "border condition" is 67 Zar Points, 13 LTC points, 35 Goren Points, 13 WTC, 13 LP, and 52 BP).

Fair enough? Nowhere to hide...

Here is how we calculate the points.

1) ZPB (Zar Points):

Use the classic Zar Points HCP + CTRL + (a+b) + (a-d). No fit adjustments, no short - honors deductions, no misfit adjustments. Need 52 for Game and 5 points per Level.

2) ZPR (Zar Points with Ruffing Power):

Use Zar Points HCP + CTRL + (a+b) + (a-d) with fit adjustments according to the Zar Ruffing Power points for super-fit (0 with 4333, 1 with side doubleton, 2 with side singleton, and 3 with side void. No short-honors deductions, no misfit adjustments. Need 52 for Game and 5 points per Level.

3) ZP3 (Zar Points + 3 points per super-trump):

Use Zar Points HCP + CTRL + (a+b) + (a-d) with fit adjustments, 3 points for any super-trump. No short-honors deductions, no misfit adjustments. Need 52 for Game and 5 points per Level.

4) GP (Goren Points):

Use the classic 3-2-1 points for void, singleton, and doubleton correspondingly. Add 1 point for having all 4 Aces in a hand. Deduct 1 point for having a flat 4-3-3-3 distribution. Need 26 Goren Points for a Game, and use 3 points per level (as with WTC and Lawrence below).

5) BP (Bergen Points):

Use the classic Bergen Rule: HCP + (a + b) with 40 Bergen Points needed for a Game (2 opening hands of 20 points) and 4 points per level.

6) LTC (classic Losing Trick Count):

Use the "Classic LTC" as in the book of Ron Klinger. Example: AQx is 1 loser.

7) LTM (Modern Losing Trick Count):

Use the "Modern LTC" as in the book of Ron Klinger. Example: AQx is 1 ½ losers.

8) WTC (Winning Trick Count):

The method of Harry Freeman (WTC - www.jhfreeman.freeserve.co.uk) and Willie Jago (The Trick Ratio Principle) – it is the same method by two different authors. Use the following HCP table for the combined HCP holding of the partnership:

Our Total Point Count	***Our expected balance of Point-Count Tricks***
37 - 40	**6**
34 - 36	**5**
31 - 33	**4**
28 - 30	**3**
25 - 27	**2**
22 - 24	**1**
19 - 21	**0**
16 - 18	**-1**
13 - 15	**-2**
10 - 12	**-3**
7 - 9	**-4**

Add this ***balance of point count tricks*** to our **combined holding of trumps**. So with 24 HCP and 9-card fit in spades we have 1 + 9 = 10 tricks or a Game at 4S.

9) MLP (Mike Lawrence Points):

Use the WTC table above, but instead of adding the total number of trumps, add the amount of (13 – d1 – d2) where d1 and d2 are the shortest suits in the 2 hands of the partnership. This is the definition in Mike's latest book (Lawrence/Wirgren, "I fought the Law of Total Tricks"). So with 24 HCP, fit in spades, and a doubleton in each of the 2 hands we have 1 + (13 – 2 – 2) = 10 tricks or a Game at 4S.

For the purposes of the study we will consider that all boards are vulnerable, overbid means contract goes one down not doubled, which in turn means that:

- underbidding a Game costs 10 IMPs;
- overbidding a part-score to a Game costs 6 IMPs;
- underbidding a Slam costs 13 IMPs;
- overbidding a Game to a Slam costs 13 IMPs;
- underbidding a GRAND costs 13 IMPs;
- overbidding a Slam to a GRAND costs 17 IMPs;

And for each of the 9 methods we will calculate the absolute cost in IMPs - simple and straightforward procedure. One important note – why are we considering ONLY the **Level 3 part-scores** and not Levels 1 and 2? The Law of a Priory Total Tricks tells you that because of the a priory number of **17 tricks**, if you have a level 1 or 2 contract, you will either be pushed to Level 3 OR the opponents will grab the contract in their suit.

Let us start with the Part Score vs. Game on the Game side – this means we take ALL the 4S contracts where Double-Dummy indicates 10 or 11 tricks in Spades, and look how many of those would be bid in Part-score (underbid) and how many will be bid correctly in Game by Zar Points (<52 or >= 52), Goren (<26 or >= 26), LTC (<10 or >=10), etc.

Here is the first set, Parts-cores and Games, the **Game Border (Aggressive, < 22 HCP)**:

DD - Spade Games w/ 10-11 Tricks

	UNDER Bid		GAME Bid		Total		
						378602	DD - boards w/ 22+ HCP
ZPB	7387	47.2%	8265	52.8%	15652	458856	DD - Less than 8 Spades
ZPR	3154	20.2%	12498	79.8%	15652	75511	DD - Less than 8 Tricks
ZP3	2445	15.6%	13207	84.4%	15652	9874	DD - Minor > Spade tricks
GP	13088	83.6%	2564	16.4%	15652	4667	DD - Heart > Spade tricks
BP	13462	86.0%	2190	14.0%	15652	1139	DD - 3NT or NT > Spade tricks
LTC	6106	39.0%	9546	61.0%	15652	54934	DD - Less than 10 Spade tricks
LTM	7629	48.7%	8023	51.3%	15652	765	DD - More than 11 Spade tricks
WTC	12362	79.0%	3290	21.0%	15652	0	DD - Opponents Quick Tricks
MLP	3241	20.7%	12411	79.3%	15652	15652	DD - 10 or 11 Spade tricks

DD - Exactly 9 Tricks in Spades

	PartScr Bid		OVER Bid		Total		
						378602	DD - boards w/ 22+ HCP
ZPB	18592	77.1%	5515	22.9%	24107	458856	DD - Less than 8 Spades
ZPR	13436	55.7%	10671	44.3%	24107	75511	DD - Less than 8 Tricks
ZP3	11039	45.8%	13068	54.2%	24107	9874	DD - Minor > Spade tricks
GP	23000	95.4%	1107	4.6%	24107	4667	DD - Heart > Spade tricks
BP	23196	96.2%	911	3.8%	24107	1139	DD - 3NT or NT > Spade tricks
LTC	16218	67.3%	7889	32.7%	24107	30827	DD - Less than 9 Spade tricks
LTM	18220	75.6%	5887	24.4%	24107	16417	DD - More than 9 Spade tricks
WTC	21845	90.6%	2262	9.4%	24107	0	DD - Opponents Quick Tricks
MLP	12145	50.4%	11962	49.6%	24107	24107	DD - Exactly 9 Spade tricks

You probably have already noticed that the number of Games is 15,652 rather than the "promised" amount of 56,019 Games. This is because of the restriction for "aggressiveness", meaning that the HCP amount should be below 22 HCP.

So as a side effect we see that out of the 56K Games, 16K are aggressive – that's about **30% of the time.**

You also see that the "most aggressive" methods score very well on BIDDING a Game, somewhere between 80 and 85% of the time, but also very poorly on the "overbidding side" of the story (some 50 to 55% of the time).

So let's see how all this translates into IMPs lost.

	UNDER Bid	GAME Bid	IMPs lost
ZPB	7387	8265	73,870
ZPR	3154	12498	31,540
ZP3	2445	13207	24,450
GP	13088	2564	130,880
BP	13462	2190	134,620
LTC	6106	9546	61,060
LTM	7629	8023	76,290
WTC	12362	92,220	123,620
MLP	3241	12411	32,410

	Part Score	OVER Bid	IMPs lost	IMP	Place
ZPB	18592	5515	33,090	**106,960**	**4**
ZPR	13436	10671	64,026	**95,566**	**1**
ZP3	11039	13068	78,408	**102,858**	**2**
GP	23000	1107	6,642	**137,522**	**8**
BP	23196	911	5,466	**140,086**	**9**
LTC	16218	7889	47,334	**108,394**	**5**
LTM	18220	5887	35,322	**111,612**	**6**
WTC	21845	2262	13,572	**137,192**	**7**
MLP	12145	11962	71,772	**104,182**	**3**

One observation that comes to mind immediately is that the most conservative methods lose most. Goren and Bergen who score only around 1,000 overbids compared to over 10,000 for the top-3 methods are at the bottom of the scale of lost IMPs.

Since this table contains the number of boards in every category, from now on we are going to present only this types of table and will skip the first tables with the percentages.

However, on the Website WWW.ZarPoints.COM you will find an Excel Spreadsheet that contains detailed information, plus all the boards participating in this virtual match.

The reason we included 3 types of Zar Points was:

1) to study the effect of assigning points for super-trumps (above 8-card fit);
2) to see if it is worth the effort of calculating the Zar Ruffing Power of 3-2-1-0 points or if it is OK to directly assign 3 points for extra trump.

So far we see that you should assign points for extra trumps, and the best way to do that is via the **Zar Ruffing Power of 3-2-1-0**. As we will see, this method stays constantly #1 from any perspective and in any category and sub-category.

Let's now move to the Slam category for Aggressive Bidding – with less than **28 HCP.**

	UNDER Bid	SLAM Bid	
ZPB	2897	1284	37,661
ZPR	1723	2458	22,399
ZP3	1398	2783	18,174
GP	3660	521	47,580
BP	4160	21	54,080
LTC	2513	1668	32,669
LTM	2720	1461	35,360
WTC	3546	635	46,098
MLP	1235	2946	16,055

	Game or Less	OVER Bid		IMP	Place
ZPB	6551	830	10,790	**48,451**	**2**
ZPR	5324	2057	26,741	**49,140**	**1**
ZP3	4758	2623	34,099	**52,223**	**6**
GP	7133	248	3,224	**50,804**	**5**
BP	7372	9	117	**54,197**	**8**
LTC	5997	1384	17,992	**50,661**	**4**
LTM	6278	1103	14,339	**49,669**	**3**
WTC	6892	489	6,357	**52,455**	**7**
MLP	3966	3415	44,395	**60,450**	**9**

You see how precise the 3-2-1-0 Ruffing Power is and how overblown the 3-points-per-trump is.

Trump length matters, but its power depends on the side shortness.

Another observation is that The Losing Trick Count scores much better here – places 3 and 4 respectively.

Contrary to the popular belief, the LTC is a very old method – it was introduced in **1936** by Doudley F. Courtenay and in his classic LTC he considers AQx to be 1 loser, rather than 1 ½ losers as it is the "Modern Losing Trick Count". Rosenrkantz's ROMEX from the **1970-ies** just uses LTC and introduces the Cover Cards, rather than the LTC itself. You can see the problem arising from Cover Cards point of view when using Modern LTC – if your partner has Kxxx against your AQx, he should count his K for 1 ½ Cover Cards ! Kind of too much, eh ...

Let's now move to the GRAND slam area for aggressive bidding, with less than **31 HCP**.

Here are the tables:

	UNDER Bid	GRAND Bid	
ZPB	1378	431	17,914
ZPR	874	935	11,362
ZP3	718	1091	9,334
GP	1579	230	20,527
BP	1807	2	23,504
LTC	1223	586	15,899
LTM	1295	514	16,835
WTC	1574	235	20,462
MLP	610	1199	7,930

	Slam or Less	OVER Bid		IMP	Place	IMP TOTAL	Place TOTAL
ZPB	2724	204	3,468	**21,382**	**1**	**176,793**	**2**
ZPR	2333	595	10,115	**21,477**	**2**	**166,183**	**1**
ZP3	2127	801	13,617	**22,951**	**6**	**178,032**	**3**
GP	2840	88	1,496	**22,023**	**3**	**210,349**	**7**
BP	2927	1	17	**23,512**	**8**	**217,795**	**9**
LTC	2549	379	6,443	**22,342**	**5**	**181,397**	**4**
LTM	2614	314	5,338	**22,173**	**4**	**183,454**	**5**
WTC	2775	153	2,601	**23,063**	**7**	**212,710**	**8**
MLP	1728	1200	20,400	**28,330**	**9**	**192,962**	**6**

Here on the right-hand side you see the total amount of IMPs lost and the place of each of the 9 participants.

Zar Points Ruffing Power (ZPR) is ahead of Zar Points Base (ZPB) by more than **10,000** IMPs and ahead of Zar Points Supertrump3 (ZP3) by some **12,000** IMPs.

The Modern **LTM** is a distant **#4**, losing by more than **17,000** IMPs to Zar Points - Ruffing.

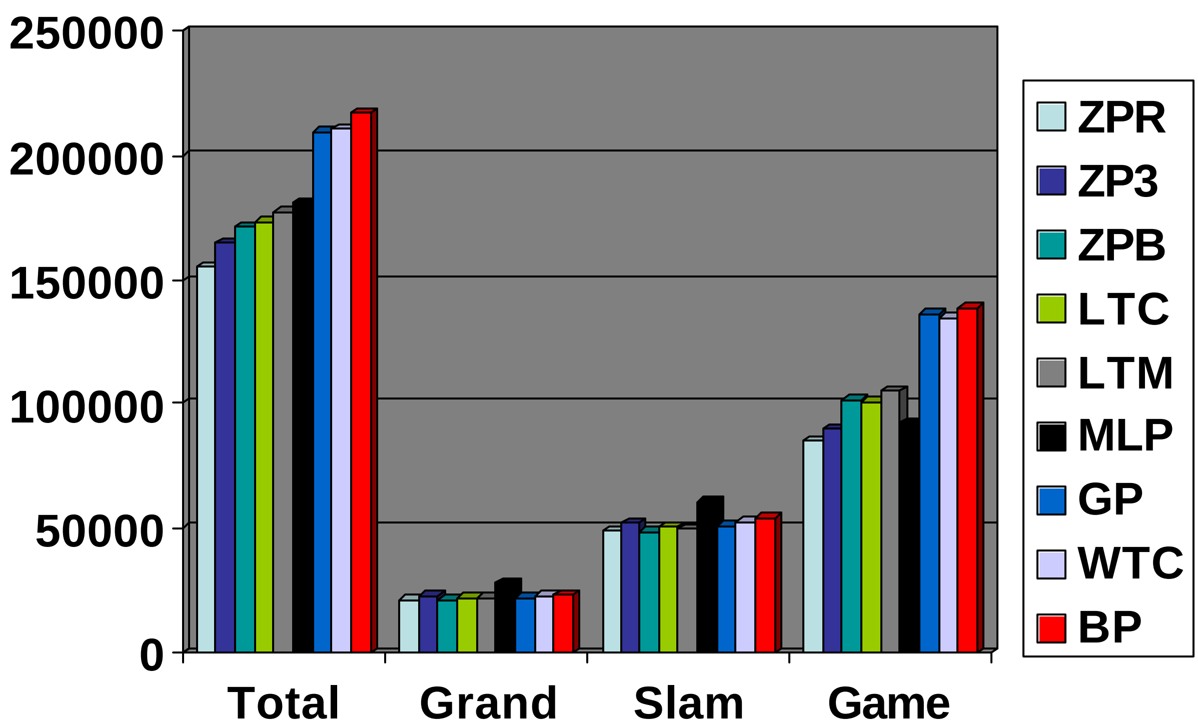
The Classic LTC (**LTC**) is **#5**, with approximately the same amount of IMPs as LTM.

