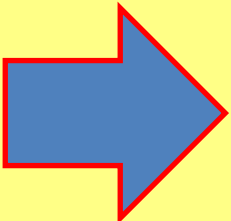


Applying Engineering Principles to



by
Ir Dr FC Chan

20 August 2022

Perfect Window Bidding System

ALERT

2NT 2♣

2NT 2♠

3NT 3♠ 3♥ 3♦ 3♣ T

4NT 4♠ 4♥ 4♦ 4♣

5NT 5♠ 5♥ 5♦ 5♣

6NT 6♠ 6♥ 6♦ 6♣

7NT 7♠ 7♥ 7♦ 7♣

XX stop X

TD PASS A

Contents (Part I)

1. Problem Solving
2. Select-Check-Operate
3. Information Contents
4. Non-linear Approach
5. Noise Model
6. Safety Net
7. Opening Probabilities
8. Testing and Commissioning
9. Conclusion

Applying Engineering Principles to Prefect Window Bidding System



28 May 2022 Secondary Schools Bridge Competition

冠軍：聖言中學
亞軍：拔萃男書院
季軍：聖保羅書院
殿軍：保良局何蔭棠中學

A bridge event – many tables of 4 persons

One team consists of 4 persons, Team match: 4 persons vs 4 persons

Applying Engineering Principles to Prefect Window Bidding System



**The 45th World 2021 Bridge Team Championships
27 Mar – 9 Apr 2022 at Salsomaggiore Terme, Italy**

Applying Engineering Principles to Prefect Window Bidding System

The 45th World 2021 Bridge Team Championships Results



BERMUDA BOWL

1st place: SWITZERLAND
2nd place: NETHERLANDS



VENICE CUP **1st place: SWEDEN**
2nd place: TURKEY



D'ORSI TROPHY

1st place: POLAND
2nd place: INDIA



WUHAN CUP **1st place: FRANCE**
2nd place: USA1

























Applying Engineering Principles to Prefect Window Bidding System

**Bermuda Bowl result
After initial 23 rounds**

**Hong Kong ranked
17 out of 24 teams**



Ranking after Round 23

1		SWITZERLAND	312.24
2		NETHERLANDS	307.38
3		USA 2	301.13
4		HUNGARY	290.11
5		ENGLAND	287.30
6		ITALY	286.03
7		NORWAY	284.53
8		USA 1	272.29
9		DENMARK	263.00
10		ISRAEL	262.49
11		SWEDEN	258.10
12		AUSTRALIA	254.40
13		INDIA	245.39
14		BULGARIA	225.11
15		NEW ZEALAND	220.44
16		EGYPT	214.33
17		CHINA HONG KONG	211.23
18		SOUTH AFRICA	191.55
19		CANADA	191.06
20		GUADELOUPE	164.90
21		UAE	141.68
22		SINGAPORE	119.65
23		URUGUAY	106.90
24		ARGENTINA	97.16

Applying Engineering Principles to Prefect Window Bidding System



Part 1: Bidding

Part 2: Play



Applying Engineering Principles to Perfect Window Bidding System

Part 1: Bidding

Bidding Board Moving plate

The position of
the seat of 4
players are:

North
East
South
West



Applying Engineering Principles to Prefect Window Bidding System



Hand strength: High cards Points (HCPs)

4 suits: Spade♠, Heart♥, Diamond♦ and Club♣

Ace=4, King=3, Queen=2, Jack=1

A total of 40 HCPs

Applying Engineering Principles to Prefect Window Bidding System

Applying
Engineering
Principles to



1. Problems Solving

- There are 12 top skills for engineers
- Problem Solving Skill ranks top
- A large part of an engineer's job is assessing a situation, identifying the problem and then finding the required solution.

1. **Problem solving**
2. Information technology
3. Industry skills
4. Pressure management
5. Teamwork
6. Creativity
7. Structural analysis
8. Communication
9. Attention to detail
10. Continual professional development
11. Data modeling
12. Leadership

Applying Engineering Principles to Prefect Window Bidding System

1. Problems Solving

- Problem existed long time
- No satisfactory solutions on cases like

West	East
1C	1H

West	East
1H	2H

How many number of cards in H suit in East Hand?

How many HCP in East Hand?

Situation

Opener in interpreting the meaning don't have no definite rule and hence further bidding is based on guess which results in overbid or underbid.

Problem

Opener is difficult to assess the strength of the response of 1H?

Basically too much information is included for expressing the bid of 1H

Applying Engineering Principles to Perfect Window Bidding System

1. Problems Solving

- Problem existed long time
- No satisfactory solutions on cases like

W	E
1C	1H

W	E
1H	2H

How many number of cards in H suit in East Hand?

How many HCP in East Hand?

- One solution is “2 over 1 system” so that 2 level bid is forcing to game’ but the system introduced many not nature steps, including 1NT forcing, 2C and 2D bids with 3 cards etc.

- In “**Perfect Window**”, the solution is to have 1D bid containing multiple meanings and 1H bid is limited to 6-10 HCPs with 5 cards H suit. More details in part II of this seminar. (投石問路)

