Hand Evaluation Revisited

Provided by Neil H. Timm

In duplicate contract bridge, natural and artificial strong club bidding systems have been devised to enable partners to describe their hands to each other so that they may reach their optimal suit or NT contract.

For a history of hand evaluation in contract bridge go to:

http://homes.ottcommunications.com/~dsonder/Bridge/Goren%20Work%20Mc%20Campbell%20Anderson.pdf

Honor Tricks (HT)

In the early days of contract bridge Ely Culbertson's honor trick system, which assigned point values to combinations of honors, was used for hand evaluation. AK is 2.0 honor tricks, AQ is 1.5 honor tricks, A or KQ is 1 honor trick, and Kx is 0.5 honor tricks.

An opening hand required 2.5 honor tricks.

Quick Tricks (QT)

Quick tricks are similar to, but not the same as, Honor Tricks in the Culbertson system. They are calculated suit by suit as follows:

- 2 quick tricks = AK in the same suit
- 1.5 quick tricks = AQ in the same suit
- 1 quick trick = A or KQ in the same suit
- 0.5 quick trick = Kx (never K singleton)

This method is used when replying to very strong artificial opening bids playing for example Two-Over-One, Acol and strong club systems.

Harold S. Vanderbilt first published an artificial strong club system in 1934, which used only 3 quick tricks to open any hand. He updated the system in 1964 to use the 4-3-2-1 HCP method used by natural bidding systems. Today most artificial systems only use the 4-3-2-1method of hand evaluation, which follows. In some strong club systems, some use 10-12HCP to open 1NT.

High Card Points (HCP)

Hand evaluation using the top honor cards (A, K, Q, and J) and 4-card major systems was first popularized by Milton Work in the early 30's and later by Charles Goren in the 50's

and is now known simply as the high-card point (HCP) count method. The basic evaluation method assigns numeric values to the top four **honors cards** as follows:

- Ace = 4 HCP
- King = 3 HCP
- Queen = 2 HCP
- Jack = 1 HCP

Using these point-count values there are a total of 10 HCP in each suit or a total of 40 HCP in a bridge deck. With four players, the average is 10 points per hand and an opening bid TODAY requires at least 11/12HCP (Goren required 13HCP). However, weak NT by some only requires 10-12HCP.

The "traditional" 4-3-2-1 HCP methods for natural bidding systems is only accurate for balanced NT hand evaluation where the balanced point requirements for game in the two hands are about 25 for game, 33 for a small slam (6NT), and 37 for a grand slam (7NT).

The most popular natural systems today are Five-card Majors systems where 1♥/1♠ shows at least 5-cards first introduced by the bridge expert Geoffrey Mott-Smith in1927 from New York and revived by Alvin Roth and Tobias Stone in the 1950's.

Playing Tricks (PT)

For relatively strong hands containing long suits, playing tricks are defined as the number of tricks expected, with no help from partner, given that the longest suit is trumps. Thus, for long suits the ace, king and queen are counted together with all cards in excess of 3 in the suit; for short suits only clear winner combinations are counted:

- A = 1, AK = 2, AKQ = 3
- KQ = 1, KQJ = 2

In natural systems like Two-Over-One or Acol, a strong artificial bid contains about 8 playing tricks.

Total Points (TP)

Hand evaluation systems are becoming more and more complicated. A simple solution that considers the HCP, the number of cards in the two longest (TL) suits, and Quick Tricks is the Total Points method proposed by the Australian expert Ron Klinger.

The formula is simple: TP=HCP+TL+QT where a hand is opened with at least 22TP with the following modifications:

Point Deductions

1 for singleton A/K/Q or ½ point for a singleton A or ½ for an A, K, Q, J honors in doubleton suits

Point Additions for Quality Suit/Suit Shortage/Voids

½ for suits having top 3 of 5 Honor Combinations (Quality Suits)

½ for extra shortage (Singleton/Void) if the 2 longest suits include 8/9 cards

½ for a Void if the 2 longest suits contain 10/11 cards

Example:

(1) AQxxx Axxxx xx x = 10HCP + 10TL + 2.5QT=22.5 so open with no deductions or additions

(2) xxxxx xxxxx AQ A = 10HCP + 10TL + 2.5QT=22.5 minus 1.5 deduction for honors in short suits (1 for AQ honor doubleton and 0.5 for A singleton) =21 TP (do not open)

Losing Trick Count (LTC)

This is an alternative (to HCP) method to be used in situations where shape and fit are of more significance than HCP in determining the optimum level of a **suit contract** once a fit has been found. The "losing-tricks" in a hand are added to the systemically assumed losing tricks in partners hand (7 for an opening bid of 1 of a suit) and the resultant number is deducted from 24; the net figure is the number of tricks a partnership can expect to take when playing in the established suit.