Since Bergen falls last, I'd like to explicitly mention again, that the Berger method is based on the **Rule of 20** and is NOT actually meant to be a bidding method – rather, it is used here based on the Culbertson's rule that "Two Opening Hands make a Game".

Hence, we use 40 Bergen Points to determine that there is a Game for 10 tricks. And since 40 Bergen points make 10 tricks, we use 4 points per Playing Level. This is the only method we use, which is not originally meant to evaluate Game/Slam prospects.

Here is a graphical representation of the results for Aggressive Bidding:

Aggressive Bidding Table (Grand < 31, Slam < 28, Game <22)



So in the aggressive section, the top-3 places are occupied by the 3 Zar Points methods, with the Zar Points Ruffing Power being consistently #1 in all categories.

Here is the second set, Parts-cores and Games, the **Game Border (Moderate, < 25 HCP)**:

	UNDER Bid	GAME Bid	
ZPB	9871	27212	98,710
ZPR	4701	32382	47,010
ZP3	3810	33273	38,100
GP	17952	19131	179,520
BP	18020	19063	180,200
LTC	12893	24190	128,930
LTM	16555	20528	165,550
WTC	22848	14235	228,480
MLP	4286	32797	42,860

	Part Score	OVER Bid		IMP	Place
ZPB	23372	12461	74,766	**173,476**	**3**
ZPR	16947	18886	113,316	**160,326**	**1**
ZP3	14072	21761	130,566	**168,666**	**2**
GP	29019	6814	40,884	**220,404**	**8**
BP	29150	6683	40,098	**220,298**	**7**
LTC	23181	12652	75,912	**204,842**	**5**
LTM	26445	9388	56,328	**221,878**	**6**
WTC	29828	6005	36,030	**264,510**	**9**
MLP	13963	21870	131,220	**174,080**	**4**

The picture doesn't change by much. Let's see the results in the **Slam area:**

	UNDER Bid	SLAM Bid	
ZPB	4228	3473	54,964
ZPR	2617	5084	34,021
ZP3	2161	5540	28,093
GP	4778	2923	62,114
BP	7085	616	92,105
LTC	4232	3469	55,016
LTM	4723	2978	61,399
WTC	5655	2046	73,515
MLP	1523	6178	19,799

	Game or Less	OVER Bid		IMP	Place
ZPB	7986	1445	18,785	**73,749**	**2**
ZPR	6501	2930	28,090	**62,111**	**1**
ZP3	5782	3649	47,437	**75,530**	**3**
GP	8368	1063	13,819	**75,933**	**4**
BP	9317	114	1,482	**93,587**	**9**
LTC	7502	1929	25,077	**80,093**	**5**
LTM	7904	1527	19,851	**81,250**	**6**
WTC	8357	1074	13,962	**86,477**	**8**
MLP	4350	5081	66,053	**85,852**	**7**

You have already seen that by far the biggest over-bidder is the new Lawrence's method.

	UNDER Bid	GRAND Bid	
ZPB	1776	1014	23,088
ZPR	1124	1666	13,612
ZP3	927	1863	12,051
GP	1839	951	23,907
BP	2723	67	35,399
LTC	1710	1080	22,230
LTM	1832	958	23,816
WTC	2118	672	27,534
MLP	679	2111	8,827

May be now is the time to mention that for ALL the methods, **Blackwood** is used to check for 2 or 1 quick tricks by the defense.

Let's move to the GRAND slam area of Moderate Bidding (**HCP < 34**).

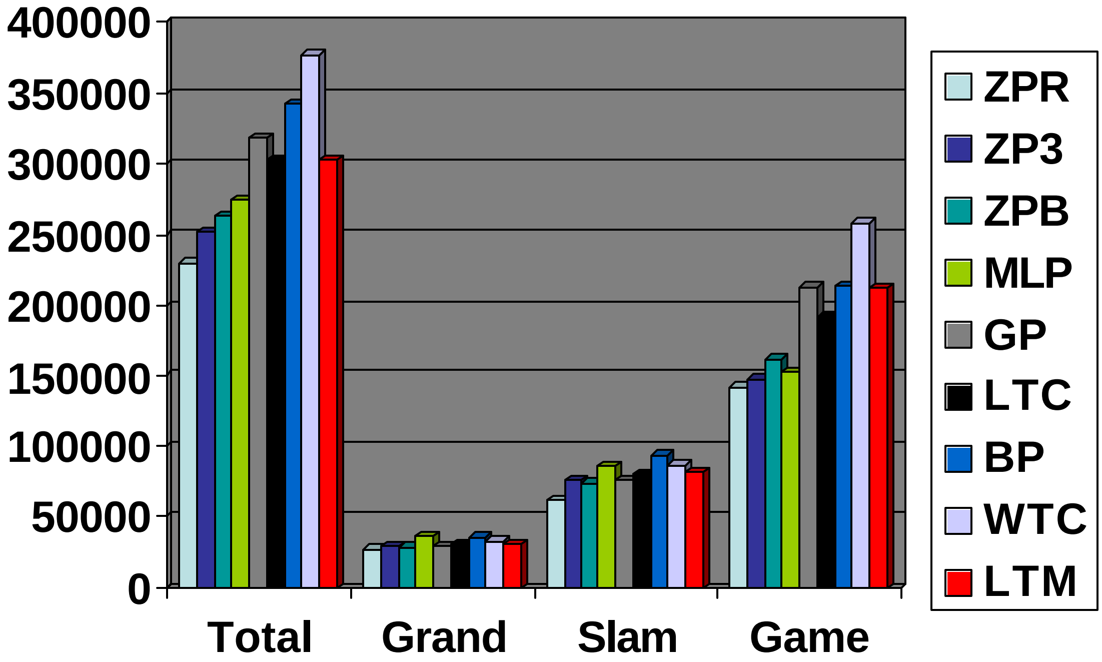
	Slam or Less	OVER Bid		IMP	Place	IMP TOTAL	Place TOTAL
ZPB	3105	319	5,423	**28,511**	**2**	**275,736**	**3**
ZPR	2642	782	13,294	**26,906**	**1**	**249,343**	**1**
ZP3	2388	1036	17,612	**29,663**	**4**	**273,859**	**2**
GP	3134	290	4,930	**28,837**	**3**	**325,174**	**6**
BP	3420	4	68	**35,467**	**8**	**349,351**	**8**
LTC	2947	477	8,109	**30,339**	**5**	**315,274**	**5**
LTM	3029	395	6,715	**30,531**	**6**	**333,659**	**7**
WTC	3115	309	5,253	**32,787**	**7**	**383,774**	**9**
MLP	1810	1614	27,438	**36,265**	**9**	**296,297**	**4**

So in the moderate section, the top-3 places are again occupied by the 3 Zar Points methods, with the Zar Points Ruffing Power being consistently #1 in all categories.

You see that while Lawrence has been #6 in the Aggressive area surpassed by both LTC and LTM, he now moved to #4 in the Moderate Bidding area, while at the same time it remains the #1 over-bidder throughout – just another proof that **aggressive style pays off**.

Let's now plot the Moderate Bidding results in a graphical chart and then we will move to the General Bidding area, where there will be no restrictions of the HCP power whatsoever.

Moderate Bidding Table (Grand < 34, Slam < 31, Game <25)



In the General Bidding section we will again start with Game Tables.

You understand that this section includes ALL of the previous cases – the boards that participated in the Aggressive Bidding section AND the ones in the Moderate Bidding section.

	UNDER Bid	GAME Bid	
ZPB	10052	45967	100,520
ZPR	4829	51190	48,290
ZP3	3937	52082	39,370
GP	18283	37736	182,830
BP	18024	37995	180,240
LTC	16818	39201	168,180
LTM	22366	33653	223,660
WTC	22848	33171	228,480
MLP	4307	51712	43,070

	Part Score	OVER Bid		IMP	Place
ZPB	23560	14131	84,786	**185,306**	**4**
ZPR	17085	20606	123,636	**171,926**	**1**
ZP3	14208	23483	140,898	**180,268**	**2**
GP	29279	8412	50,472	**233,302**	**6**
BP	29165	8526	51,156	**231,396**	**5**
LTC	24156	13535	81,210	**249,390**	**7**
LTM	27664	10027	60,162	**283,822**	**9**
WTC	29828	7863	47,178	**275,658**	**8**
MLP	13994	23697	142,182	**185,252**	**3**

Now, the **Slam Tables**:

	UNDER Bid	SLAM Bid	
ZPB	4340	4410	56,420
ZPR	2694	6056	35,022
ZP3	2234	6516	29,042
GP	4819	3931	62,627
BP	7336	1414	95,368
LTC	4615	4135	59,995
LTM	5213	3537	67,769
WTC	5655	3095	73,515
MLP	1525	7225	19,825

	Game or Less	OVER Bid		IMP	Place
ZPB	8061	1519	19,747	**76,167**	**2**
ZPR	6563	3017	39,221	**74,243**	**1**
ZP3	5839	3741	48,633	**77,675**	**3**
GP	8400	1180	15,340	**77,967**	**4**
BP	9411	169	2,197	**98,192**	**9**
LTC	7615	1965	25,545	**85,540**	**5**
LTM	8025	1555	20,215	**87,984**	**7**
WTC	8357	1223	15,899	**89,414**	**8**
MLP	4351	5229	67,977	**87,802**	**6**

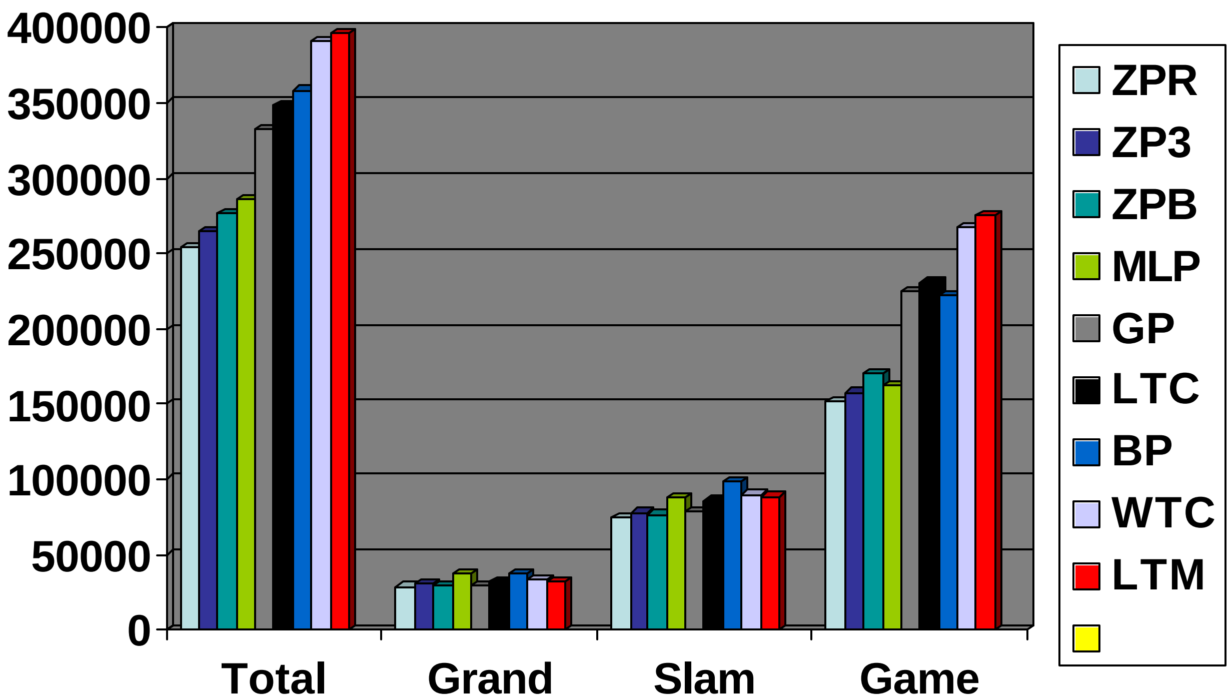
You now see how Lawrence jumps **from #3 to #6**, and we will see how the method goes **to #8** in the Grand Slam area due to over-overbidding – aggressiveness should also have its limits and should be controlled and measured. Clearly ZPR does the best job there, staying constantly at #1 regardless of category and subcategory, ahead of ZPB and ZP3.

	UNDER Bid	GRAND Bid	
ZPB	1815	1260	23,595
ZPR	1150	1925	14,950
ZP3	953	2122	12,389
GP	1843	1232	23,959
BP	2831	244	36,803
LTC	1796	1279	23,348
LTM	1942	1133	25,246
WTC	2118	957	27,534
MLP	680	2395	8,840

	Slam or Less	OVER Bid		IMP	Place	IMP TOTAL	Place TOTAL
ZPB	3123	337	5,729	29,324	2	290,797	3
ZPR	2659	801	13,617	28,567	1	274,745	1
ZP3	2404	1056	17,952	30,341	4	288,284	2
GP	3139	321	5,457	29,416	3	340,685	5
BP	3446	14	238	37,041	9	366,629	6
LTC	2968	492	8,364	31,712	5	366,642	7
LTM	3053	407	6,919	32,165	6	403,971	9
WTC	3115	345	5,865	33,399	7	398,471	8
MLP	1811	1649	28,033	36,873	8	309,927	4

In the General Section, the top-3 places are again occupied by the 3 Zar Points methods:

General Bidding Table (no HCP limitations)



If we have a look at the Moderate Chart (since it's in the "middle" of the spectrum), we can see that when we compare the 3 Zar Points methods with the group of the worst performers, then:

- In the Grand Slam Area:
  - Zar Points lost an average of ... 25,000 IMPs;
  - Worst Performers lost an average of ... 30,000 IMPS;

- In the Small Slam Area:
  - Zar Points lost an average of ... 75,000 IMPs;
  - Worst Performers lost an average of ... 90,000 IMPS;

- In the Grand Slam Area:
  - Zar Points lost an average of ... 150,000 IMPs;
  - Worst Performers lost an average of ... 270,000 IMPS;

This also gives you a perspective on WHERE you lose most IPMs percentage-wise. Since the ratio is almost the same, we will calculate it for the case of Zar Points, where the total loss of 250,000 IMPs is divided in 25,000 in the GRAND area, 75,000 in the Slam Area, and 150,000 in the Games areas, giving us:

- 10% in the Grand Slam area;
- 30% in the Small Slam area;
- 60% in the Game area.

and this "**importance factor**" of **60-30-10** is manifested in all the methods.