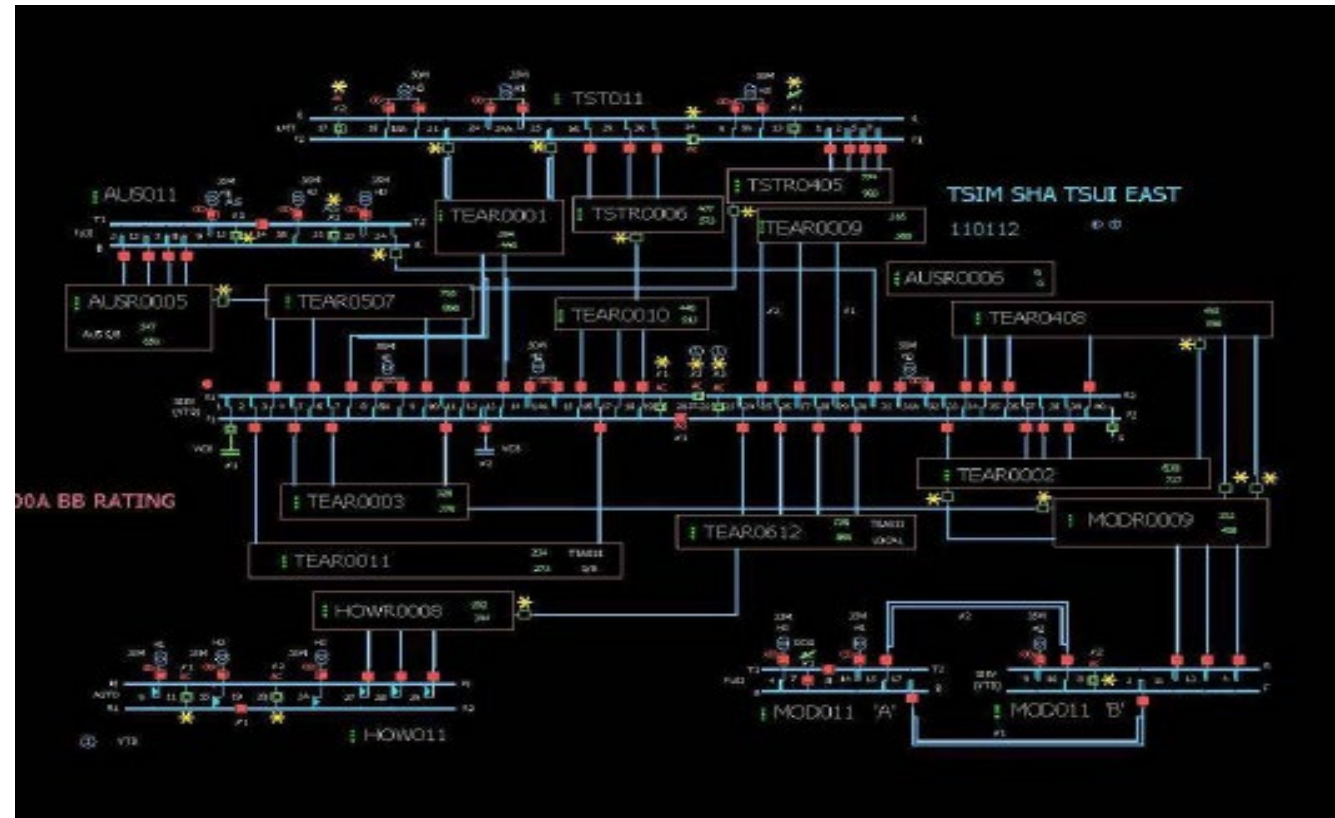
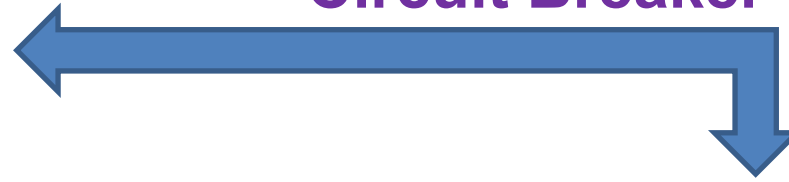
Applying Engineering Principles to Prefect Window Bidding System



Power System Control Centre

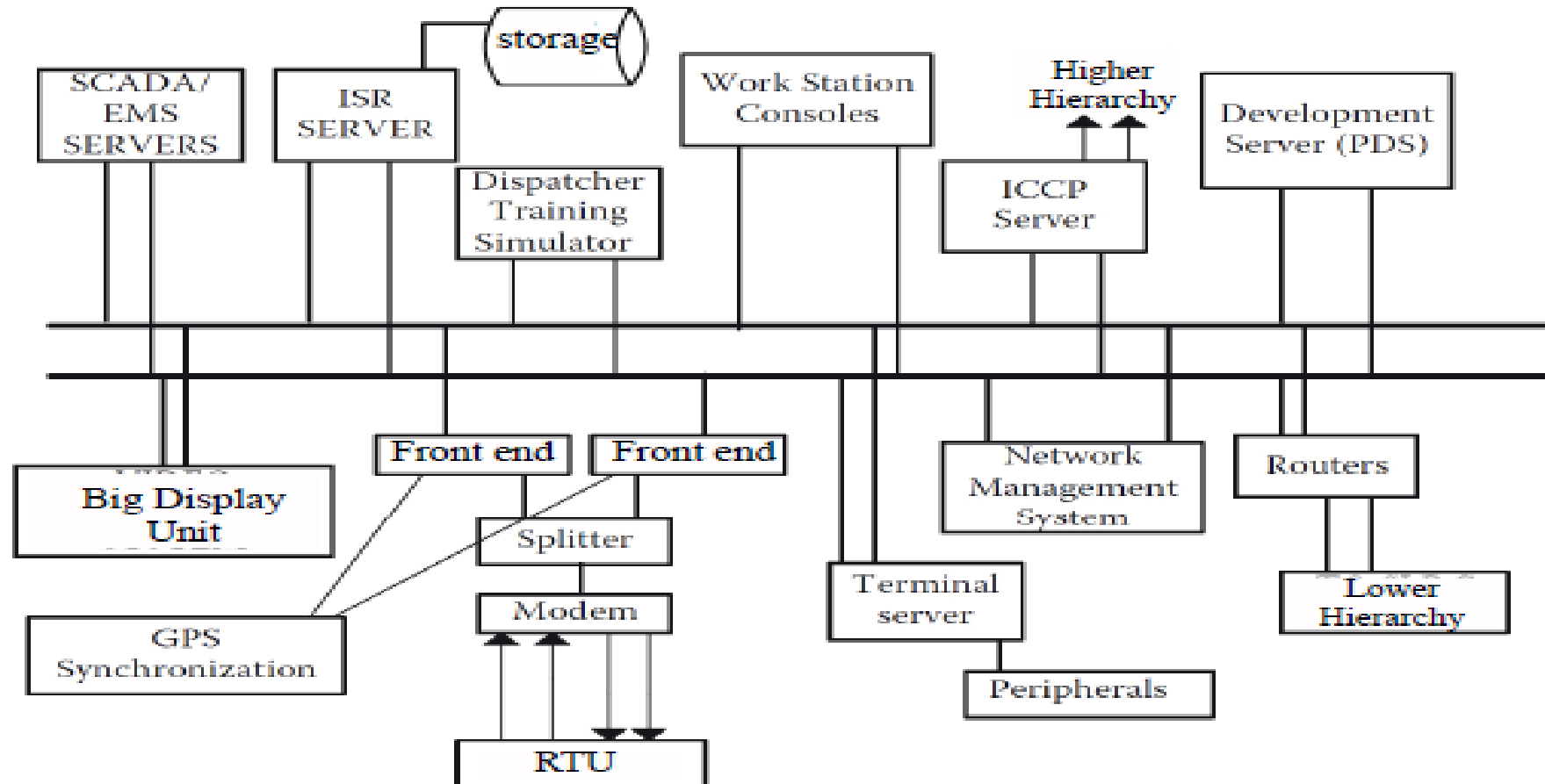
Supervisory Control and Data Acquisition System