The basic method assumes that an ace will never be a loser, nor will a king in a 2+ card suit, nor a queen in a 3+ card suit, thus

Void = 0 losing tricks.
Singleton other than an A = 1 losing trick.
Doubleton AK = 0, Ax, Kx or KQ = 1, xx = 2 losing tricks.
Three card suit AKQ = 0, AKx, AQx or KQx = 1 losing trick.
Three card suit Axx, Kxx or Qxx = 2, xxx = 3 losing tricks.

Suits longer than three cards are judged according to the three highest cards since no suit may have more than 3 losing tricks.

One opens a hand with 6/7 losers.

Zar Points (ZP)

Zar points are statistically derived method for evaluating bridge hands developed by Zar Petkov. The statistical research Petkov conducted in the areas of hand evaluation and bidding is useful to bridge players, regardless of there bidding system.

His research showed that the Milton Work/Charles Goren method, even when adjusted for distribution, is not sufficiently accurate in evaluating all hands. As a result, players often make incorrect or sub-optimal bids. Zar Points provides a quantitative method that takes into account HCP, Controls, Length, and Shape.

Zar HCP (ZHP) =HCP plus Control Points (A=2 and K=1).

ZP =ZHP + sum of the lengths of the two longest suits + the difference between the longest suit and the shortest suit where 26-30 Zar points (e.g., dividing by two 13-15 points) are needed for an opening hand.

When re-evaluating a hand based on earlier bidding, add points for:

- Support: add one point for each honor in partner's suit (up to two)
- Finesse: subtract or add a point for honors in opponent's suits depending on whether they are on or off side
- Unguarded Honors: discount honors in short suits bid by opponents
- Extra Trump Support: add three points for each trump over the promised length
- Secondary Fit: add three points for any invitational second suit card over 4
- Super-fit: After agreement on trumps, add points for each trump over 8: 3 if your shortest suit is a void, 2 for a singleton, 1 for a doubleton

Computer Based Evaluation

Based upon an unknown computer analysis of hands in suit contracts, Marty Bergen claims in his 2002 book *Hand Evaluation: Points Schmoints!* claims that the 4-3-2-1 values tend to undervalue aces and tens and overvalue queens and jacks (quacks). Bergen recommends a more accurate point assignment method:

- Ace = 4.5 HCP
- King = 3 HCP
- Queen = 1.5 HCP
- Jack = 0.75 HCP
- Ten = 0.25 HCP

Here again the suit total remains 10 so that a bridge deck contains 40 points. Bergen recommends his Adjust-3 Method of hand evaluation.

His method does not use his fractional values, but considers HCP, overvalued and undervalued honors, suit length, dubious honor doubletons, and suit quality to obtain starting points and then fit/support points are used by partner and finally “Bergen Points” are next defined for the opening bidder during the auction.

Observe that Bergen’s values are consistent with the honor values for the A, K, Q, J recommended by Oswald Jacoby and others in the 1935 Four Aces’ Book if you divide by 1.5:

- Ace = 4.5/1.5 = 3.0 HCP
- King = 3/1.5 = 2.0 HCP
- Queen = 1.5/1.5 = 1.0 HCP
- Jack = 0.75/1.5 = 0.5 HCP

For this approach, there are only 26 points in a deck and 9.5 points are needed to open a hand.

The first published results of a computer statistical analysis of bridge hands was first published by Richard Cowan ("Applied Statistics", Journal of the Royal Statistical Society, 1987) who showed that Aces and Kings in balanced hands are **overvalued** by **10%** combined (resp. 6.7% + 3.3%) by the original Milton Work Point Count. Queens are about right and Jacks and 10s are **undervalued** by 10% combined.