I cannot resist mentioning that in the Zar Points Bidding Backbone the coverage of Normal vs. Medium (1D opening) vs. Strong (1C opening) is exactly **60-30-10 too!**

In the same time the ratio between Games, Slams, and Grans (based on the number of corresponding boards out of 1,000,000 as declared in the beginning of the section) is **56,000 vs. 9,000 vs. 3,000** which comes to **80 – 15 - 5** approximately (**note** that part-scores are not included here). So this is exactly how often you should expect the Games, Slams, and GRANDS to come to you, if ignoring the part-scores.

There is plenty of comparison between Goren, Bergen and Zar (the entire Zar Bid Machine at WWW.ZarPoints.COM is devoted to these 3 methods) and LTC is a pretty straightforward and well-known method, so let's just say a few words about WTC and LP (Lawrence points). Both methods use the same table for calculating the influence of HCP-power, and both methods disregard the influence of both Controls and Distribution.

Here are a couple of typical pairs of hands that will shed light of the problems arising of ignoring Controls and Distribution:

8 HCP	11 HCP	10 trumps, 2 singletons, 19 HCP (0-table-point);
Axxxx	Kxxxx	WTC = 10 tricks, LP = 13 - 1 - 1 = 11 tricks
Axxxx	x	**WTC = Game, LP = Game**
x	Axxxx	ZP-W = 26, ZP-E = 30, and 2 supertrumps = 26+30+6= 62
xx	Ax	**ZP = Slam, Actual = Slam**

11 HCP	11 HCP	10 trumps, 2 singletons, 22 HCP (1-table-point)
Kxxx	QJxxx	WTC = 9+1= 10 tricks, LP = 1 + 13 - 1 - 1 = 12 tricks
x	KJx	**WTC = Game, LP = Slam**
KQJx	x	ZP-W = 23, ZP-E = 26, plus 1 supertrump = 22+26+3 = 51
Qxxx	KJxx	**ZP = Part-score, Actual = Part-score**

If you want to include LTC here just to complete the picture, here is the result. In the first board LTC scores W = 2 + 2 + 1 + 2 = 7, E = 2 + 1 + 2 + 1 = 6, tricks = 24 – 7 – 6 = 11 tricks, that is Game. In the second case LTC scores W = 2 + 1 + 1 + 2 = 6, E = 2 + 2 + 1 + 2 = 7, tricks = 24 – 6 – 7 = 11, **SAME** result of 11 tricks for the both boards – I'd say "shame results" rather than "same results" when one is a **part-sore** while the other is a **lay-down slam**:

ACTUAL	**LTC**	**LP**	**WTC**	**ZP**
Part-score	Game	Slam	Game	Part-score
Slam	Game	Game	Game	Slam

You also notice the huge potential for Lawrence Points to overbid – playing the part-score in a Slam.

And this picture is confirmed by the results of the match also – super aggressiveness or super-conservativeness to a point of being out of touch with reality while Zar Points show aggressiveness where there IS a basis for being aggressive – with good Distribution and Controls, and conservativeness when you lack both of these.

The simple examples above demonstrate the difference, although by now you should be convinced that Controls and Distribution matter – otherwise you have wasted your time reading the Zar Points books (shame on me).

Performance optimizations

The “match” between the 9 methods in the previous section addresses the performance considerations from a “plain bridge” point of view. It is something that everyone playing bridge understands. In this section we will address the issue of optimizing the methods via the results from the same “match” – that is we will study the performance of these 9 most popular methods from math and stat viewpoint. We will study the main statistical characteristics like Mean, Variance, Standard Deviation, Mode etc. and see how the 9 methods behave; then we will try to optimize that behavior.

Let’s have a one-page **crash-course** on statistics for “normal people” first, so everyone can follow the developments.

The **Max** and **Min** are the corresponding maximum and minimum values within the observation set and determine the **Range** of the observed values. A simplistic view on the **Median** is the middle between the Max and Min (in fact it’s the point from which 50% are higher and the other 50% are lower). The **Mean (Average)** is the sum of the observed values divided by their number and is used to calculate the central tendency of an observation, while the **Variance** is a measure of how **spread** out the observed data is – it is the average of the squared deviations from the **Mean**, engendering that the unit of measure is also squared. Taking the square root of the variance gets us back the units used in the original scale (tricks in our case) and results in **standard deviation (STD).** Standard deviation tells you how tightly a set of values is clustered around the average of those same values. It's a measure of **dispersal, or variation**, in a group of numbers. Since STD measures **spread around the mean**, for data with the same mean, the greater the spread, the greater the standard deviation - if on the other hand all the values are the same, then the mean equals this “same” value and the STD is 0 (the absolute min). **Err of Mean** or **Coefficient of Variation** gives us some sense of how much the **Average** represents the set of numbers it comes from – it is the **Standard Deviation / Mean.** Finally, the **Mode** is the most frequent value in the observation set.

For discrete values (like tricks in our case), measuring the above summary statistics is typically done via **Frequency Tables.** Here is the frequency table for Goren Points (rows for only 26 and 27 shown) where the columns are the possible tricks taken with the corresponding points for that row (numbers are for demo-purposes only and do not match the percentages in reality, as we will see in the actual tables with the stat summaries):

Goren	9 tricks	10 tricks	11 tricks
26	50%	50%	0%
27	22%	73%	5%

Now the squared deviations are **multiplied by each frequency's value**, and then the total of these results is calculated before **dividing to the sum of the frequencies**. Let us see how all this works based on the example Goren table of 2 rows above. Pay special attention to the Variance calculation.

Max = 10 tricks
Min = 9 tricks
Mean = (50*9 + 50*10) / 100= 9.50 tricks
Var = [(9.5 – 9)**2*50 + (10 – 9.5)**2*50]/100 = [12.5 + 12.5]/100 = 0.25 tricks**2
STD= SQRT(0.25) = 0.5 tricks (rather than tricks**2 – you don't measure distance in square ft, right?)
Mode = 9
Err = 0.5 / 9.5 = 0.05

Max = 11 tricks
Min = 9 tricks
Mean = 1/100 * (22*9 + 73*10 + 5*11) = 9.83 tricks
Var = 1/100* [(9-9.83)**2*22+(10-9.83)**2*73+(11-9.83)**2*5]=1/100*(15.16+2.11+6.84)=0.24 tricks**2
STD= SQRT(0.24) = 0.49 tricks
Mode = 10
Err = 0.49 / 9.83 = 0.05

So we obtain the following extended table:

Goren	9 tricks	10 tricks	11 tricks	Min	Max	Mean	Var	STD	Mode	Err
26	50%	50%	0%	9	10	9.50	0.25	0.50	9	0.05
27	22%	73%	5%	9	11	9.83	0.24	0.49	10	0.05

We will do these stat calculations for every point-amount of every method and compare the results.

The critical value that a good valuation system provides is in the boundaries of critical decisions – Game, Slam, GRAND. So we will address the behavior at these boundaries – the decisions around the 9.5 tricks (Game decision), 11.5 tricks (Slam decision), and 12.5 tricks (GRAND decision). After that we will see how we can use these findings to **tune-up** the methods depending on IMP vs. Match points, Vulnerable vs. Non-vulnerable etc.

We will study the Value of the Aces and Kings (rounded to 6 and 4 respectively now in Zar Points) and find the ones that minimize the STD thus maximizing performance. We will also see how we can **"squeeze" the STD** further by pushing the Variance towards the Mean, thus making the method optimized for precision. The way to do that is to study the influence of upgrading and downgrading considerations on the STD, like Concentration of HCP, Duplication of Distributional and Honor Values, short honors, honors in opponents' suits, etc. We will also play with different downgrades and compute their "real" value that optimizes the STD (the measure of methods "performance perfection"). For example, we would be able to say that "A Singleton Ace is worth a Downgrade of 2 Zar Points or 1 Goren Point and this adjustment reduce the initial STD by 6%." Similarly we would calculate the values of short honors, etc.

Let's start with Zar Points Basic (ZPB), followed by ZPR etc in the order we presented them in the "match"..

	-----	Tricks taken	-----						-----	Statistics	-----		
ZPB	**8**	**9**	**10**	**11**	**12**	**13**	**Min**	**Max**	**Mean**	**Var**	**STD**	**Mode**	**Err**
35	100.0	0.0	0.0	0.0	0.0	0.0	8	8	8.00	0.00	0.00	8	0.000
36	85.7	14.3	0.0	0.0	0.0	0.0	8	9	8.14	0.12	0.35	8	0.043
37	97.4	2.6	0.0	0.0	0.0	0.0	8	9	8.03	0.03	0.16	8	0.020
38	87.4	12.6	0.0	0.0	0.0	0.0	8	9	8.13	0.11	0.33	8	0.041
39	94.1	5.9	0.0	0.0	0.0	0.0	8	9	8.06	0.06	0.24	8	0.029
40	91.1	8.7	0.3	0.0	0.0	0.0	8	10	8.09	0.09	0.30	8	0.037
41	88.9	10.4	0.6	0.1	0.0	0.0	8	11	8.12	0.12	0.35	8	0.043
42	86.0	13.2	0.7	0.0	0.0	0.0	8	10	8.15	0.14	0.38	8	0.046
43	81.2	17.9	0.9	0.0	0.0	0.0	8	11	8.20	0.18	0.42	8	0.052
44	76.5	21.3	2.0	0.1	0.0	0.0	8	11	8.26	0.24	0.49	8	0.059
45	69.7	26.6	3.5	0.1	0.0	0.0	8	11	8.34	0.30	0.55	8	0.066
46	64.0	30.0	5.7	0.3	0.0	0.0	8	11	8.42	0.37	0.61	8	0.073
47	55.4	36.0	7.9	0.7	0.0	0.0	8	11	8.54	0.45	0.67	8	0.078
48	46.5	40.9	11.6	1.0	0.0	0.0	8	12	8.67	0.51	0.72	8	0.083
49	37.1	44.3	16.5	2.0	0.1	0.0	8	13	8.84	0.60	0.77	9	0.087
50	29.1	44.9	22.2	3.7	0.1	0.0	8	12	9.01	0.67	0.82	9	0.091
51	21.8	43.3	28.5	5.9	0.4	0.0	8	13	9.20	0.74	0.86	9	0.093
52	15.9	39.5	34.5	9.1	1.0	0.0	8	12	9.40	0.80	0.89	9	0.095
53	11.0	33.1	40.5	13.7	1.6	0.1	8	13	9.62	0.83	0.91	10	0.095
54	7.5	27.3	42.8	19.7	2.6	0.1	8	13	9.83	0.86	0.93	10	0.094
55	4.9	20.2	42.2	27.7	4.7	0.3	8	13	10.08	0.88	0.94	10	0.093
56	3.2	15.1	39.4	34.2	7.5	0.5	8	13	10.29	0.88	0.94	10	0.091
57	2.0	11.3	34.0	40.5	11.4	0.8	8	13	10.50	0.87	0.93	11	0.089
58	1.3	7.4	28.9	43.5	17.2	1.6	8	13	10.73	0.86	0.93	11	0.087
59	0.7	5.2	21.1	45.4	25.2	2.5	8	13	10.97	0.83	0.91	11	0.083
60	0.6	3.7	16.6	43.7	31.6	4.0	8	13	11.14	0.82	0.90	11	0.081
61	0.3	2.3	11.8	39.0	39.2	7.4	8	13	11.36	0.79	0.89	12	0.078
62	0.2	1.9	8.7	33.2	45.2	10.8	8	13	11.54	0.78	0.88	12	0.076
63	0.2	0.9	6.4	27.3	48.3	16.9	8	13	11.73	0.74	0.86	12	0.073
64	0.0	1.0	4.7	18.2	51.0	25.2	9	13	11.95	0.71	0.84	12	0.070
65	0.0	0.5	3.6	17.2	46.9	31.8	9	13	12.06	0.67	0.82	12	0.068
66	0.0	0.1	2.3	10.3	46.6	40.7	9	13	12.25	0.55	0.74	12	0.060
67	0.0	0.0	0.9	8.3	40.1	50.6	10	13	12.40	0.46	0.68	13	0.055
68	0.0	0.0	1.2	6.3	37.1	55.4	10	13	12.47	0.45	0.67	13	0.054
69	0.0	0.0	0.9	5.3	32.8	60.9	10	13	12.54	0.41	0.64	13	0.051
70	0.0	0.0	0.8	3.0	23.7	72.6	10	13	12.68	0.32	0.57	13	0.045
71	0.0	0.0	0.6	1.2	22.5	75.7	10	13	12.73	0.25	0.50	13	0.040
72	0.0	0.0	0.0	0.0	16.0	84.0	12	13	12.84	0.13	0.37	13	0.029
73	0.0	0.0	0.0	3.0	16.7	80.3	11	13	12.77	0.24	0.49	13	0.038
74	0.0	0.0	0.0	4.7	9.3	86.0	11	13	12.81	0.24	0.49	13	0.039
75	0.0	0.0	0.0	0.0	10.3	89.7	12	13	12.90	0.09	0.30	13	0.024
76	0.0	0.0	0.0	5.9	0.0	94.1	11	13	12.88	0.22	0.47	13	0.037
77	0.0	0.0	0.0	0.0	0.0	100.0	12	13	13.00	0.00	0.00	13	0.000
78	0.0	0.0	0.0	0.0	20.0	80.0	12	13	12.80	0.16	0.40	13	0.031
79	0.0	0.0	0.0	100.0	0.0	0.0	11	11	11.00	0.00	0.00	11	0.000

And now the **raw count** that we used to produce this table for Zar Points Basic **(ZPB)**:

	-------- Raw Count -----------						
ZPB	**8**	**9**	**10**	**11**	**12**	**13**	**Tot**
35	4	0	0	0	0	0	***4***
36	6	1	0	0	0	0	***7***
37	37	1	0	0	0	0	***38***
38	83	12	0	0	0	0	***95***
39	174	11	0	0	0	0	***185***
40	358	34	1	0	0	0	***393***
41	742	87	5	1	0	0	***835***
42	1149	177	10	0	0	0	***1336***
43	1827	402	20	1	0	0	***2250***
44	2616	730	70	5	0	0	***3421***
45	3388	1295	172	5	0	0	***4860***
46	3899	1826	350	16	0	0	***6091***
47	4072	2644	584	51	0	0	***7351***
48	3973	3490	989	83	3	0	***8538***
49	3466	4135	1538	182	9	1	***9331***
50	2846	4390	2169	365	13	0	***9783***
51	2181	4325	2845	590	40	1	***9982***
52	1568	3901	3408	896	95	0	***9868***
53	1068	3205	3925	1331	153	6	***9688***
54	683	2483	3893	1792	236	13	***9100***
55	397	1638	3426	2246	384	23	***8114***
56	242	1138	2968	2579	565	40	***7532***
57	130	756	2266	2698	761	50	***6661***
58	72	424	1649	2479	980	93	***5697***
59	33	256	1045	2246	1246	125	***4951***
60	24	155	701	1850	1337	168	***4235***
61	11	78	397	1309	1315	247	***3357***
62	6	53	241	925	1258	302	***2785***
63	4	20	145	617	1090	382	***2258***
64	0	17	80	311	873	431	***1712***
65	0	6	46	220	600	406	***1278***
66	0	1	23	102	463	404	***993***
67	0	0	7	63	303	382	***755***
68	0	0	7	36	211	315	***569***
69	0	0	3	18	111	206	***338***
70	0	0	2	8	63	193	***266***
71	0	0	1	2	38	128	***169***
72	0	0	0	0	16	84	***100***
73	0	0	0	2	11	53	***66***
74	0	0	0	2	4	37	***43***
75	0	0	0	0	3	26	***29***
76	0	0	0	1	0	16	***17***
77	0	0	0	0	0	7	***7***
78	0	0	0	0	1	4	***5***
79	0	0	0	1	0	0	***1***
	35059	***37691***	***32986***	***23033***	***12182***	***4143***	***145094***