Remotely switching a
Circuit Breaker

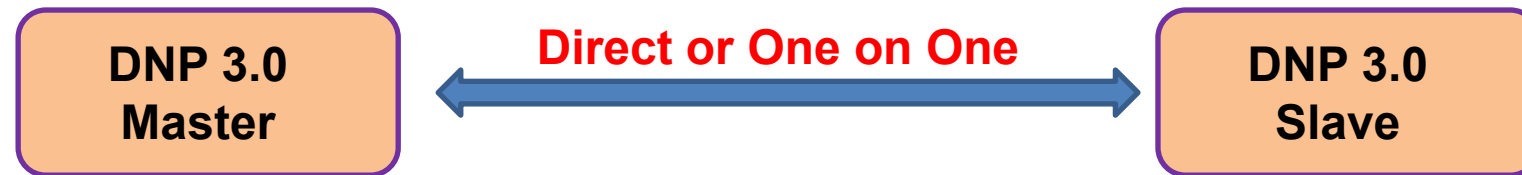


Applying Engineering Principles to Prefect Window Bidding System

Supervisory Control and Data Acquisition System



Master – Slave Approach



check status with feedback, then confirm and execute.

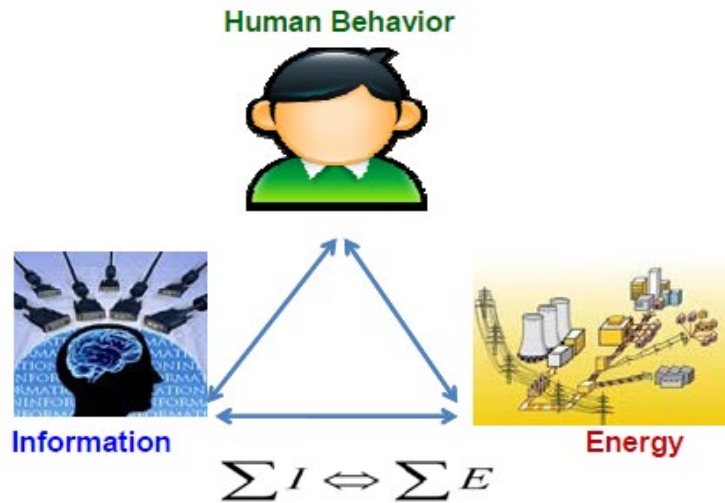
2. Important Task using Select-Check-Operate

- Use of protocol in system operation connecting control centre and remote terminal unit
- Protocol: DNP3.0 (like a bidding system details)
- For **important** switching to be carried out, system control need to **check status with feedback, then confirm and execute.**

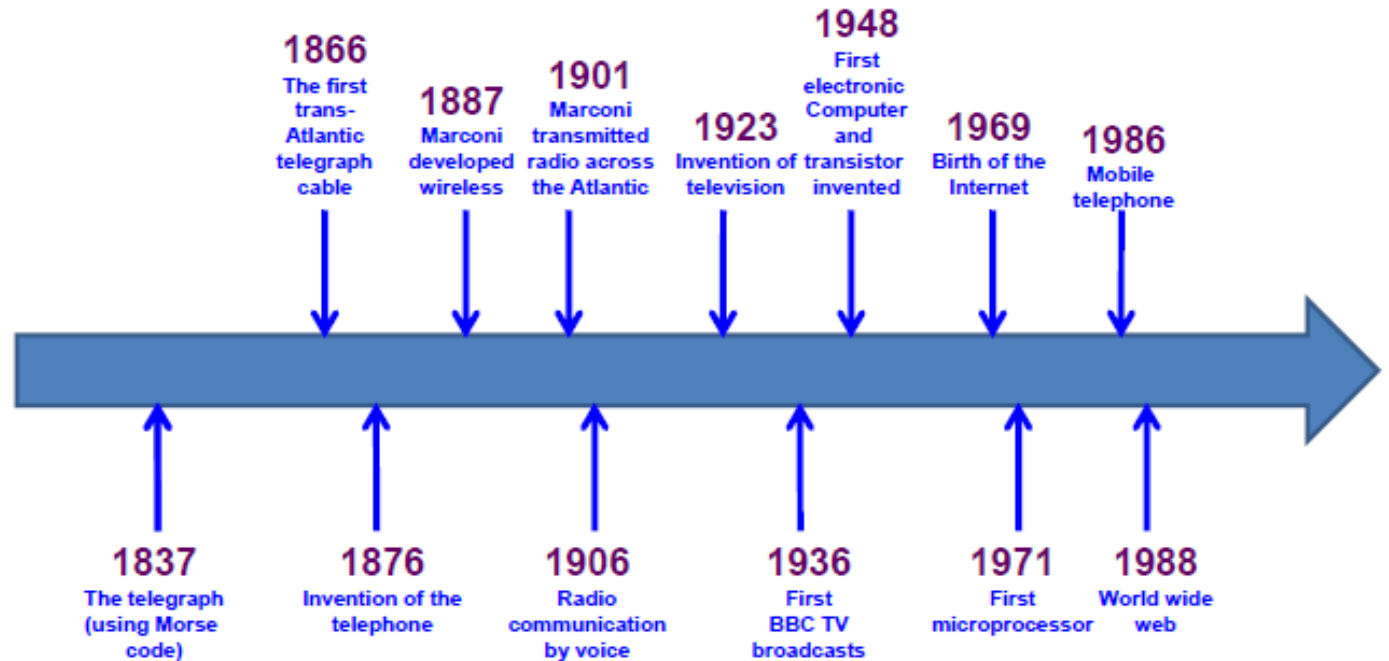
- For the bidding system, when the combined hand strength is around 28+ HCPs and above, it is close to the slam zone, we need to check keycards before bidding slam.