Jackson and Klinger propose for advanced players the “Banzai Point Count” method, which accurately reflects the statistical findings that the values should be:

A=5 K=4 Q=3 J=2 10=1

(Statistical Values: A=5 K=3.97 Q=3.06 J=1.93 10=0.95)

Where now there are 15HCP in a suit and 60 points in a deck.

For consistency with Milton Work they also proposed the **Extended Milton** point count values:

A=4 K=3 Q=2 J=1 10=½

Which also accounts for 10’s.

Extended Milton (EM)

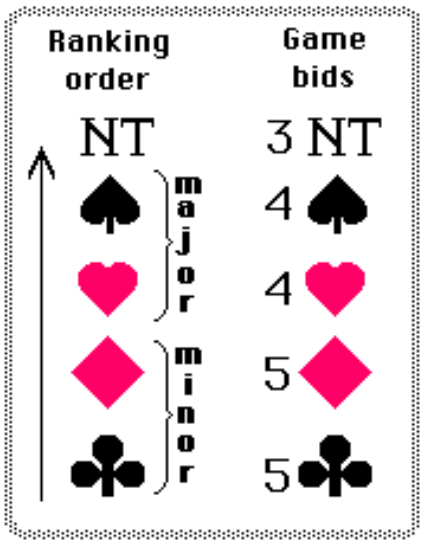
The Extended Milton method point count value increases the total points in a deck from 40 to 42 HCP, and therefore statistically restores the **minimum game contract requirement** from 25 back to **26 points**. This has the following advantages:

1. It **restores** the Standard (American) Bidding System to its (approximate) **original values**.

2. It reflects the hand value with **greater accuracy** than the original Milton Point Count system.
3. It **reduces** the **overvaluation** of **Aces and Kings** in balanced hands by a third: to only 6.7%.
4. It incorporates the more **aggressive** Game contract **approach** of recent years. $^{25}/_{40}$= 62.5% of total Trick Taking Potential (TTP) $^{26}/_{42}$= 61.9% of total TTP

The Banzai Point Count may be superior to Extended Milton. With hand combinations containing at least one **unbalanced** hand one may use a combination of Extended Milton, The Losing Trick Count Method and Quick Tricks for hand evaluation.

Since there are four 10s in a pack any hand should on average include **one 10**. Many 25 point hand combination (as valued by the old system) will therefore on average include two 10s and as a consequence have **26 points** when valued using the Extended Milton Point Count. Indeed about 45% of old 25-point hands, which statistically don't make a game contract, are in most cases **deficient in 10s**.



HAND VALUATION

High Card Points : A=4 K=3 Q=2 J=1 10=½
Length Points : 1 point for each card in excess of four in a suit.
Shortage Points : Void = 5, Singleton = 3, Doubleton = 1 } count ONLY with a TRUMPFIT