	----- Tricks taken -----								----- Statistics -----				
ZPR	**8**	**9**	**10**	**11**	**12**	**13**	**Min**	**Max**	**Mean**	**Var**	**STD**	**Mode**	**Err**
36	100.0	0.0	0.0	0.0	0.0	0.0	8	8	8.00	0.00	0.00	8	0.000
37	100.0	0.0	0.0	0.0	0.0	0.0	8	8	8.00	0.00	0.00	8	0.000
38	100.0	0.0	0.0	0.0	0.0	0.0	8	8	8.00	0.00	0.00	8	0.000
39	92.4	7.6	0.0	0.0	0.0	0.0	8	9	8.08	0.07	0.26	8	0.033
40	96.2	3.8	0.0	0.0	0.0	0.0	8	9	8.04	0.04	0.19	8	0.024
41	93.2	6.8	0.0	0.0	0.0	0.0	8	9	8.07	0.06	0.25	8	0.031
42	93.6	6.4	0.0	0.0	0.0	0.0	8	9	8.06	0.06	0.24	8	0.030
43	88.9	10.8	0.3	0.0	0.0	0.0	8	10	8.11	0.11	0.33	8	0.040
44	84.7	14.5	0.8	0.0	0.0	0.0	8	10	8.16	0.15	0.39	8	0.048
45	79.7	18.7	1.5	0.0	0.0	0.0	8	11	8.22	0.20	0.45	8	0.055
46	75.0	22.8	2.1	0.1	0.0	0.0	8	11	8.27	0.25	0.50	8	0.060
47	66.7	29.6	3.6	0.1	0.0	0.0	8	11	8.37	0.31	0.56	8	0.067
48	59.0	34.7	6.2	0.1	0.0	0.0	8	11	8.48	0.38	0.62	8	0.073
49	49.3	40.5	9.5	0.7	0.0	0.0	8	12	8.62	0.47	0.69	8	0.080
50	41.3	44.1	13.4	1.3	0.0	0.0	8	12	8.75	0.53	0.73	9	0.084
51	32.1	45.5	20.2	2.1	0.1	0.0	8	12	8.92	0.61	0.78	9	0.087
52	25.0	45.2	25.3	4.2	0.2	0.0	8	12	9.09	0.68	0.82	9	0.091
53	18.4	42.4	32.2	6.4	0.5	0.0	8	13	9.28	0.73	0.86	9	0.092
54	13.2	37.0	38.3	10.7	0.7	0.0	8	13	9.49	0.77	0.88	10	0.093
55	8.6	31.0	42.4	16.3	1.6	0.0	8	13	9.71	0.80	0.90	10	0.092
56	5.9	25.9	42.4	22.8	3.0	0.1	8	13	9.91	0.84	0.92	10	0.093
57	4.0	20.3	41.2	29.4	4.9	0.2	8	13	10.11	0.86	0.93	10	0.091
58	2.7	14.1	39.0	35.6	8.2	0.4	8	13	10.34	0.86	0.93	10	0.090
59	1.6	11.0	35.4	39.1	12.0	0.8	8	13	10.51	0.86	0.93	11	0.088
60	0.9	7.6	29.4	42.7	18.1	1.3	8	13	10.73	0.84	0.92	11	0.085
61	0.4	5.3	23.5	44.6	23.8	2.4	8	13	10.93	0.81	0.90	11	0.083
62	0.3	3.6	18.0	43.9	30.3	3.9	8	13	11.12	0.80	0.89	11	0.080
63	0.3	2.1	12.9	40.5	37.3	6.9	8	13	11.33	0.78	0.88	11	0.078
64	0.1	1.3	9.3	36.9	41.8	10.5	8	13	11.50	0.74	0.86	12	0.075
65	0.1	0.9	8.6	32.0	45.0	13.3	8	13	11.61	0.74	0.86	12	0.074
66	0.1	0.9	5.6	23.0	49.5	21.0	8	13	11.84	0.72	0.85	12	0.072
67	0.1	0.2	4.3	19.9	47.1	28.4	8	13	11.99	0.68	0.83	12	0.069
68	0.0	0.4	1.9	14.2	49.6	33.9	9	13	12.15	0.57	0.75	12	0.062
69	0.0	0.1	1.8	11.2	46.5	40.4	9	13	12.25	0.54	0.73	12	0.060
70	0.0	0.0	0.6	9.2	39.8	50.4	10	13	12.40	0.46	0.68	13	0.055
71	0.0	0.0	1.2	7.1	35.0	56.7	10	13	12.47	0.46	0.68	13	0.055
72	0.0	0.0	0.3	2.9	35.3	61.5	10	13	12.58	0.32	0.56	13	0.045
73	0.0	0.0	0.4	3.2	26.3	70.0	10	13	12.66	0.31	0.56	13	0.044
74	0.0	0.0	0.0	2.3	26.4	71.3	11	13	12.69	0.26	0.51	13	0.040
75	0.0	0.0	0.0	2.6	11.3	86.1	11	13	12.83	0.19	0.44	13	0.034
76	0.0	0.0	0.0	0.0	14.5	85.5	12	13	12.86	0.12	0.35	13	0.027
77	0.0	0.0	0.0	0.0	23.3	76.7	12	13	12.77	0.18	0.42	13	0.033
78	0.0	0.0	0.0	6.1	6.1	87.9	11	13	12.82	0.27	0.52	13	0.041
79	0.0	0.0	0.0	0.0	11.1	88.9	12	13	12.89	0.10	0.31	13	0.024
80	0.0	0.0	0.0	11.1	0.0	88.9	11	13	12.78	0.40	0.63	13	0.049

And the **row count** for this Zar Points Ruffing (ZPR) method:

	--------	Raw Count	-----------				
ZPR	**8**	**9**	**10**	**11**	**12**	**13**	**Tot**
36	1	0	0	0	0	0	***1***
37	8	0	0	0	0	0	***8***
38	17	0	0	0	0	0	***17***
39	61	5	0	0	0	0	***66***
40	152	6	0	0	0	0	***158***
41	344	25	0	0	0	0	***369***
42	644	44	0	0	0	0	***688***
43	1114	135	4	0	0	0	***1253***
44	1710	292	17	0	0	0	***2019***
45	2532	595	47	1	0	0	***3175***
46	3280	998	93	5	0	0	***4376***
47	3662	1628	196	8	0	0	***5494***
48	4029	2368	425	10	0	0	***6832***
49	3889	3195	750	56	3	0	***7893***
50	3561	3805	1157	108	1	0	***8632***
51	2813	3989	1770	182	6	0	***8760***
52	2390	4315	2415	405	16	0	***9541***
53	1728	3989	3034	606	50	1	***9408***
54	1223	3428	3549	986	67	3	***9256***
55	735	2644	3611	1393	138	1	***8522***
56	484	2104	3447	1852	245	7	***8139***
57	298	1521	3087	2199	369	13	***7487***
58	187	971	2692	2459	563	30	***6902***
59	98	678	2176	2404	737	52	***6145***
60	48	410	1587	2300	978	68	***5391***
61	20	249	1105	2095	1119	112	***4700***
62	13	144	718	1750	1206	155	***3986***
63	10	69	429	1343	1235	227	***3313***
64	4	38	263	1042	1179	295	***2821***
65	2	22	201	747	1050	309	***2331***
66	1	16	104	428	920	391	***1860***
67	1	3	60	279	660	397	***1400***
68	0	4	22	161	560	383	***1130***
69	0	1	15	94	389	338	***837***
70	0	0	4	57	247	313	***621***
71	0	0	6	35	172	279	***492***
72	0	0	1	10	123	214	***348***
73	0	0	1	8	65	173	***247***
74	0	0	0	4	46	124	***174***
75	0	0	0	3	13	99	***115***
76	0	0	0	0	10	59	***69***
77	0	0	0	0	10	33	***43***
78	0	0	0	2	2	29	***33***
79	0	0	0	0	2	16	***18***
80	0	0	0	1	0	8	***9***
	35059	***37691***	***32986***	***23033***	***12181***	***4129***	***145079***

	----- Tricks taken -----						----- Statistics -----							
ZP3	**8**	**9**	**10**	**11**	**12**	**13**	**Min**	**Max**	**Mean**	**Var**	**STD**	**Mode**	**Err**
36	100.0	0.0	0.0	0.0	0.0	0.0	8	8	8.00	0.00	0.00	8	0.000
37	100.0	0.0	0.0	0.0	0.0	0.0	8	8	8.00	0.00	0.00	8	0.000
38	100.0	0.0	0.0	0.0	0.0	0.0	8	8	8.00	0.00	0.00	8	0.000
39	92.5	7.5	0.0	0.0	0.0	0.0	8	9	8.08	0.07	0.26	8	0.033
40	96.5	3.5	0.0	0.0	0.0	0.0	8	9	8.04	0.03	0.18	8	0.023
41	92.8	7.2	0.0	0.0	0.0	0.0	8	9	8.07	0.07	0.26	8	0.032
42	92.7	7.3	0.0	0.0	0.0	0.0	8	9	8.07	0.07	0.26	8	0.032
43	89.0	10.6	0.4	0.0	0.0	0.0	8	10	8.11	0.11	0.33	8	0.041
44	85.2	14.0	0.8	0.1	0.0	0.0	8	11	8.16	0.15	0.39	8	0.048
45	80.6	17.7	1.7	0.0	0.0	0.0	8	11	8.21	0.20	0.45	8	0.055
46	75.2	22.6	2.1	0.1	0.0	0.0	8	11	8.27	0.24	0.49	8	0.060
47	69.1	27.2	3.6	0.2	0.0	0.0	8	11	8.35	0.31	0.56	8	0.067
48	61.3	32.6	5.8	0.2	0.0	0.0	8	11	8.45	0.38	0.61	8	0.073
49	53.7	36.9	8.6	0.6	0.0	0.0	8	12	8.56	0.46	0.68	8	0.079
50	45.7	40.6	12.4	1.3	0.0	0.0	8	12	8.69	0.54	0.73	8	0.085
51	38.9	42.5	16.7	1.9	0.1	0.0	8	12	8.82	0.60	0.78	9	0.088
52	29.4	44.1	22.6	3.7	0.2	0.0	8	12	9.01	0.68	0.83	9	0.092
53	23.0	42.7	28.4	5.5	0.5	0.0	8	13	9.18	0.75	0.86	9	0.094
54	17.9	40.0	32.4	9.1	0.6	0.0	8	13	9.35	0.81	0.90	9	0.096
55	13.3	35.1	37.2	13.1	1.3	0.0	8	13	9.54	0.86	0.93	10	0.097
56	9.6	30.1	39.3	18.5	2.5	0.0	8	13	9.74	0.91	0.95	10	0.098
57	5.9	24.9	41.0	23.8	4.3	0.2	8	13	9.96	0.91	0.95	10	0.096
58	4.9	20.4	38.7	29.5	6.2	0.4	8	13	10.13	0.96	0.98	10	0.097
59	3.0	16.0	37.3	33.8	9.2	0.8	8	13	10.32	0.95	0.97	10	0.094
60	1.7	12.5	33.3	37.0	14.6	0.9	8	13	10.53	0.95	0.97	11	0.092
61	1.3	8.7	29.4	40.4	18.3	1.8	8	13	10.71	0.93	0.97	11	0.090
62	0.4	7.0	24.6	42.6	22.7	2.7	8	13	10.88	0.89	0.94	11	0.087
63	0.6	4.5	20.4	40.4	29.6	4.6	8	13	11.08	0.91	0.95	11	0.086
64	0.3	3.8	16.6	38.1	33.8	7.4	8	13	11.23	0.92	0.96	11	0.086
65	0.2	2.2	13.7	35.8	37.3	10.9	8	13	11.40	0.89	0.94	12	0.083
66	0.2	1.8	10.4	31.7	41.8	14.1	8	13	11.55	0.87	0.93	12	0.081
67	0.0	0.9	8.4	26.4	44.4	19.9	9	13	11.74	0.81	0.90	12	0.077
68	0.0	1.3	6.3	24.5	44.0	23.9	9	13	11.83	0.82	0.91	12	0.077
69	0.0	0.3	4.3	22.3	42.5	30.5	9	13	11.99	0.73	0.85	12	0.071
70	0.0	0.2	3.3	16.4	45.5	34.6	9	13	12.11	0.65	0.81	12	0.067
71	0.0	0.3	2.4	13.6	43.8	39.9	9	13	12.21	0.62	0.79	12	0.064
72	0.0	0.2	1.9	10.5	39.7	47.7	9	13	12.33	0.57	0.75	13	0.061
73	0.2	0.2	1.5	7.5	37.0	53.5	8	13	12.41	0.56	0.75	13	0.060
74	0.0	0.0	0.4	6.4	33.3	59.9	10	13	12.53	0.40	0.63	13	0.050
75	0.0	0.0	0.0	7.8	26.3	65.9	11	13	12.58	0.40	0.63	13	0.050
76	0.0	0.0	0.7	3.4	33.8	62.2	10	13	12.57	0.35	0.59	13	0.047
77	0.0	0.0	0.0	4.1	21.4	74.5	11	13	12.70	0.29	0.54	13	0.042
78	0.0	0.0	0.0	7.2	20.3	72.5	11	13	12.65	0.37	0.61	13	0.048
79	0.0	0.0	0.0	0.0	34.8	65.2	12	13	12.65	0.23	0.48	13	0.038
80	0.0	0.0	0.0	5.4	13.5	81.1	11	13	12.76	0.29	0.54	13	0.042

And the **row count** for this Zar Points with 3-points per super-trump **(ZP3)** method:

	--------	Raw Count	-----------				
ZP3	**8**	**9**	**10**	**11**	**12**	**13**	**Tot**
36	1	0	0	0	0	0	***1***
37	6	0	0	0	0	0	***6***
38	14	0	0	0	0	0	***14***
39	37	3	0	0	0	0	***40***
40	109	4	0	0	0	0	***113***
41	257	20	0	0	0	0	***277***
42	484	38	0	0	0	0	***522***
43	879	105	4	0	0	0	***988***
44	1388	228	13	1	0	0	***1630***
45	2048	451	42	1	0	0	***2542***
46	2752	826	77	3	0	0	***3658***
47	3257	1282	168	9	0	0	***4716***
48	3639	1936	347	12	0	0	***5934***
49	3745	2573	602	45	3	0	***6968***
50	3687	3279	1000	105	1	0	***8072***
51	3165	3463	1357	151	6	0	***8142***
52	2643	3971	2032	334	15	0	***8995***
53	2152	3994	2656	513	47	1	***9363***
54	1593	3556	2879	805	57	3	***8893***
55	1189	3131	3318	1170	120	2	***8930***
56	785	2471	3226	1519	202	4	***8207***
57	447	1890	3111	1807	328	13	***7596***
58	355	1484	2822	2149	451	27	***7288***
59	200	1051	2453	2221	603	51	***6579***
60	96	723	1927	2141	845	53	***5785***
61	67	446	1504	2068	936	93	***5114***
62	20	317	1117	1937	1033	124	***4548***
63	23	176	806	1597	1167	180	***3949***
64	10	128	555	1276	1133	247	***3349***
65	5	59	369	966	1005	293	***2697***
66	5	41	239	728	962	325	***2300***
67	0	17	157	492	826	370	***1862***
68	0	18	91	351	631	343	***1434***
69	0	4	49	256	488	350	***1147***
70	0	2	30	147	409	311	***899***
71	0	2	17	95	305	278	***697***
72	0	1	10	55	207	249	***522***
73	1	1	6	31	152	220	***411***
74	0	0	1	18	94	169	***282***
75	0	0	0	14	47	118	***179***
76	0	0	1	5	50	92	***148***
77	0	0	0	4	21	73	***98***
78	0	0	0	5	14	50	***69***
79	0	0	0	0	16	30	***46***
80	0	0	0	2	5	30	***37***
	35059	***37691***	***32986***	***23033***	***12179***	***4099***	***145047***

We will present these tables for ALL the other methods below also, but now let's just take a little "break" and make an initial analysis of what we have seen so far.