- In window, there are some important check to explore slam. These include Suit Support Asking Bid, General Control Asking Bid and Key Control Asking Bid, Special Suit Asking Bid and Opening Suit Trump Honour Asking Bid. More details in part II of this seminar. (劍問江湖，號令天下)

Information and Energy



History of Information Technology



Information content = $\log_2\{1/p(x)\}$ Shannon

Information Theory

Information content = $\log_2\{1/p(x)\}$ Shannon

If the information has a probability of occurrence is 1/6, e.g. a dice

$$\begin{aligned}\text{Information content} &= \log_2\{1/(1/6)\} \\ &= 2.585 \text{ Shannon}\end{aligned}$$

If the information has a 100% certainty to occur

$$\begin{aligned}\text{Information content} &= \log_2\{1/1\} \\ &= 0 \text{ Shannon}\end{aligned}$$

It is essential not to have a bid containing lot of information

It is required that each bidding step contain small amount of information and make use of all available bidding space

3. Information Contents

Information content = $\log_2\{1/p(x)\}$ Shannon

- In designing the contents to be responded, it should be limited to a few possible contents thus ensuring information so sent out can provide sufficient meanings.
- Information to be sent: **HCPs information** (Total Points, if Distribution included), Suit length or **distribution information**.
- Each bidding response should be of **a low Shannon** so that the contents can be precisely interpreted.
- Hence the “Window” 2C asking bid is an important step for bidding with a low Shannon.

Applying Engineering Principles to Perfect Window Bidding System

Hand strength: High cards Points (HCPs)

4 suits: Spade♠, Heart♥, Diamond♦ and Club♣

Ace=4, King=3, Queen=2, Jack=1

A total of 40 HCPs in 52 cards.

If evenly distributed, each hand has an average of 10 HCPs



Applying Engineering Principles to Perfect Window Bidding System

Probabilities Distribution

High Card Points Probabilities

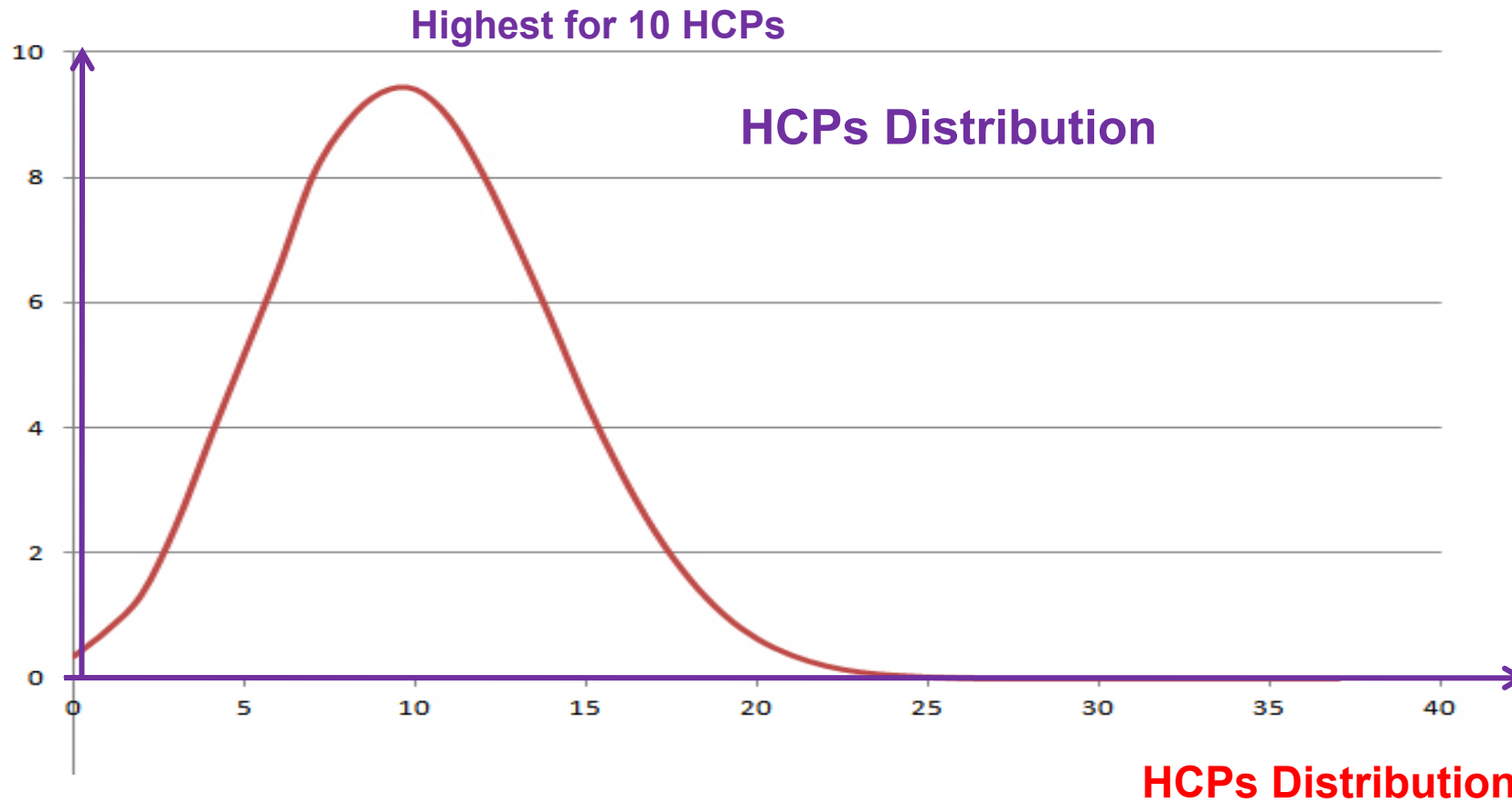
High Card Points	Probabilities	High Card Points	Probabilities
37	0.00000000	18	0.01605080
36	0.00000000	17	0.02361690
35	0.00000000	16	0.03310920
34	0.00000000	15	0.04423680
33	0.00000000	14	0.05693320
32	0.00000002	13	0.06914330
31	0.00000006	12	0.08026870
30	0.00000022	11	0.08944680
29	0.00000067	10	0.09405110
28	0.00000186	9	0.09356230
27	0.00000491	8	0.08892190
26	0.00011668	7	0.08028090
25	0.00026428	6	0.06554100
24	0.00055903	5	0.05186190
23	0.00111904	4	0.03845440
22	0.00210043	3	0.02462360
21	0.00377867	2	0.01356120
20	0.00643536	1	0.00788442
19	0.01036170	0	0.00363896