HAND SHAPE

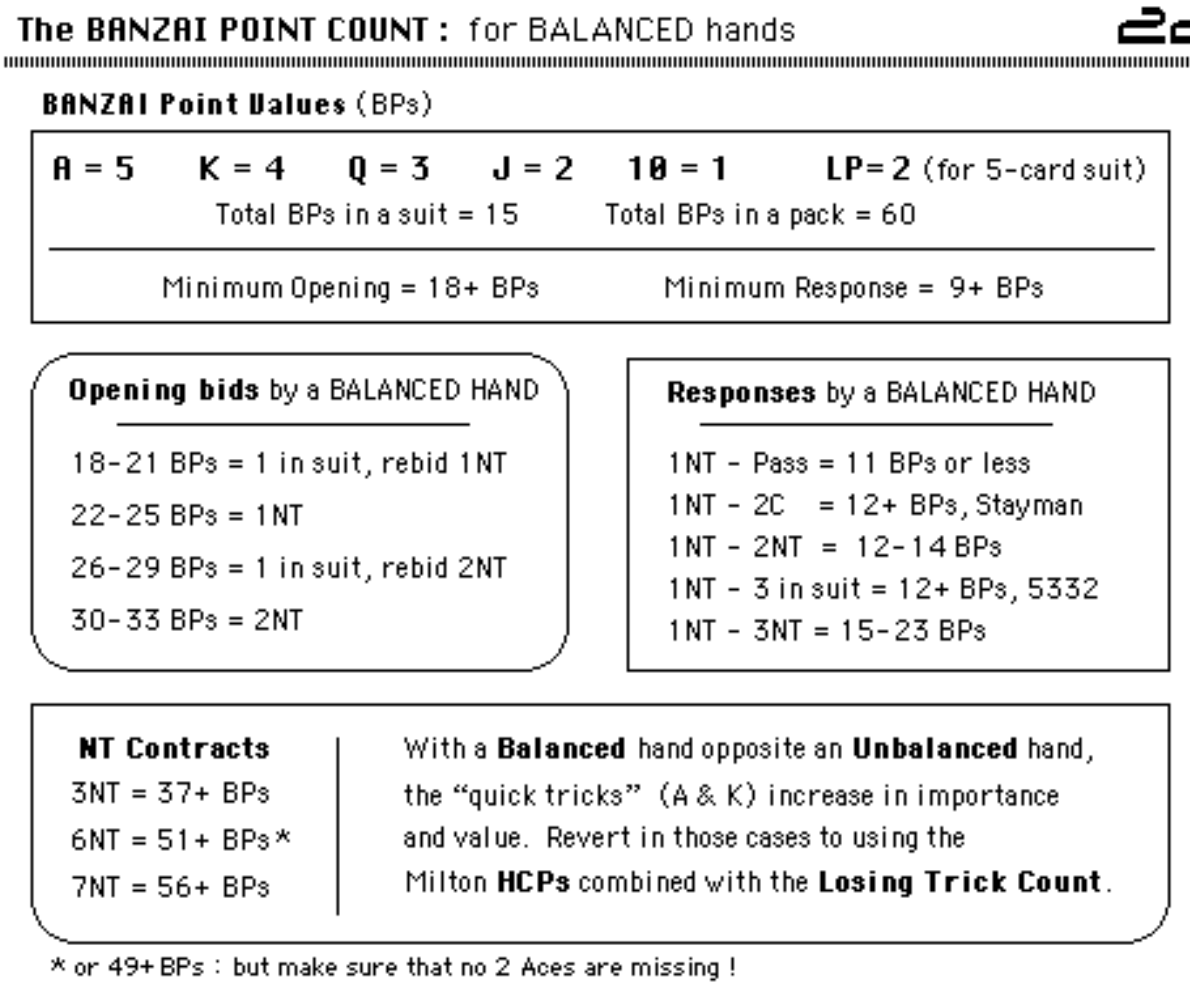
Balanced = nil , or one Doubleton (4333, 4432, 5332)
Semi-balanced = two, or three Doubletons (5422, 6322, 7222)
Un-balanced = a Void, or Singleton (5521, 5530, 6511, etc.)

What you need to find out about PARTNER's HAND

1. Do you have a **Trumpfit** : 8 trumps in the combined hands ?
2. Do you have enough points to make a GAME- or SLAM- contract ?

You need : **26 points** for 3NT, 4♥, 4♠ | **33 points** for 6♣♦♥♠ NT
29 ,, for 5♣, 5♦ | **37** ,, for 7♣♦♥♠ NT

Banzai Point Count (BPC)



It may take many years for bridge players to change from a 4-3-2-1-hand evaluation methodology, which uses a "40 point" deck even if methods like Zar, Extended Milton or Banzai may be superior.

If this is you, you might want to read the book by Patrick Darricades (2020) "Optimal Hand Evaluation in Competitive Bidding" a Master Point Press publication who refines the Milton Work/Charles Goren with sound adjustments for upgrades and downgrades.

Optimal Hand Evaluation (Overview)

Playing any bridge system, the most challenging aspect of the system is hand evaluation to help pairs reach the "best" correct/optimal contract.

Do you count HCP (H) or H+L (HL) or H+D (HD) or HLD where D=distribution?

Consider the following hand: ♠ AKQJxxx ♥ xxx ♦ xx ♣ x

This hand has 10 H points, 13 HL/HD points, and 15 HLD points.

Returning to the above example, Darricades's optimal count method gives the hand 18 ½ total points! How would you count the hand?