NOTE that we will use some of the numbers that you will see at the and of this section in the tables for the rest of the methods (all data is provided for each and every method).

Let's have a quick look at the importance of having Point-based "classification" facilities involved in the trick-taking potential evaluation and how it improves, starting from the **"full-entropy"** case which follows.

When the cards are dealt face-down and someone asks you how many tricks you expect to make in Spades on this board, what would you tell him? You have no idea of what kind of spade suit you are going to have, what kind of distribution would you or your partner have, what HCP or what Controls ... so ... you would "expect" to win an average of **6.5 tricks** with Spades as a trump suit, right – just **half of the available 13 tricks**. According to the theory for **binomial probability distributions** (we will model the trick-taking as a classic binomial probability), the variance of the distribution is

VAR = N * pW * pL

where N is the number of tricks, pW is the probability of Winning a trick and pL is the probability of Losing a trick, so the "mid-point" of 6.5 tricks the theoretical variance is (13 * 1/2 * 1/2) = 3.25. From there, the standard deviation is SQRT(3.25) = **1.80 tricks**.

Since the STD function is a bell-shaped curve, note also, that the peak of the bell is naturally at the "equilibrium" point of 6.5 tricks.

We see how that peak of the bell-shaped STD-curve moves up with the introduction of some point-count and this movement is related to the aggressiveness of the method – Goren, Bergen, and WTC are the closest to the 6.5 entropy-equilibrium value, while Lawrence, Zar Points, and LTC are at the other side of the spectrum:

- cards-face-down: peak of the bell at 6.5 tricks;
- Goren Points: peak of the bell at 9.5 tricks;
- Bergen Points: peak of the bell at 10.0 tricks;
- WTC: peak of the bell at 10.0 tricks;
- Zar Points Basic: peak of the bell at 10.2 tricks;
- Zar Points Ruffing: peak of the bell at 10.5 tricks;
- LTC Modern: peak of the bell at 11.0 tricks;
- Zar Points 3: peak of the bell at 11.2 tricks;
- LTC Classic: peak of the bell at 11.5 tricks;
- Lawrence Points: peak of the bell at 12.0 tricks;

We see also, that basically ALL the methods have the peak of the bell-curve around GAME point – only Lawrence Points (the most aggressive one) have the peak at slam trick-taking (12).

Now that we know where the peak is, here is the ranking of the methods from STD perspective:

- Zar Points Ruffing: STD peak value of 0.93;
- Zar Points Basic: STD peak value of 0.94;
- Goren Points: STD peak value of 0.96;
- Bergen Points: STD peak value of 0.96;
- Zar Points 3: STD peak value of 0.98;
- Lawrence Points: STD peak value of 1.05;
- WTC: STD peak value of 1.09;
- LTC Classic: STD peak value of 1.22;
- LTC Modern: STD peak value of 1.23;

You see how close the this 1.80 MAX standard deviation for "cards-face-down" evaluation is the LTC score of some 1.23 – all this coming from the fact that LTC doesn't really distinguish values (compared to the 4321 scale of HCP its scale is 4440 on the honor-evaluation-side for example).

Back to our binomial probability model, if we write down the values of the Variance and Standard Deviation, we see that as the expected number of tricks won increases, the theoretical variance decreases as follows:

- 7 tricks won: VAR = 13 * (7/13) * (6/13) = 3.23, STD = 1.79 tricks
- 8 tricks won: VAR = 13 * (8/13) * (5/13) = 3.08, STD = 1.75 tricks
- 9 tricks won: VAR = 13 * (9/13) * (4/13) = 2.77, STD = 1.66 tricks
- 10 tricks won: VAR = 13 * (10/13) * (3/13) = 2.31, STD = 1.52 tricks
- 11 tricks won: VAR = 13 * (11/13) * (2/13) = 1.69, STD = 1.30 tricks
- 12 tricks won: VAR = 13 * (12/13) * (1/13) = 0.92, STD = 0.96 tricks

Note again, that this is a "**full-entropy-model**", meaning that there is **no-order** among the items (cards in hands in our case) and all hands are treated as equal (meaning there is no information about any HCP, Controls, distribution of any kind, fit etc.).

As the number of tricks decreases towards the median of tricks (6.5), we see that our Point Count Systems Predictors based on HCP, Controls, Distribution etc. help us to **reduce the spread** (since for all the methods it fluctuates around 1.00 (and actually constantly less than 1 for Zar Points Ruffing and Basic, Goren, and Bergen). In other words, introducing information that allows hands to be "classified" and this classification to get reflected in the prediction of trick-taking, improves the accuracy (meaning decreases the variance) dramatically – something that doesn't really comes as a surprise.

The probability of winning exactly X tricks out of 13 when we expect to win Y tricks out of 13 for a binomial probability distribution is the following:

$$\frac{13!}{(13-X)! * X!} * (Y/13)^{**}(X) \;*\; [(1-Y)/13]^{**}(13-X)$$

You may play with the data presented in the tables above via this formula and see the resulting behavior for the method you are interested in (showing how steep the bell-shaped curve for that method is relative to the steepness of the full-entropy-model).

Let's now address the issue of the Level intervals (1 point for LTC, LTM, WTC, and Lawrence, 3 points for Goren, 4 points for Bergen, and 5 points for Zar Points – all 3 flavors). In all cases the **number of points required to win an additional trick increases as the number of tricks goes up** to the slam level - the additional points to get you from 7 to 8 tricks are **lower** that the additional points needed to get you from 12 to 13 tricks!

Note that NO method takes that into account, Zar Points included.

For the HCP based evaluation methods, it takes a little less 3 points per trick up to trick 11, then the 11th trick is a little bit more than 3 points, and the 12th trick is almost 4 points. For Zar based methods, the effect is even more marked (since the points are roughly 2 times more sensitive), with the 9th and 10th tricks being close to 4 points wide, while:

? Zar Points Basic:
  - the 11th trick is 5 Zar Points away from the 10th;
  - the 12th trick is 5.5 Zar Points away from the 11th;

? Zar Points Ruffing:
  - the 11th trick is 5.6 Zar Points away from the 10th;
  - the 12th trick is 6.3 Zar Points away from the 11th;

? Zar Points 3:
  - the 11th trick is 5.7 Zar Points away from the 10th;
  - the 12th trick is 7.2 Zar Points away from the 11th;

So if we "calibrate" the Zar Points intervals to revolve around the 50% boundary to take the corresponding number of tricks, we come up with:

? 44 Zar Points: 50% chance of winning 8 or more tricks
  - next trick: 4 points wide

? 48 Zar Points: 50% chance of winning 9 or more tricks
  - next trick: 4 points wide

- ? 52 Zar Points: 50% chance of winning 10 or more tricks
  - o next trick: 4 points wide
- ? 56 Zar Points: 50% chance of winning 11 or more tricks
  - o next trick: 5 points wide
- ? 61 Zar Points: 50% chance of winning 12 or more tricks
  - o next trick: 6 points wide
- ? 67 Zar Points: 50% chance of winning 13 tricks

You see how the Game and GRAND values are where they stay originally (**52 for Game** and **67 for GRAND**), but the **intermediate** boundaries are **shifted a bit (1 Zar Point)** down.

These adjustments are for a basic Match Points score strategy (where you supposedly **target 50%** trick-taking chances).

You can see how you can adjust these for IMP VUL (37% Games) and non-VUL (66% Games) IF that is what you want to target at IMP (the mathematical probabilities.

Since the match is IMP and VUL, let's see how the adjustments for that would look like. Then we will re-run the match with those boundaries for Game, Slam, and GRAND and see what happens.

Note that the **targeted percent is 37.5%** but some times in order to get to a whole number for the Zar Points needed, the % actually goes up to the closest whole number for the Zar Points value – these closest percentages UP-wards are reflected below:

- ? 51 Zar Points: 36% chance of winning 10 or more tricks
  - o next trick: 4 points wide
- ? 55 Zar Points: 33% chance of winning 11 or more tricks
  - o next trick: 5 points wide
- ? 61 Zar Points: 48% chance of winning 12 or more tricks
  - o next trick: 6 points wide
- ? 67 Zar Points: 50% chance of winning 13 tricks

The important thing is that **Game and Slam** boundaries go **1 Zar Points down**.

In a similar way you can calculate the behavior for non-vulnerable behavior – the boundaries there go **1 Zar Points up.**

Let's have a look at the "transition zones" for some of the methods, so you see the dynamics of the methods.

The Bergen (BP) and Goren (GP) major suit game transitions are both around 24 HCP with 4432 distributions, for GP the transition is near 23.26 HCP, for BP it is near 23.38 HCP (that is the **9.5 tricks** point). For the Zar point based methods this transition looks like this:

? for ZPB it is at 52.40,

? for ZPR it is at 53.88;

? for ZP3 it is at 54.78.

You see that Zar Points Basic is "right on the mark", indicating that the ZPR and ZP3 are giving a bit **too much of a bonus** for the extra **ruffing values** for super-trumps (since that is the only difference with the Zar Points Basic).

To find the theoretical ZPB value where there would be an equal probability of X tricks and X+1 tricks (that is the **decision-point** to go or not to go to the next level) we use interpolation on the data between the two points.

Here are the data for the three Zar Points versions (ZPB, ZPR, ZP3):

?	8.5 tricks:	48.44 ZPB	49.76 ZPR	50.48 ZP3
	9th trick distance:	3.96	4.12	4.30
?	9.5 tricks:	52.40 ZPB	53.88 ZPR	54.78 ZP3
	10th trick distance:	4.04	4.60	4.71
?	10.5 tricks:	56.44 ZPB	58.48 ZPR	59.49 ZP3
	11th trick distance:	4.92	5.23	5.74
?	11.5 tricks:	61.36 ZPB	63.71 ZPR	65.23 ZP3
	12th trick distance:	5.58	6.25	7.17
?	12.5 tricks:	66.94 ZPB	69.96 ZPR	72.40 ZP3

If you look at the **ZPB** (the first column), you see how close those numbers are to the 52 for Game, 57 for Level 5, 62 for Slam, and 67 for GRAND.

Since it is clear that assigning 3 points per extra trump is too much (from both the IMP scoring and the STD scoring), let's concentrate on the Ruffing Zar Points (0-1-2-3).

For them (ZPR), the numbers are shifted by about **2 Zar Points for the pair**, or 1 Zar Point per partner. Which in turn engenders the idea to reduce the Ruffing Power assignment by 1, making it 0-0-1-2 instead of 0-1-2-3 for 3 – 2 – 1 - 0 cards in the shortest side suit respectively.

If we look at just the 9.5 trick level (the decision point between part score and game), the 9.5 trick level for Basic Zar points for the 8 card fit is higher than 52.40, and the 9.5 trick transition in Basic Zar points for 9+ card fits is lower than 52.40 (since there was no bonus accorded for the extra trump s).

If the 9.5 trick ZPB level for 8 card fits is at 53.15 and for 9+ card fits it is at 51.85, you can easily see that that the super fit bonus must average about 1.30 points per hand to make up the difference.

It is also clear again that using ZPR with 0123 over-corrects (53.88 instead of 53.15).

To find a precise middle ground for the Ruffing Power though, other tries using ZPR0**023**, ZPR0**013** and ZPR0**012** should be used to see what shortness super-fit correction results in the closest match-up between 8 card fits and 9+ card fits.

After doing these runs using different ruffing bonuses for side shortness for 9+ card fits, we would have the "good" value for the ruffing power bonuses. USING THIS exact optimal ruffung power calculation, we will then turn to the value of the Secondary Superfit (that is for the cases with double fit where Spades is the trump and another suit is the side working suit).

This way we will have the **Zar Points Optimized (ZPO)** where all the extra fit points are calculated to bring the minimal Standard Deviation – both for the primary and the secondary fit.

The experiments with ZPR**0023** (0 points for 4333, 0 for doubleton, 2 for singleton, and 3 for void) resulted in STD = 0.94 which is worse than the initial Ruffing Power result of STD = 0.93. The experiments with ZPR**0013** (0 points for 4333, 0 for doubleton, 1 for singleton, and 3 for void) resulted in STD = 0.94 which is worse than the initial Ruffing Power result of STD = 0.91.