← Highest

Opening with 11 HCPs

Applying Engineering Principles to Prefect Window Bidding System

Probabilities Distribution



4. Non-linear Approach

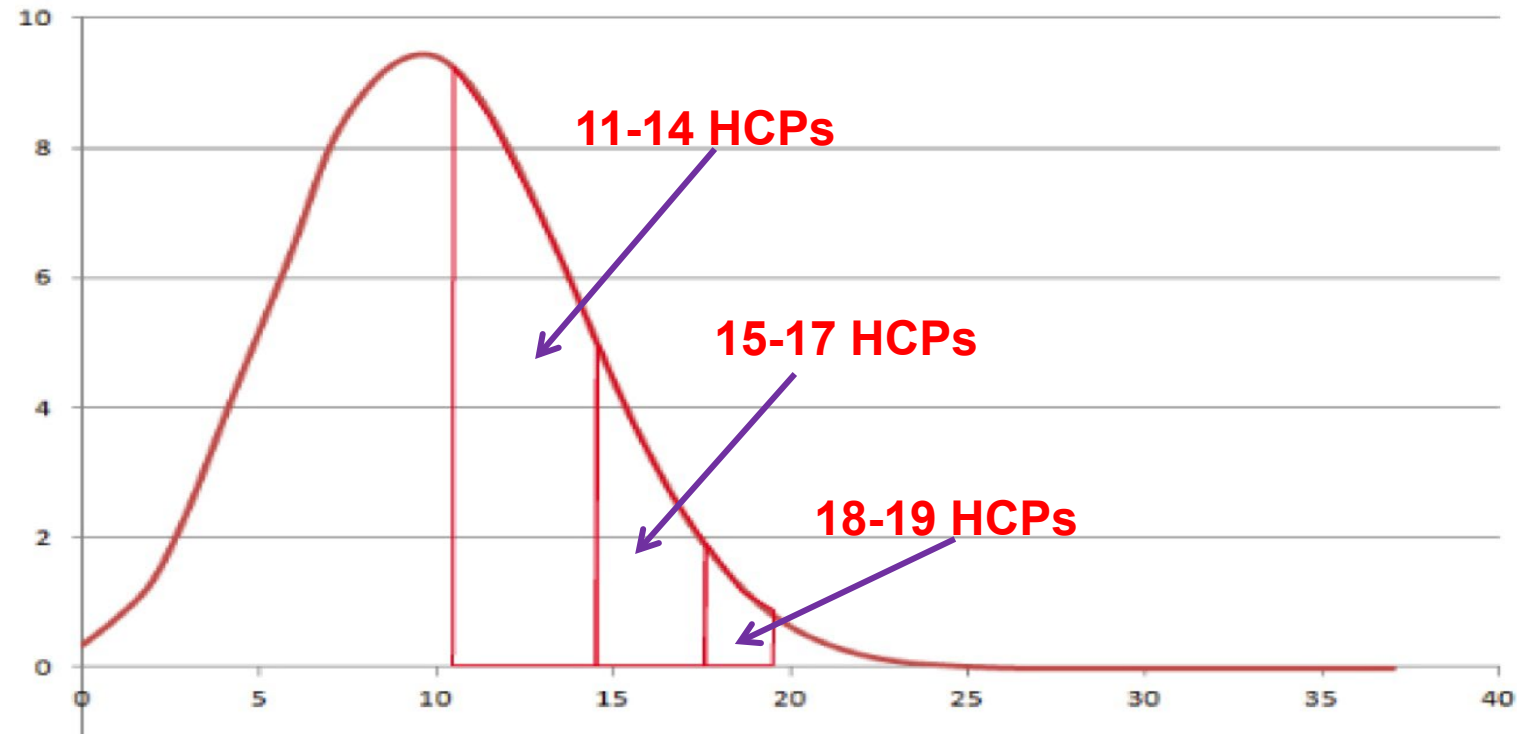
- Information window is not designed to be linear
- windows: 11-14, 15-17, 18-19 HCPs

5 cards	11, 12, 13, 14 Window 1	15, 16, 17 Window 2	18, 19 Window 3
6 cards	11, 12, 13, 14 Window 4	15 + Window 5	7 cards Window 6

- There are a lot of possible combinations to explore game for 11-14 HCPs range
- The other 2 is already in the game zone. The major target is to explore the most safe contract
- For the 18-19 HCPs, it is in the middle of slam zone. Hence the focus can be slightly different.

Applying Engineering Principles to Prefect Window Bidding System

**Probabilities
Distribution**

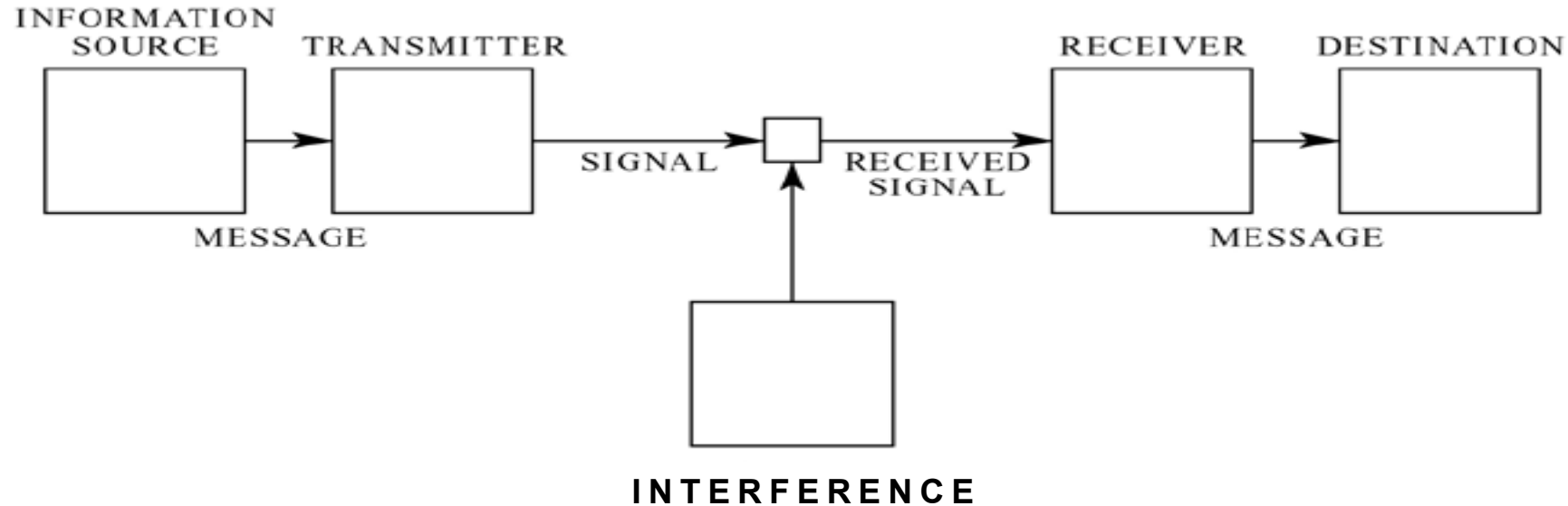


HCPs Distribution

Non-linear for better space for further bidding

Applying Engineering Principles to Perfect Window Bidding System

5. Noise Model



- When bidding being interfered. Reception is normally not a problem. But partner bid is required to establish another starting point.