Let's look at another example were we have two hands.

	North	South
	♠ A76	♠23
	♥ 78	♥A56
	♦K95	♦AQJ43
	♣AQ987	♣K57
4321 System		14HL +15HL =29HL pts or 10 ½ tricks
Bergen Adjust 3 Method		14 HL+16HL = 30 pts or 11 tricks
ZAR points		29 Z pts + 30 Z points = 29 ½ HL points (59/2=10 ½ tricks)
Darrecades Optimal Count		15HL+ 17HL +4 Fit pts = 36HLF points = 13 tricks

None of the "standard" methods show a small slam – let alone a grand slam!

What is his method? An overview of the system follows

HONOR POINTS (H)

Ace: 4½ pts K: 3pts Q w/A, K, J: 2 pts Qxx: 1½ pts Qx=1pt
J w/A, K, Q: 1pt Jxx: ½ pts Jx=0 pts

Value of **10s** vary: 10K=½, 10A=0, 10Q=1, 10J=1, 10Jx=2
No Aces = -1 pt (Only Opener) No Q =-1 No K=-1 (all hands) with Max=-2
3Ks = +1 pt, 4Ks = +2pts, 4Qs = +1pt
Singleton honor = -1pt Honor doubletons = -1 pt for 2 honor doubletons
3+ Honors in 6-card suit = +2 pts or in a 5-card suit= +1 pt
These above rules apply to all contracts, suits and NT.

Having defined Honor Points, we next turn to Length Points.

LENGTH POINTS (L)

5-card suit with at least a QJ/K = 1pt
6-card suit with at least QJ/K= 2 pts w/o a QJ/K= 1pt
7-card suit=2pts for each card for 7th on (even without an honor)

Next we define Distribution points

DISTRIBUTION POINTS (D*)

VOID = 4pts Singleton= 2 points **ONE** doubleton= 0 pts **TWO** doubletons = 1 pt

4333 = -1 pt
Singleton in NT contract = -1pt

***The values defined for HLD apply to Opener's hands NT and suits. Responder hands are counted for HL pts only & no more than 2Lpts. D points are applied only when a suit fit is found. These points are "STARTING POINTS".**

We cannot address Fit (F) Points, Distribution-Fit Points (S), Misfit Points and Wasted Honor Points until the auction begins.

A fit is defined as a known 8-card suit fit in all suits for both suit and NT contracts.

SUIT FIT POINTS (F)
8/9/10 card fit= +1/2/3 pts (all suits)

(SEMI-FIT (F)
Add +1 if you hold an honor doubleton Kx/Qx/J10/Jx doubleton (other than the Ace) in partners long suit (5+cards). Both the opener and the responder make the +1 point adjustment with 2-card suit support.

DISTRIBUTION-FIT POINTS "SHORTNESS" (S)

Number of trumps	4	3	2
Void	4pts	3pts	2pts
Singleton	3pts	2pts	1pts
Doubleton	2pts	1pts	0pts

MISFIT POINTS
Opposite a long suit in Partners Hand -3/-2/-1 for void /singleton/doubleton

WASTED HONOR ADJUSTMENTS
K/Q/J Honors opposite a S/V -2/-3 Non Honors opposite S/V +2/+3
Ace opposite singleton= +1

Using the OHEM one needs 26 points for NT, 27 for a Major suit game, 30 points for a Minor suit game, 33 points for a small slam in a suit, 34 points for a small NT slam and 36/37 points for a grand slam.

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Recommendations

For partnerships to reach their best suit contract, players always evaluate and re-evaluate the trick-taking potential of their hands as the auction proceeds and additional information about partner's hand and the opponent's hands becomes available during the auction.

While many methods provide guidelines for opening hands with minor modifications a dynamic method is needed that is fluid with the exchange of information during the bidding process.

Reviewing the hand evaluation options, I will rank the methods

1) Optimal Hand Evaluation
2) Zar Points (tends to overvalue distribution over honor values and ignores fit points)
3) Bergen's Adjust-3 (undervalues fit points)

LTC, TP, PT, EM, and BPC are helpful aids, but are not dynamic. This is also the case for bidding rules like the Rule of 22, 20,19, and 15 for example.