So we were down to the ZPR0012. IF we **scale-down by 1 point** and award **1 point** per trump with a side singleton and award **2 points** per trump with a side void, with no bonus for extra trumps with doubleton being the shortest side suit or for having a 4-3-3-3 distribution with 4 trumps (since we want to get to the closest whole number for at-the-table use), then the results for the new Zar Points Conservative Ruffing (abbreviated to **ZPC**) will be:

	----- Tricks taken			-----				----- Statistics			-----		
ZPR0012	**8**	**9**	**10**	**11**	**12**	**13**	**Min**	**Max**	**Mean**	**Var**	**STD**	**Mod**	**Err**
35	100.0	0.0	0.0	0.0	0.0	0.0	8	8	8.00	0.00	0.00	8	0.000
36	100.0	0.0	0.0	0.0	0.0	0.0	8	8	8.00	0.00	0.00	8	0.000
37	90.9	9.1	0.0	0.0	0.0	0.0	8	9	8.09	0.08	0.29	8	0.036
38	87.5	12.5	0.0	0.0	0.0	0.0	8	9	8.13	0.11	0.33	8	0.041
39	95.6	4.4	0.0	0.0	0.0	0.0	8	9	8.04	0.04	0.20	8	0.025
40	92.0	8.0	0.0	0.0	0.0	0.0	8	9	8.08	0.07	0.27	8	0.034
41	92.7	7.0	0.3	0.0	0.0	0.0	8	10	8.08	0.08	0.28	8	0.034
42	89.1	10.7	0.2	0.0	0.0	0.0	8	10	8.11	0.10	0.32	8	0.039
43	81.4	17.2	1.3	0.1	0.0	0.0	8	11	8.20	0.19	0.44	8	0.054
44	78.6	20.4	1.0	0.0	0.0	0.0	8	10	8.22	0.19	0.44	8	0.054
45	73.5	24.3	2.2	0.1	0.0	0.0	8	11	8.29	0.25	0.50	8	0.061
46	64.4	31.5	3.9	0.2	0.0	0.0	8	11	8.40	0.33	0.58	8	0.068
47	57.0	36.0	6.6	0.3	0.0	0.0	8	11	8.50	0.40	0.63	8	0.074
48	47.2	42.3	9.9	0.7	0.0	0.0	8	12	8.64	0.47	0.69	8	0.079
49	39.4	46.5	13.0	1.1	0.0	0.0	8	12	8.76	0.51	0.72	9	0.082
50	29.0	47.6	21.0	2.4	0.1	0.0	8	12	8.97	0.61	0.78	9	0.087
51	22.7	47.2	26.1	3.7	0.2	0.0	8	13	9.12	0.65	0.80	9	0.088
52	17.3	43.2	32.9	6.3	0.4	0.0	8	12	9.29	0.70	0.84	9	0.090
53	10.9	38.2	39.8	10.4	0.6	0.0	8	13	9.52	0.72	0.85	10	0.089
54	7.9	31.7	43.8	15.1	1.4	0.0	8	13	9.71	0.76	0.87	10	0.090
55	4.8	26.0	45.1	21.1	2.9	0.1	8	13	9.92	0.78	0.88	10	0.089
56	3.1	18.6	44.1	29.7	4.1	0.3	8	13	10.14	0.78	0.89	10	0.087
57	2.3	13.3	39.7	36.8	7.6	0.3	8	13	10.35	0.80	**0.90**	10	0.087
58	1.5	10.5	36.6	40.4	10.6	0.5	8	13	10.50	0.79	0.89	11	0.085
59	0.8	7.0	31.0	44.4	15.6	1.2	8	13	10.71	0.78	0.88	11	0.082
60	0.2	5.7	23.3	47.5	21.7	1.6	8	13	10.89	0.75	0.87	11	0.080
61	0.3	2.7	18.4	45.2	30.2	3.1	8	13	11.12	0.73	0.86	11	0.077
62	0.3	2.5	14.5	42.2	34.7	5.9	8	13	11.26	0.78	0.88	11	0.079
63	0.2	1.5	9.5	39.4	39.8	9.7	8	13	11.46	0.74	0.86	12	0.075
64	0.1	0.9	8.8	33.3	44.9	12.0	8	13	11.58	0.73	0.85	12	0.074
65	0.1	1.0	5.0	25.3	48.5	20.1	8	13	11.81	0.72	0.85	12	0.072
66	0.0	0.7	5.2	21.3	47.8	25.0	9	13	11.91	0.72	0.85	12	0.071
67	0.1	0.6	2.2	17.5	49.1	30.4	8	13	12.06	0.64	0.80	12	0.066
68	0.0	0.0	2.4	12.2	48.4	37.0	10	13	12.20	0.55	0.74	12	0.061
69	0.0	0.0	1.2	8.5	44.5	45.7	10	13	12.35	0.47	0.69	13	0.056
70	0.0	0.0	1.5	7.6	38.6	52.3	10	13	12.42	0.48	0.70	13	0.056
71	0.0	0.0	0.0	6.8	39.6	53.6	11	13	12.47	0.39	0.62	13	0.050
72	0.0	0.0	0.0	3.9	32.0	64.0	11	13	12.60	0.32	0.56	13	0.045
73	0.0	0.0	0.0	2.7	30.9	66.4	11	13	12.64	0.29	0.53	13	0.042
74	0.0	0.0	0.0	2.1	21.6	76.3	11	13	12.74	0.23	0.48	13	0.038
75	0.0	0.0	0.0	3.6	14.3	82.1	11	13	12.79	0.24	0.49	13	0.038
76	0.0	0.0	0.0	0.0	26.3	73.7	12	13	12.74	0.19	0.44	13	0.035
77	0.0	0.0	0.0	7.1	14.3	78.6	11	13	12.71	0.35	0.59	13	0.046
78	0.0	0.0	0.0	0.0	20.0	80.0	12	13	12.80	0.16	0.40	13	0.031
79	0.0	0.0	0.0	0.0	0.0	100.0	12	13	13.00	0.00	0.00	13	0.000
80	0.0	0.0	0.0	0.0	33.3	66.7	12	13	12.67	0.22	0.47	13	0.037

So the Optimal Ruffing Values are **0012**, let’s see the **Side Suit** lengths optimizations.

	----- Tricks taken -----								----- Statistics -----				
ZPL012	**8**	**9**	**10**	**11**	**12**	**13**	**Min**	**Max**	**Mean**	**Var**	**STD**	**Mode**	**Err**
35	100.0	0.0	0.0	0.0	0.0	0.0	8	8	8.00	0.00	0.00	8	0.000
36	100.0	0.0	0.0	0.0	0.0	0.0	8	8	8.00	0.00	0.00	8	0.000
37	90.0	10.0	0.0	0.0	0.0	0.0	8	9	8.10	0.09	0.30	8	0.037
38	87.8	12.2	0.0	0.0	0.0	0.0	8	9	8.12	0.11	0.33	8	0.040
39	96.5	3.5	0.0	0.0	0.0	0.0	8	9	8.04	0.03	0.18	8	0.023
40	91.5	8.5	0.0	0.0	0.0	0.0	8	9	8.08	0.08	0.28	8	0.034
41	92.9	6.8	0.3	0.0	0.0	0.0	8	10	8.07	0.07	0.27	8	0.034
42	89.4	10.6	0.0	0.0	0.0	0.0	8	9	8.11	0.09	0.31	8	0.038
43	81.5	17.1	1.4	0.0	0.0	0.0	8	10	8.20	0.19	0.43	8	0.053
44	79.1	19.9	1.0	0.1	0.0	0.0	8	11	8.22	0.20	0.44	8	0.054
45	73.4	24.5	2.1	0.1	0.0	0.0	8	11	8.29	0.25	0.50	8	0.060
46	64.7	31.3	3.8	0.2	0.0	0.0	8	11	8.39	0.33	0.57	8	0.068
47	57.4	35.8	6.6	0.3	0.0	0.0	8	11	8.50	0.40	0.63	8	0.074
48	47.4	42.6	9.3	0.6	0.0	0.0	8	12	8.63	0.46	0.68	8	0.079
49	39.6	46.2	13.1	1.0	0.0	0.0	8	12	8.76	0.51	0.72	9	0.082
50	29.3	47.6	20.6	2.4	0.1	0.0	8	12	8.96	0.61	0.78	9	0.087
51	22.8	47.6	25.9	3.5	0.2	0.0	8	13	9.11	0.64	0.80	9	0.088
52	17.6	43.2	32.7	6.2	0.3	0.0	8	12	9.29	0.70	0.84	9	0.090
53	10.8	38.3	40.0	10.2	0.6	0.0	8	12	9.52	0.71	0.84	10	0.088
54	8.2	32.2	43.6	14.7	1.3	0.0	8	13	9.69	0.76	0.87	10	0.090
55	4.8	26.0	45.0	21.5	2.6	0.1	8	13	9.92	0.77	0.88	10	0.089
56	3.4	18.9	44.3	28.9	4.2	0.3	8	13	10.13	0.79	**0.89**	10	0.088
57	2.3	13.5	40.4	36.2	7.2	0.4	8	13	10.34	0.80	**0.89**	10	0.086
58	1.4	11.0	36.2	40.5	10.5	0.3	8	13	10.49	0.79	**0.89**	11	0.085
59	0.8	7.2	31.3	44.2	15.2	1.2	8	13	10.69	0.78	0.88	11	0.083
60	0.2	5.8	23.7	47.6	21.2	1.5	8	13	10.88	0.75	0.86	11	0.079
61	0.3	2.7	18.3	45.4	30.2	3.1	8	13	11.12	0.73	0.85	11	0.077
62	0.3	2.5	15.3	42.5	33.8	5.6	8	13	11.24	0.78	0.89	11	0.079
63	0.2	1.5	9.8	39.9	39.6	9.0	8	13	11.44	0.73	0.86	11	0.075
64	0.1	1.0	9.1	33.1	44.3	12.4	8	13	11.58	0.74	0.86	12	0.075
65	0.1	1.0	4.8	26.0	49.7	18.4	8	13	11.80	0.70	0.83	12	0.071
66	0.0	0.7	5.1	21.3	47.7	25.2	9	13	11.92	0.72	0.85	12	0.071
67	0.1	0.7	2.0	18.4	48.9	29.9	8	13	12.05	0.65	0.80	12	0.067
68	0.0	0.0	3.0	12.6	48.3	36.1	10	13	12.18	0.58	0.76	12	0.062
69	0.0	0.0	1.2	9.8	44.3	44.7	10	13	12.33	0.49	0.70	13	0.057
70	0.0	0.0	1.4	7.4	40.1	51.0	10	13	12.41	0.48	0.69	13	0.056
71	0.0	0.0	0.0	6.6	38.4	55.0	11	13	12.48	0.38	0.62	13	0.050
72	0.0	0.0	0.0	3.8	33.2	63.0	11	13	12.59	0.32	0.56	13	0.045
73	0.0	0.0	0.0	2.4	30.6	66.9	11	13	12.65	0.28	0.53	13	0.042
74	0.0	0.0	0.0	2.1	21.9	76.0	11	13	12.74	0.23	0.48	13	0.038
75	0.0	0.0	0.0	3.3	15.0	81.7	11	13	12.78	0.24	0.49	13	0.038
76	0.0	0.0	0.0	0.0	25.0	75.0	12	13	12.75	0.19	0.43	13	0.034
77	0.0	0.0	0.0	6.5	12.9	80.6	11	13	12.74	0.32	0.57	13	0.044
78	0.0	0.0	0.0	0.0	19.0	81.0	12	13	12.81	0.15	0.39	13	0.031
79	0.0	0.0	0.0	0.0	0.0	100.0	12	13	13.00	0.00	0.00	13	0.000
80	0.0	0.0	0.0	0.0	33.3	66.7	12	13	12.67	0.22	0.47	13	0.037

We see that if we assign:

- 0 points for having an 8-card side-suit fit,
- 1 point for having a 9-card side-suit fit,
- 2 points for having a 10+ card side-suit fit,

the Standard Deviation for the **First Time** is brought **below 0.90 –** it is 0.89!

For the other experiments the results were:

- STD of 0.90 for 123 points assigned to secondary fit;

- STD of 0.90 for 124 points assigned to secondary fit;

So we finally were able to reach the numbers for the Zar Points Optimized with

- **Super-fit** points assigned according to the 0012 scale (2 for void, 1 for singleton);

- **Side-fit** points assigned according to the 012 scale (2 for 10+, 1 for 9-cards);

Once again about the notation:

ZPRabcd refers to giving a bonus of "a" points for each extra super-trump with a 4333 distribution, a "b" point bonus for each extra super-trump with a doubleton being the shortest side suit, a "c" point bonus for each extra super trump with a side singleton, and "d" with a void.

ZPLxyz refers to the side extra length bonus, where we give x extra point for having a side 8-card side suit, y for 9-card, z for 10+ card side suit.

Thus the "score-card in Standard Deviation Terms becomes:

ZPO	**0.89**
ZPR	0.93
ZPB	0.94
GP	0.96
BP	0.96
ZP3	0.98
LP	1.05
WTC	1.09
LTC	1.22
LTM	1.23

Now we can go back to the IMP match and see how the new Optimized Zar Points will score. The results are presented on the next page.

We will start with the Game performance – underbidding first, then the overbidding.

You see that these are the SAME tables from before, but instead of 9, now we have 10 participants, the 10th being the new **Zar Points Optimized (ZPO**).

	UNDER Bid	GAME Bid	IMPs lost
ZPO	5054	10598	**50,540**
ZPB	7387	8265	73,870
ZPR	3154	12498	31,540
ZP3	2445	13207	24,450
GP	13088	2564	130,880
BP	13462	2190	134,620
LTC	6106	9546	61,060
LTM	7629	8023	76,290
WTC	12362	92,220	123,620
MLP	3241	12411	32,410

	Part Score	OVER Bid	IMPs lost	IMP	Place
ZPO	16459	7648	**45,888**	**96,428**	**1.5**
ZPB	18592	5515	33,090	**106,960**	**4**
ZPR	13436	10671	64,026	**95,566**	**1**
ZP3	11039	13068	78,408	**102,858**	**2**
GP	23000	1107	6,642	**137,522**	**8**
BP	23196	911	5,466	**140,086**	**9**
LTC	16218	7889	47,334	**108,394**	**5**
LTM	18220	5887	35,322	**111,612**	**6**
WTC	21845	2262	13,572	**137,192**	**7**
MLP	12145	11962	71,772	**104,182**	**3**

It came as a surprise to me that in the Game section the new Optimized method did NOT come first – it's very close to the winner ZPR, with less that 1,000 IMPs behind. We denote the place with 1.5 in order to preserve the positions of the other methods the way they were in the original 9-side match.

If ZPO comes first (as it is the case in the other 2 categories) we will denote that NEW First place as **#0.**

Here is the pair of underbid / overbid tables for the Slam zone:

	UNDER Bid	SLAM Bid	
ZPO	2350	1831	**30,550**
ZPB	2897	1284	37,661
ZPR	1723	2458	22,399
ZP3	1398	2783	18,174
GP	3660	521	47,580
BP	4160	21	54,080
LTC	2513	1668	32,669
LTM	2720	1461	35,360
WTC	3546	635	46,098
MLP	1235	2946	16,055

	Game or Less	OVER Bid		IMP	Place
ZPO	6114	1267	**16,471**	**47,021**	**0**
ZPB	6551	830	10,790	**48,451**	**2**
ZPR	5324	2057	26,741	**49,140**	**1**
ZP3	4758	2623	34,099	**52,223**	**6**
GP	7133	248	3,224	**50,804**	**5**
BP	7372	9	117	**54,197**	**8**
LTC	5997	1384	17,992	**50,661**	**4**
LTM	6278	1103	14,339	**49,669**	**3**
WTC	6892	489	6,357	**52,455**	**7**
MLP	3966	3415	44,395	**60,450**	**9**

Here the new method is already more than 2,000 IMPS ahead of the previous ZPR.