- Replacement X is a tool

- Asking bids reply in steps, if interfered, D0P1 or RD0P1.

5. Noise Model

- For the case of normal bidding, if bidding being interfered:
 - for the Bid above the interference bid, it is unaffected.
 - For Bid exactly the interference bid, a replacement X is used.
 - for Bid intended to bid, it is implied that the bid is below the interference bid

- For the case of asking bidding, if bidding being interfered:
 - Use D0P1 or RD0P1

6. Safety Net

- 2H/2S opening is an attacking bid to erase opponent bidding space
- It also create risks particularly when vulnerable.
- The use of 3C for pass or correct

- For 2D opening with 2 suiters, the 2H is also a safety net

- After 1C opening, the 1D bid is also a safety net to explore suit fits

Some bidding is raised to a higher level to deter opponent normal bidding

Some form of safety factor is considered.

Applying Engineering Principles to Prefect Window Bidding System

Suit Distribution Probabilities

Each person has 13 cards

Distribution of a Hand

Distribution	Probabilities	Distribution	Probabilities
		5-3-3-2	0.15517000
All the rest	0.0050501	5-4-3-1	0.12931000
		5-4-2-2	0.10580000
4-4-3-2	0.21551000	5-5-2-1	0.03173900
4-3-3-3	0.10536000	5-4-4-0	0.01243340
4-4-4-1	0.02993220	5-5-3-0	0.00895203
Having 4 cards	0.3508022	Having 5 cards	0.4434044
6-3-2-2	0.05642490	7-3-2-1	0.01880830
6-4-2-1	0.04702070	7-2-2-2	0.00512954
6-3-3-1	0.03448190	7-4-1-1	0.00391840
6-4-3-0	0.01326230	7-4-2-0	0.00361698
6-5-1-1	0.00705311	7-3-3-0	0.00265245
6-5-2-0	0.00651056	7-5-1-0	0.00108509
6-6-1-0	0.00072340	7-6-0-0	0.00005565
Having 6 cards	0.1654769	Having 7 cards	0.0352664

← Highest

Highest probability for Opening with a 5 cards suit

Applying Engineering Principles to Perfect Window Bidding System

HCPs Probabilities Distribution

High Card Points Probabilities

High Card Points	Probabilities	High Card Points	Probabilities
37	0.00000000	18	0.01605080
36	0.00000000	17	0.02361690
35	0.00000000	16	0.03310920
34	0.00000000	15	0.04423680
33	0.00000000	14	0.05693320
32	0.00000002	13	0.06914330
31	0.00000006	12	0.08026870
30	0.00000022	11	0.08944680
29	0.00000067	10	0.09405110
28	0.00000186	9	0.09356230
27	0.00000491	8	0.08892190
26	0.00011668	7	0.08028090
25	0.00026428	6	0.06554100
24	0.00055903	5	0.05186190
23	0.00111904	4	0.03845440
22	0.00210043	3	0.02462360
21	0.00377867	2	0.01356120
20	0.00643536	1	0.00788442
19	0.01036170	0	0.00363896

← Highest

Opening with 11 HCPs

Applying Engineering Principles to Perfect Window Bidding System

7. Opening Probabilities – a combination of HCPs and Distribution

Window Bidding System

1♣	1♦	1♥	1♠	1NT
0.1433	0.03897	0.06867	0.06867	0.04209
2♣	2♦	2♥	2♠	2NT
0.004777	0.007866	0.06679	0.06679	0.009286

More frequencies for opening in the right category

There is no point to design a bidding and very less frequent to use such a bid

Precision Bidding System

1♣	1♠	2♠	2NT
0.09576	0.05518	0.01418	0.00174

8. Testing and Commissioning

- Every method and structure of biddings are fully tested before use
- Like power system equipment, before putting into service, must go through testing and commissioning.
- Bidding methods are adjusted if the bidding sequence or information so transmitted is found to have defect.
- There are over 2000 example hands to test bidding successfully before being adopted (in the book, only 300 hands are selected)
- On site field use is more than 5 years.

Applying Engineering Principles to Perfect Window Bidding System

《習慣說》是清代古文家劉蓉創作的一篇散文。

蓉少時，讀書養晦堂之西偏一室。俛而讀，仰而思；思有弗得，輒起，繞室以旋。室有窪徑尺，浸淫日廣。每履之，足苦躓焉；既久而遂安之。

一日父來室中，顧而笑曰：「一室之不治，何以天下家國為？」命童子取土平之。

後蓉履其地，蹶然以驚，如土忽隆起者；俯視地，坦然則既平矣。已而復然，又久而後安之。

噫！習之中人甚矣哉！足履平地，不與窪適也；及其久，而窪者若平。至使久而即乎其故，則反窒焉而不寧。故君子之學，貴慎始。

Applying Engineering Principles to Prefect Window Bidding System

《習慣說》 is to form a good learning habit from start!

Learning of a system starts with a good habit, understanding and the logic behind on how to solve the problem.

The system is developed by adopting various engineering principles, including information theory approach.

You may take 1 or 2 months to be competent about the system, but enjoy for many years to come in playing bridge.

9. Conclusion

- The bidding system is designed to solve some bidding problem
- The system focus on information contents, aiming to have some low Shannon.
- Slam range bidding is of a critical category which similar to switching a circuit breaker in power system, need check back before execute – asking bids and replies
- Window design is based on calculated probabilities for better and more frequent in using
- For some attack bids, safety concept is adopted for protection
- This Window Bidding System is fully tested for more than 5 years!
- Strongly recommend you to try!

“Prefect” Window Bidding System

Contents (Part II)

1. The Trigger Book
2. The Solution to problems
3. The Attack Opening: 2H, 2S
4. The Strong 2 suiters Opening 2D
5. The Innovative 2C Opening
6. The Prefect Window Opening 1 major
7. The Moon Window Opening 1D
8. The Basic Window Opening 1C
9. Opening 1NT
10. Opening 2NT
11. Probabilities Distribution
12. Conclusion

Applying Engineering Principles to Prefect Window Bidding System

1. The Trigger Book



This book was published in 2003

I encountered this book in 2015 in the HKU Library



My book was published in April 2022

2. The Solution for Problem 1

- Problem existed long time and improved by various systems
- Solving the Problem 1

W	E
1C	1H

How many number of cards in H suit in East Hand?