The gain come form savings in the Overbidding section which is natural since we decreased the bonuses for super-fits.

And lastly, the case of GRAND Slams.

Here is the pair of Tables:

	UNDER Bid	GRAND Bid	
ZPO	1149	660	**14,937**
ZPB	1378	431	17,914
ZPR	874	935	11,362
ZP3	718	1091	9,334
GP	1579	230	20,527
BP	1807	2	23,504
LTC	1223	586	15,899
LTM	1295	514	16,835
WTC	1574	235	20,462
MLP	610	1199	7,930

	Slam or Less	OVER Bid		IMP	Place	IMP TOTAL	Place TOTAL
ZPO	2591	337	**5,729**	**20,666**		**164,122**	**0**
ZPB	2724	204	3,468	**21,382**	**1**	**176,793**	**2**
ZPR	2333	595	10,115	**21,477**	**2**	**166,183**	**1**
ZP3	2127	801	13,617	**22,951**	**6**	**178,032**	**3**
GP	2840	88	1,496	**22,023**	**3**	**210,349**	**7**
BP	2927	1	17	**23,512**	**8**	**217,795**	**9**
LTC	2549	379	6,443	**22,342**	**5**	**181,397**	**4**
LTM	2614	314	5,338	**22,173**	**4**	**183,454**	**5**
WTC	2775	153	2,601	**23,063**	**7**	**212,710**	**8**
MLP	1728	1200	20,400	**28,330**	**9**	**192,962**	**6**

In the GRAND area we have another gain of a bit less than 1,000 IMPs, and a total gain of over 2,000 IMPs compared to the previous leader ZPR.

So in the STD comparison the new ZPO dropped the **STD** from 0.93 to 0.89, and in the **IMP** comparison from 166K to 164K.

Lastly, let’s present the data for the rest of the methods, as we promised in the beginning of this section.

Here are the rest of the Standard Deviation Tables for the other methods:

	----- Tricks taken -----								----- Statistics -----				
GP	**8**	**9**	**10**	**11**	**12**	**13**	**Min**	**Max**	**Mean**	**Var**	**STD**	**Mode**	**Err**
12	100.0	0.0	0.0	0.0	0.0	0.0	8	8	8.00	0.00	0.00	8	0.000
13	85.7	14.3	0.0	0.0	0.0	0.0	8	9	8.14	0.12	0.35	8	0.043
14	82.4	17.6	0.0	0.0	0.0	0.0	8	9	8.18	0.15	0.38	8	0.047
15	86.2	12.4	1.4	0.0	0.0	0.0	8	10	8.15	0.16	0.40	8	0.049
16	84.1	14.0	1.5	0.4	0.0	0.0	8	11	8.18	0.20	0.45	8	0.055
17	82.6	16.2	1.2	0.1	0.0	0.0	8	11	8.19	0.18	0.43	8	0.052
18	77.7	19.8	2.4	0.1	0.0	0.0	8	11	8.25	0.24	0.49	8	0.060
19	72.3	23.5	3.9	0.3	0.0	0.0	8	11	8.32	0.32	0.56	8	0.068
20	65.1	27.9	6.4	0.6	0.0	0.0	8	12	8.43	0.41	0.64	8	0.076
21	57.6	32.0	9.0	1.3	0.1	0.0	8	13	8.54	0.52	0.72	8	0.084
22	46.6	38.3	12.7	2.3	0.1	0.0	8	13	8.71	0.61	0.78	8	0.090
23	34.5	42.2	19.1	3.8	0.4	0.0	8	13	8.93	0.72	0.85	9	0.095
24	24.4	42.1	25.9	6.7	0.9	0.0	8	13	9.18	0.82	0.91	9	0.099
25	15.1	37.4	33.8	11.7	1.8	0.2	8	13	9.48	0.92	0.96	9	0.101
26	7.6	30.1	40.5	17.9	3.7	0.3	8	13	9.81	0.92	0.96	10	0.098
27	3.4	20.3	41.6	27.9	6.1	0.7	8	13	10.15	0.90	0.95	10	0.094
28	1.3	12.4	37.4	35.8	11.7	1.4	8	13	10.49	0.89	0.94	10	0.090
29	0.5	6.3	28.5	43.5	19.0	2.2	8	13	10.81	0.83	0.91	11	0.084
30	0.2	2.7	20.4	44.7	27.0	4.8	8	13	11.10	0.79	0.89	11	0.080
31	0.0	1.1	10.9	41.3	37.8	8.8	9	13	11.42	0.71	0.84	11	0.074
32	0.0	0.4	5.8	32.6	45.9	15.2	9	13	11.70	0.66	0.81	12	0.069
33	0.0	0.1	2.9	21.7	51.6	23.8	9	13	11.96	0.57	0.76	12	0.063
34	0.0	0.0	1.1	12.2	51.6	35.2	10	13	12.21	0.47	0.69	12	0.056
35	0.0	0.0	0.2	5.5	46.5	47.7	10	13	12.42	0.37	0.60	13	0.049
36	0.0	0.0	0.0	2.2	36.7	61.2	11	13	12.59	0.28	0.53	13	0.042
37	0.0	0.0	0.0	2.4	23.5	74.1	11	13	12.72	0.25	0.50	13	0.039
38	0.0	0.0	0.0	0.7	12.9	86.4	11	13	12.86	0.14	0.37	13	0.029
39	0.0	0.0	0.0	0.0	4.3	95.7	12	13	12.96	0.04	0.20	13	0.016
40	0.0	0.0	0.0	4.9	7.3	87.8	11	13	12.83	0.24	0.49	13	0.038
41	0.0	0.0	0.0	0.0	0.0	100.0	12	13	13.00	0.00	0.00	13	0.000
42	0.0	0.0	0.0	0.0	12.5	87.5	12	13	12.88	0.11	0.33	13	0.026
43	0.0	0.0	0.0	0.0	0.0	100.0	12	13	13.00	0.00	0.00	13	0.000

One thing that is interesting while studying both the Goren Points here and the Bergen Points a couple of pages below is that:

- their peak value of the STD is very close to what they say is the Game Limit – 26 Goren Points and 40 Bergen Points, as we are going to see;

- their STD value is VERY low compared to the most of the methods, including lower that the most aggressive Zar Points version – the ZP3.

Here is the raw data for Goren:

	-------- Raw Count -----------					
GP	**8**	**9**	**10**	**11**	**12**	**13**	**Tot**
12	7	0	0	0	0	0	***7***
13	18	3	0	0	0	0	***21***
14	56	12	0	0	0	0	***68***
15	181	26	3	0	0	0	***210***
16	450	75	8	2	0	0	***535***
17	990	194	14	1	0	0	***1199***
18	1917	488	59	3	0	0	***2467***
19	3147	1025	168	15	0	0	***4355***
20	4523	1936	442	44	1	0	***6946***
21	5715	3174	893	132	6	1	***9921***
22	5790	4768	1578	283	18	1	***12438***
23	4850	5934	2686	530	50	5	***14055***
24	3599	6204	3824	990	126	4	***14747***
25	2200	5440	4908	1700	268	24	***14540***
26	1025	4048	5449	2407	496	41	***13466***
27	410	2419	4958	3321	732	79	***11919***
28	125	1201	3636	3484	1142	133	***9721***
29	41	505	2281	3481	1520	180	***8008***
30	15	170	1276	2794	1688	301	***6244***
31	0	53	526	1987	1821	425	***4812***
32	0	14	191	1080	1519	504	***3308***
33	0	2	68	516	1229	566	***2381***
34	0	0	16	185	784	535	***1520***
35	0	0	2	55	465	477	***999***
36	0	0	0	13	221	369	***603***
37	0	0	0	7	69	218	***294***
38	0	0	0	1	19	127	***147***
39	0	0	0	0	4	88	***92***
40	0	0	0	2	3	36	***41***
41	0	0	0	0	0	21	***21***
42	0	0	0	0	1	7	***8***
43	0	0	0	0	0	1	***1***
	35059	***37691***	***32986***	***23033***	***12182***	***4143***	***145094***

And now, let's move to the percentage and Statistical data for **Bergen**.

Watch how close to the 40-point mark the peak is:

	----- Tricks taken -----						----- Statistics -----							
BP	**8**	**9**	**10**	**11**	**12**	**13**	**Min**	**Max**	**Mean**	**Var**	**STD**	**Mode**	**Err**
24	100.0	0.0	0.0	0.0	0.0	0.0	8	8	8.00	0.00	0.00	8	0.000
25	100.0	0.0	0.0	0.0	0.0	0.0	8	8	8.00	0.00	0.00	8	0.000
26	100.0	0.0	0.0	0.0	0.0	0.0	8	8	8.00	0.00	0.00	8	0.000
27	83.3	16.7	0.0	0.0	0.0	0.0	8	9	8.17	0.14	0.37	8	0.046
28	84.8	13.6	1.5	0.0	0.0	0.0	8	10	8.17	0.17	0.41	8	0.050
29	83.0	15.5	1.0	0.5	0.0	0.0	8	11	8.19	0.20	0.45	8	0.055
30	83.9	14.3	1.4	0.4	0.0	0.0	8	11	8.18	0.20	0.45	8	0.055
31	82.5	16.3	1.0	0.1	0.0	0.0	8	11	8.19	0.18	0.42	8	0.052
32	75.9	20.7	3.2	0.2	0.0	0.0	8	11	8.28	0.28	0.52	8	0.063
33	71.9	23.3	4.3	0.4	0.0	0.0	8	12	8.33	0.34	0.58	8	0.070
34	65.9	27.5	6.0	0.6	0.0	0.0	8	12	8.41	0.40	0.63	8	0.075
35	58.3	31.2	9.0	1.4	0.1	0.0	8	13	8.54	0.52	0.72	8	0.085
36	48.4	36.7	12.5	2.2	0.2	0.0	8	13	8.69	0.62	0.79	8	0.091
37	35.9	42.1	17.7	3.8	0.4	0.0	8	13	8.91	0.72	0.85	9	0.095
38	25.2	41.8	25.5	6.6	0.9	0.0	8	13	9.16	0.83	0.91	9	0.099
39	15.3	38.7	32.9	11.1	1.8	0.1	8	13	9.46	0.90	0.95	9	0.101
40	7.7	30.6	39.9	17.9	3.5	0.4	8	13	9.80	0.93	0.96	10	0.098
41	3.2	20.3	42.6	27.0	6.2	0.7	8	13	10.15	0.89	0.94	10	0.093
42	1.3	12.1	37.8	35.7	11.8	1.4	8	13	10.49	0.89	0.94	10	0.090
43	0.4	5.8	28.7	44.2	18.6	2.4	8	13	10.82	0.81	0.90	11	0.083
44	0.2	2.6	19.9	45.2	27.0	5.0	8	13	11.11	0.78	0.88	11	0.080
45	0.0	0.9	10.4	41.3	38.7	8.7	9	13	11.44	0.68	0.83	11	0.072
46	0.0	0.4	5.1	31.8	47.0	15.7	9	13	11.72	0.64	0.80	12	0.068
47	0.0	0.1	2.6	21.0	52.4	23.9	9	13	11.97	0.56	0.75	12	0.063
48	0.0	0.0	0.9	10.8	50.7	37.6	10	13	12.25	0.46	0.68	12	0.055
49	0.0	0.0	0.2	5.4	46.7	47.7	10	13	12.42	0.36	0.60	13	0.049
50	0.0	0.0	0.0	1.5	35.7	62.8	11	13	12.61	0.27	0.52	13	0.041
51	0.0	0.0	0.0	2.7	20.7	76.6	11	13	12.74	0.25	0.50	13	0.039
52	0.0	0.0	0.0	0.7	10.1	89.3	11	13	12.89	0.11	0.34	13	0.026
53	0.0	0.0	0.0	0.0	5.8	94.2	12	13	12.94	0.05	0.23	13	0.018
54	0.0	0.0	0.0	4.9	4.9	90.2	11	13	12.85	0.22	0.47	13	0.037
55	0.0	0.0	0.0	0.0	0.0	100.0	12	13	13.00	0.00	0.00	13	0.000
56	0.0	0.0	0.0	0.0	11.1	88.9	12	13	12.89	0.10	0.31	13	0.024

And the row count for Bergen:

	--------	Raw Count	-----------				
BP	**8**	**9**	**10**	**11**	**12**	**13**	**Tot**
24	1	0	0	0	0	0	***1***
25	1	0	0	0	0	0	***1***
26	7	0	0	0	0	0	***7***
27	15	3	0	0	0	0	***18***
28	56	9	1	0	0	0	***66***
29	166	31	2	1	0	0	***200***
30	422	72	7	2	0	0	***503***
31	870	172	11	1	0	0	***1054***
32	1700	465	72	4	0	0	***2241***
33	2927	949	177	16	1	0	***4070***
34	4388	1829	398	40	2	0	***6657***
35	5741	3068	890	141	6	1	***9847***
36	5950	4511	1538	267	23	2	***12291***
37	5121	5999	2528	548	59	4	***14259***
38	3821	6342	3876	1003	132	6	***15180***
39	2253	5715	4858	1643	273	21	***14763***
40	1061	4204	5484	2459	480	55	***13743***
41	384	2423	5077	3219	743	82	***11928***
42	125	1211	3772	3561	1174	139	***9982***
43	36	464	2309	3558	1498	192	***8057***
44	14	165	1242	2818	1680	311	***6230***
45	0	43	500	1987	1859	420	***4809***
46	0	14	167	1042	1541	514	***3278***
47	0	2	61	491	1225	559	***2338***
48	0	0	14	162	762	565	***1503***
49	0	0	2	51	439	448	***940***
50	0	0	0	9	209	368	***586***
51	0	0	0	7	54	200	***261***
52	0	0	0	1	15	133	***149***
53	0	0	0	0	4	65	***69***
54	0	0	0	2	2	37	***41***
55	0	0	0	0	0	13	***13***
56	0	0	0	0	1	8	***9***
	35059	***37691***	***32986***	***23033***	***12182***	***4143***	***145094***

Next, we present the data for the worst performer, the LTC.

LTC stands for Losing Trick count Classic, while LTM – for Losing Trick Count Modern.

	-----	Tricks taken	-----						-----	Statistics	-----		
LTC	**8**	**9**	**10**	**11**	**12**	**13**	**Min**	**Max**	**Mean**	**Var**	**STD**	**Mode**	**Err**
5	98.4	1.6	0.0	0.0	0.0	0.0	8	9	8.02	0.02	0.13	8	0.016
6	83.8	15.1	1.2	0.0	0.0	0.0	8	10	8.17	0.17	0.41	8	0.050
7	69.0	25.6	5.0	0.4	0.0	0.0	8	11	8.37	0.36	0.60	8	0.071
8	47.1	36.3	13.8	2.5	0.3	0.0	8	12	8.72	0.66	0.81	8	0.093
9	26.9	36.1	26.0	9.2	1.7	0.1	8	13	9.23	1.01	1.01	9	0.109
10	13.1	26.4	32.2	20.9	6.6	0.9	8	13	9.84	1.31	1.15	10	0.117
11	6.5	16.0	28.0	30.1	15.7	3.7	8	13	10.44	1.49	1.22	11	0.117
12	3.3	8.9	19.7	31.9	26.9	9.3	8	13	10.98	1.49	1.22	11	0.111
13	2.0	5.2	14.4	26.2	33.5	18.7	8	13	11.40	1.46	1.21	12	0.106
14	1.2	3.4	8.7	19.8	35.4	31.5	8	13	11.79	1.31	1.15	12	0.097
15	1.0	2.7	7.7	14.3	30.4	43.9	8	13	12.02	1.29	1.14	13	0.094
16	0.0	0.8	6.3	13.3	35.9	43.8	9	13	12.16	0.87	0.93	13	0.077
17	0.0	0.0	3.2	9.7	19.4	67.7	10	13	12.52	0.64	0.80	13	0.064
18	0.0	0.0	0.0	33.3	33.3	33.3	11	13	12.00	0.67	0.82	11	0.068

and the row data:

	--------	Raw Count	-----------				
LTC	**8**	**9**	**10**	**11**	**12**	**13**	**Tot**
5	61	1	0	0	0	0	***62***
6	1223	220	17	0	0	0	***1460***
7	6604	2445	479	39	0	0	***9567***
8	11553	8901	3389	611	66	0	***24520***
9	9403	12589	9072	3211	586	41	***34902***
10	4220	8531	10399	6740	2143	286	***32319***
11	1461	3572	6266	6720	3515	826	***22360***
12	402	1087	2413	3902	3288	1144	***12236***
13	105	269	743	1354	1730	968	***5169***
14	22	61	159	361	644	573	***1820***
15	5	14	40	74	157	227	***517***
16	0	1	8	17	46	56	***128***
17	0	0	1	3	6	21	***31***
18	0	0	0	1	1	1	***3***
	35059	***37691***	***32986***	***23033***	***12182***	***4143***	***145094***

Now for the Modern LTC:

	-----	Tricks taken	-----						-----	Statistics	-----		
LTM	**8**	**9**	**10**	**11**	**12**	**13**	**Min**	**Max**	**Mean**	**Var**	**STD**	**Mode**	**Err**
4	100.0	0.0	0.0	0.0	0.0	0.0	8	8	8.00	0.00	0.00	8	0.000
5	91.2	8.2	0.6	0.0	0.0	0.0	8	10	8.09	0.10	0.31	8	0.039
6	77.9	19.3	2.7	0.1	0.0	0.0	8	11	8.25	0.25	0.50	8	0.061
7	60.4	31.1	7.6	0.9	0.1	0.0	8	12	8.49	0.47	0.68	8	0.080
8	39.1	37.5	18.7	4.2	0.5	0.0	8	13	8.90	0.78	0.88	8	0.099
9	20.8	33.6	29.5	13.1	2.8	0.2	8	13	9.44	1.11	1.06	9	0.112
10	10.3	22.8	32.0	24.3	9.1	1.5	8	13	10.04	1.38	1.17	10	0.117
11	5.5	13.5	25.7	31.7	18.8	4.8	8	13	10.59	1.51	1.23	11	0.116
12	2.8	7.8	18.3	30.6	28.9	11.6	8	13	11.10	1.49	1.22	11	0.110
13	1.8	4.5	12.7	25.5	34.7	20.8	8	13	11.49	1.41	1.19	12	0.103
14	0.9	3.0	8.3	18.8	35.3	33.6	8	13	11.85	1.26	1.12	12	0.095
15	1.1	2.7	7.8	14.0	30.9	43.5	8	13	12.01	1.32	1.15	13	0.095
16	0.0	0.0	3.6	12.6	35.1	48.6	10	13	12.29	0.67	0.82	13	0.067
17	0.0	0.0	3.7	11.1	18.5	66.7	10	13	12.48	0.69	0.83	13	0.067
18	0.0	0.0	0.0	33.3	33.3	33.3	11	13	12.00	0.67	0.82	11	0.068

	--------	Raw Count	-----------				
LTM	**8**	**9**	**10**	**11**	**12**	**13**	**Tot**
4	6	0	0	0	0	0	***6***
5	290	26	2	0	0	0	***318***
6	2933	725	101	5	0	0	***3764***
7	9254	4760	1160	141	11	0	***15326***
8	11217	10785	5357	1212	150	2	***28723***
9	7039	11368	9976	4412	939	65	***33799***
10	2919	6484	9103	6921	2590	418	***28435***
11	1029	2537	4811	5929	3528	897	***18731***
12	277	763	1788	2997	2824	1135	***9784***
13	76	186	525	1056	1434	861	***4138***
14	14	45	124	281	526	502	***1492***
15	5	12	34	61	135	190	***437***
16	0	0	4	14	39	54	***111***
17	0	0	1	3	5	18	***27***
18	0	0	0	1	1	1	***3***
	35059	***37691***	***32986***	***23033***	***12182***	***4143***	***145094***

The next page presents the data for the WTC method:

	----- Tricks taken -----								----- Statistics -----				
WTC	**8**	**9**	**10**	**11**	**12**	**13**	**Min**	**Max**	**Mean**	**Var**	**STD**	**Mode**	**Err**
3	100.0	0.0	0.0	0.0	0.0	0.0	8	8	8.00	0.00	0.00	8	0.000
4	100.0	0.0	0.0	0.0	0.0	0.0	8	8	8.00	0.00	0.00	8	0.000
5	85.5	13.0	1.4	0.0	0.0	0.0	8	10	8.16	0.16	0.40	8	0.049
6	82.1	14.7	2.6	0.5	0.1	0.0	8	12	8.22	0.26	0.51	8	0.062
7	70.4	23.4	5.4	0.8	0.1	0.0	8	13	8.37	0.40	0.63	8	0.075
8	46.9	36.2	13.6	2.8	0.4	0.0	8	13	8.74	0.69	0.83	8	0.095
9	20.1	36.7	29.5	11.2	2.2	0.3	8	13	9.39	1.03	1.01	9	0.108
10	5.8	20.3	34.9	27.8	9.6	1.6	8	13	10.20	1.20	1.09	10	0.107
11	1.3	7.7	22.8	36.0	25.8	6.5	8	13	10.97	1.16	1.08	11	0.098
12	0.3	2.3	11.2	29.0	37.8	19.4	8	13	11.60	1.02	1.01	12	0.087
13	0.0	1.1	4.2	17.9	39.8	37.0	8	13	12.07	0.82	0.90	12	0.075
14	0.0	0.0	1.4	10.0	32.5	56.0	10	13	12.43	0.53	0.73	13	0.059
15	0.0	0.0	0.0	2.7	32.0	65.3	11	13	12.63	0.29	0.54	13	0.042
16	0.0	0.0	0.0	0.0	16.7	83.3	12	13	12.83	0.14	0.37	13	0.029
17	0.0	0.0	0.0	0.0	0.0	100.0	12	13	13.00	0.00	0.00	13	0.000

	-------- Raw Count -----------						
WTC	**8**	**9**	**10**	**11**	**12**	**13**	**Tot**
3	2	0	0	0	0	0	***2***
4	2	0	0	0	0	0	***2***
5	59	9	1	0	0	0	***69***
6	1119	201	35	7	1	0	***1363***
7	8119	2695	625	87	6	2	***11534***
8	15443	11900	4473	934	135	11	***32896***
9	8258	15023	12096	4590	913	103	***40983***
10	1813	6336	10889	8675	2981	487	***31181***
11	222	1348	4002	6319	4536	1133	***17560***
12	21	156	770	1997	2605	1334	***6883***
13	1	23	89	380	844	784	***2121***
14	0	0	6	42	136	234	***418***
15	0	0	0	2	24	49	***75***
16	0	0	0	0	1	5	***6***
17	0	0	0	0	0	1	***1***
	35059	***37691***	***32986***	***23033***	***12182***	***4143***	***145094***

And finally, the new Lawrence Method:

	----- Tricks taken -----						----- Statistics -----						
LP	**8**	**9**	**10**	**11**	**12**	**13**	**Min**	**Max**	**Mean**	**Var**	**STD**	**Mode**	**Err**
5	100.0	0.0	0.0	0.0	0.0	0.0	8	8	8.00	0.00	0.00	8	0.000
6	92.8	7.2	0.0	0.0	0.0	0.0	8	9	8.07	0.07	0.26	8	0.032
7	86.5	12.7	0.7	0.1	0.0	0.0	8	11	8.14	0.14	0.37	8	0.046
8	72.8	23.8	3.1	0.2	0.0	0.0	8	11	8.31	0.29	0.54	8	0.065
9	47.9	38.5	12.2	1.4	0.1	0.0	8	13	8.67	0.56	0.75	8	0.086
10	22.8	38.5	29.4	8.3	1.0	0.0	8	13	9.26	0.88	0.94	9	0.101
11	7.7	22.9	37.2	25.4	6.3	0.5	8	13	10.01	1.09	1.04	10	0.104
12	1.9	8.7	25.5	38.8	21.3	3.8	8	13	10.80	1.10	1.05	11	0.097
13	0.2	2.6	11.0	32.2	39.3	14.7	8	13	11.52	0.95	0.97	12	0.084
14	0.0	0.5	4.1	17.7	43.4	34.3	8	13	12.07	0.73	0.85	12	0.071
15	0.0	0.0	0.8	5.3	36.3	57.7	10	13	12.51	0.40	0.63	13	0.051
16	0.0	0.0	0.6	2.9	20.6	76.0	10	13	12.72	0.29	0.54	13	0.043
17	0.0	0.0	0.0	0.0	0.0	100.0	12	13	13.00	0.00	0.00	13	0.000
18	0.0	0.0	0.0	0.0	0.0	100.0	12	13	13.00	0.00	0.00	13	0.000

and the raw data:

	-------- Raw Count -----------						
LP	**8**	**9**	**10**	**11**	**12**	**13**	**Tot**
5	1	0	0	0	0	0	***1***
6	103	8	0	0	0	0	***111***
7	1619	238	13	1	0	0	***1871***
8	8216	2687	355	28	0	0	***11286***
9	13777	11061	3499	411	17	1	***28766***
10	8498	14377	10988	3092	373	14	***37342***
11	2449	7321	11876	8099	2018	150	***31913***
12	377	1734	5064	7702	4216	744	***19837***
13	18	249	1042	3041	3713	1391	***9454***
14	1	16	141	607	1484	1174	***3423***
15	0	0	7	47	325	516	***895***
16	0	0	1	5	36	133	***175***
17	0	0	0	0	0	19	***19***
18	0	0	0	0	0	1	***1***
	35059	***37691***	***32986***	***23033***	***12182***	***4143***	***145094***

The (a – d) vs. (c – d) comparison

Finally, a question which often comes up in Zar Points discussions. Why did I abandon the usage of the **difference between the two shortest suits (c – d)** which was the initial version of Zar Points in 2002 and came up with the version that we all know today, using **the SUM of the 3** differences between the 4 suits: (a – b) + (b - c) + (c – d) = (a – d)?

The Bridge World refused to publish the version using (c-d) stating that it will never publish a method in which the difference between **5422 and 5431** is equal to a **queen**-worth – it is simply too much. At that time I already had the "real" Zar Points in place, but avoided publishing them because most of the complaints were that "it is too complex". So I went ahead and compared the old version using (c-d) and the actual version using (a-d) and the results were crystal clear. The Bridge World was right to refuse publishing a method that relies on the (c-d) difference. Here is why.

Distribution	**Evaluation by (c – d)**	**Evaluation by (a – d)**
4-3-3-3	**3 – 3 = 0**	**4 – 3 = 1**
5-4-2-2	2 – 2 = 0	5 – 2 = 3
6-3-2-2	2 – 2 = 0	6 – 2 = 4
7-2-2-2	2 – 2 = 0	7 – 2 = 5
6-5-1-1	1 – 1 = 0	6 – 1 = 5
7-4-1-1	1 – 1 = 0	7 – 1 = 6
8-3-1-1	1 – 1 = 0	8 – 1 = 7
9-2-1-1	1 – 1 = 0	9 – 1 = 8
10-1-1-1	1 – 1 = 0	10 – 1 = 9
7-6-0-0	0 – 0 = 0	7 – 0 = 7
8-5-0-0	0 – 0 = 0	8 – 0 = 8
9-4-0-0	0 – 0 = 0	9 – 0 = 9
10-3-0-0	0 – 0 = 0	10 – 0 = 10
11-2-0-0	0 – 0 = 0	11 – 0 = 11
12-1-0-0	0 – 0 = 0	12 – 0 = 12
13-0-0-0	**0 – 0 = 0**	**13 – 0 = 13**

For the (c – d) ALL these distributions are EQUAL, while for (a-d) they fluctuate between 1 and 13!!! And now look at the first and last lines in the table only – IF you cannot distinguish EVEN between the **4-3-3-3 and 13-0-0-0,** then hey – it's not The Bridge World fault. Same ugly picture when you explore the other distributions.

That's why Zar Points use **the SUM of the 3** differences rather than just 1 of the three, which taken alone can do only harm rather than good, as we see above. And the difference between 5-4-2-2 and 5-4-3-1 is **only 1 point** rather than **2 = queen** (addressing the concern of magazine). The Bridge World published Zar Points in August 2004.

Concluding remarks

It was a remarkable experience to write the Zar Points notes – both on the Hand Evaluation and the Bidding Backbone side.

The main goal of all this was not to CHANGE your current system, whichever it happens to be, but to present you with lots of Data that you probably have never thought of, and some different angles of looking at that data. Zar Points Bidding Backbone is based on this data, the Zar Points Hand Evaluation, and the analysis of the weak points of the current bidding systems, reflected on the background of the analyzed data.

If I have encouraged you to think (and re-think) about the different aspects of the game and their probabilities presented in (I hope) an easy-to-read table format, then I have achieved the main goal of all these exercises.

The Zar Points Bidding Backbone is not a Complete Bidding System by any stretch of imagination – that's why it is called "Bidding Backbone" rather than "Bidding System". It only presents the **MAIN STRATEGY** of climbing the Bidding Tree.

I'll certainly be happy to have a look at YOUR interpretations and views engendered by the suggested lines of reasoning so do not hesitate to send me an email at:

Zar@ZarPoints.COM

And while mentioning Zar Points.COM, it is a good idea to check the website:

http://WWW.ZarPoints.COM

and play around with the "Zar Bid Machine" and the "Zar Count Machine" – this endeavor itself may spark some NEW thoughts about the wonderful game of Bridge.

And while exploring all these new "niches" do not forget the main reason we are doing all this **– ENJOY THE GAME!**

ZAR