How many HCP in East Hand?

- **In Window, the solution is**
 - 6-10 HCPs, with 5+ cards H suit, bid 1H
 - 6-10 HCPs, with only 4 cards in H, bid 1D (投石問路)
 - 11+ HCPs, having 4 or 5 cards, bid 2C as asking bid
 - 13-15 HCPs, with 5 cards H suit, bid 2H
 - 16+ HCPs, with 5+ cards H suit and 2 top honours in the suit, bid 3H as Suit Support
- Asking Bid, exploring slam

2. The Solution for Problem 2

- Problem existed long time
- No satisfactory solutions on cases like

W	E
1H	2H

How many number of cards in H suit in East Hand?

How many HCP in East Hand?

• In Window, the solution is

- 0-6 HCPs, having 4 cards H suit, bid 2H
- 0-6 HCPs, having 5+ cards H suit, bid 3H
- 5-8 HCPs, with only 3 cards in H, bid 2H
- 7-12 HCPs, having 4 cards H suit, bid 2NT
- 13+ HCPs, having 4 cards H suit, bid 2C as asking bid
- 12+ HCPs, having 4 cards H suit, with another good 5+ cards suit with 2 of the top 3 honours, bid 3C/3D/3S as Suit Support Asking Bid (雙劍合璧)

2. The Solution for Problem 3

- Similar to Problem 1
- Solving this problem with no extra bidding space

W	E
1D	1H

How many number of cards in H suit in East Hand?

How many HCP in East Hand?

- In Window, the solution is
 - **Opener bidding 1D, normally don't have 4 cards major***
 - 5-8 HCPs, with 5 cards H suit, 5-8 HCPs, bid 1H
 - 9+ HCPs, with 4 or 5 cards in H suit , bid 2C as asking bid
 - 13-15 HCPs, with 5 cards H suit, bid 2H
 - 12+ HCPs, with 4 cards D suit plus another 5+ cards suit with 2 of the top 3 honour, bid 3C/3H/3S as Suit Support Asking Bid (雙劍合璧)

3. The “Attack” Opening 先發制人

- **Opening 2H/2S**

- 10-15 HCPs, with a 4 cards H plus a 5+ cards minor, open 2H
- 10-15 HCPs, with a 4 cards S plus a 5+ cards minor, open 2S
- 10-13 HCPs, with 4-4 major and 5 cards C suit, open 2H
- 14-15 HCPs, with 4-4 major and 5 cards C suit, open 2S

- One important aspect of this bid is the 1D opening hand don't have 4 cards major
- Opponent is more or less forced into a 3 level contract
- Opponent may also miss game
- Safety net is by the use of 3C for pass or correct

3. The “Attack” Opening 先發制人

- **Opening 2H/2S**

- 10-15 HCPs, with a 4 cards H plus a 5+ cards minor, open 2H
- 10-15 HCPs, with a 4 cards S plus a 5+ cards minor, open 2S
- 10-13 HCPs, with 4-4 major and 5 cards C suit, open 2H
- 14-15 HCPs, with 4-4 major and 5 cards C suit, open 2S

- **Response**

- **2NT** is asking bid, forcing for one round
 - **3C** is for pass or correct

- **Opener responding to 2NT asking bid**

- **3C**: 10-13 HCPs, C suit, or 14-15 HCPs, C suit is not good
- **3D**: 10-13 HCPs, D suit, or 14-15 HCPs, C suit is not good
- **3H**: 14-15 HCPs, C suit is having 2 of the top 3 honours
- **3S**: 14-15 HCPs, D suit is having 2 of the top 3 honours
- **3NT**: 4-4-0-5 hand with strength according to opener previous opening bid

4. The Strong 2 suiters Opening 鑽石輝煌

- **Opening 2D**
- **16-21HCPs, with a 5+ cards D suit plus another suit, open 2D**
 - The second suit is either a 4+ cards major or 5+ cards C suit
 - D suit is one card longer than the major suit

- This approach preserve the use of major opening when major and minor are of equal length and normally, major is longer than minor
- With the D suit and opening strength, opponent may find it difficult to explore their suit fit
- Safety net is easy to stop at minimum level!

4 The Strong 2 suiters Opening 鑽石輝煌

- **Opening 2D**

- 16-21HCPs, with a 5+ cards D suit plus another suit, open 2D
 - The second suit is either a 4+ cards major or 5+ cards C suit
 - D suit is one card longer than the major suit

- **Response**

- 2H 4-6 HCP, weak, asking
 - 2S 7-12 HCP, asking bid

- Opener responding **2S asking bid**

- 2NT: 4 cards H & 5 cards D or 5 cards H & 6 cards D suits
- 3C: 4 cards S & 5 cards D or 5 cards S & 6 cards D suits
- 3D: 5+ cards C and 5+ cards D suits
- 3H: 4 cards H & 6 cards D or 5 cards H & 7 cards D suits
- 3S: 4 cards H & 6 cards D or 5 cards H & 7 cards D suits

5 The Innovative 2C Opening 劍問江湖 號令天下 論資排輩

- **Opening 2C**
- 20 HCPs or 9+ playing tricks (excluding some bids already covered in other opening, e.g. 2D, 2NT etc)

- The 2C opening and after the response, there are 3 types of subsequent bidding!
- These biddings have been designed with specific purpose
- As opener is strong, a master-slave asking bid is adopted
- The bidding is so designed for responses when opponent interference

5 The Innovative 2C Opening 劍問江湖 號令天下 論資排輩

- **Opening 2C**
- 20 HCPs or 9+ playing tricks (excluding some bids already covered in other opening, e.g. 2D, 2NT etc)
 - **Response**
 - **2D** 0-4 HCPs, no Ace
 - **2H** 4-7 HCPs
- When weak, use 論資排輩
- For 2D response, opener bid 2H to ask for distribution
- For 2H response, opener bid 2S to ask for distribution

5 The Innovative 2C Opening 劍問江湖 號令天下 論資排輩

- **Opening 2C**
- 20 HCPs or 9+ playing tricks (excluding some bids already covered in other opening, e.g. 2D, 2NT etc)
 - **Response**
 - **2H** 4-7 HCPs
 - **2S** 8+ HCPs, with 1 Ace in a suit of at most 3 cards
 - **2NT** 8+ HCPs, with 0 or 2 Aces
 - **3C/3D/3H/3S** 8+ HCPs, with 1 Ace in a suit of 4+ cards
 - **3NT** with 3 Aces
- **Specific A, K, Q asking bid 號令天下**
- **Opener bid 2NT over 2H, 2S to ask for specific A**
- **Opener bid 3NT over 3C/3D/3H/3S to ask for specific K**
- **Opener bid 4NT (after asking A, K) to ask for specific Q**

5. The Innovative 2C Opening 劍問江湖 號令天下 論資排輩

- **Opening 2C**

- 20 HCPs or 9+ playing tricks (excluding some bids already covered in other opening, e.g. 2D, 2NT etc)

- **Response**

- 2H 4-7 HCPs

- 2S 8+ HCPs, with 1 Ace in a suit of at most 3 cards

- 2NT 8+ HCPs, with 0 or 2 Aces

- 3C/3D/3H/3S 8+ HCPs, with 1 Ace in a suit of 4+ cards

- **Suit Support Asking Bid 劍問江湖** The suit asked is having 5+ cards with 2 of the top 3 honours.

- Opener bid a 3 level suit to ask and replies in 5 steps.

- After the Suit Support Asking bid, General Control Asking bid of 6 steps will follow

- After General Control Asking bid, Key Control Asking bid of 3 steps

5 The Innovative 2C Opening 劍問江湖 號令天下 論資排輩

- **Opening 2C**

- 20 HCPs or 9+ playing tricks (excluding some bids already covered in other opening, e.g. 2D, 2NT etc)

- **Response**

- 2D 0-4 HCPs, no Ace

- 2H 4-7 HCPs

- 2S 8+ HCPs, with 1 Ace in a suit of at most 3 cards

- 2NT 8+ HCPs, with 0 or 2 Aces

- 3C/3D/3H/3S 8+ HCPs, with 1 Ace in a suit of 4+ cards

- 3NT with 3 Aces

- For weak response, ask for distribution to explore game
- For 4-7 HCPs, ask for distribution or take master control
- For 8+ HCPs, take master control

6. The Perfect Window Opening 完美窗口

- **Opening 1H/1S**
- **10-19 HCPs, with 5+ cards H/S suits**
 - Response
 - Pass 0-5 HCP
 - 1NT 6-10 HCPs, no 3 cards support
 - **2C 9+ HCPs, may have 3+ cards support, Asking Bid**
 - 2D/2H (over 1S)/2S(over 1H) 13-15 HCPs, 5+ cards suit, the suit having 2 of the top 3 honours
 - 2NT 7-12 HCPs, 4 cards support,
 - 3C/3D/3H(over 1S)/3S(over 1H) 12+ HCPs, with 4 cards support, plus the suit bid is 5+ card, having 2 of the top 3 honours (雙劍合璧)

6. The Perfect Window Opening 完美窗口

- **Opening 1H/1S**
- **10-19 HCPs, with 5+ cards H/S suits**
 - **Response**
 - **2C 9+ HCPs, may have 3+ cards support, Asking Bid**
- **Opener describe the hand like opening a window**
- **2D: 11-14 HCPs, 5 cards suit**
- **2H (for 1H open) : 11-14 HCPs, 5 cards suit**
- **2S (for 1S open): 11-14 HCPs, 5 cards suit**
- **2H (for 1S open): 15-17 HCPs, 5 cards suit**
- **2S (for 1H open): 15-17 HCPs, 5 cards suit**
- **2NT: 18-19 HCPs, 5 cards suit**
- **3C/3D/3H(for 1S open)/3S(for 1H open): 15+ HCPs, 6+ cards H/S suit, the suit bid is singleton or void**
- **3H (for 1H Open)3S (for 1S open): 15+ HCPs, 6 cards H/S suit, no singleton or void**
- **3NT: 11-14 HCPs, 7 cards suit with 2 of top 3 honours plus one entry**

7. The Moon Window Opening 推窗望月

- **Opening 1D**

- **10-19 HCPs, with 5+ cards D suits**

- **Response**

- **Pass 0-5 HCP**

- **1H 5-8 HCPs, 5+ cards H suit**

- **1S 5-8 HCPs, 5+ cards S suit**

- **1NT 6-10 HCPs, no 3 cards support**

- **2C 9+ HCPs, may have 3+ cards support, Asking Bid**

- **2D 0-6 HCP, 3 or 4 cards support**

- **2H/2S 13-15 HCPs, 5+ cards H/S suit, with 2 of the top 3 honours**

- **3C/3H/3S 12+ HCPs, with 4 cards support, plus the suit bid is 5+ card, having 2 of the top 3 honours (雙劍合璧)**

7. The Moon Window Opening 推窗望月

- **Opening 1D**

- 10-19 HCPs, with 5+ cards D suits

- **Response**

- **2C 9+ HCPs, may have 3+ cards support, Asking Bid**

- Opener describe the hand like opening a window
- 2D: 11-14 HCPs, 5 or 6 cards suit
- 2H: 11-21 HCPs, 4-4-5-0 distribution (with 4-4 major and 5 cards suit)
- 2S: 15-19 HCPs, 5 cards D and 4 cards C suits
- 2NT: 15-19 HCPs, 5 cards D suit, no 4 cards C suits
- 3C/3H/3S: 15+ HCPs, 6+ cards D suit, the suit bid is singleton or void
- 3D: 15+ HCPs, 6+ cards D suit, no singleton or void
- 3NT: 11-14 HCPs, 7 cards suit with 2 of top 3 honours plus one sure entry

8. The Basic Window Opening 梅綻多姿

- **Opening 1C**

- 10-19 HCPs, without 5 cards in D/H/S suit

Response

- Pass 0-5 HCP
- 1D 6-11 HCPs, with either (i) 5 cards D suit, (ii) 1 or 2 4 cards major, (iii) have both 5 cards D and a major 投石問路
- 1H 6-10 HCPs, 5+ cards H suit
- 1S 6-10 HCPs, 5+ cards S suit
- 1NT 6-10 HCPs, no 5 cards D suit and no 4 cards major
- **2C 11+ HCPs, Asking Bid**
- 2D 5-7 HCPs, 6+ cards in a major
- 2H/2S 13-15 HCPs, 5+ cards H/S suit
- 2NT 15+ HCPs, no 5 card suit
- 3C 7-10 HCPs, 6+ card in C, no 4 or 5 card major
- 3D/3H/3S/4C 16+ HCPs, the suit bid is 5+ card, having 2 of the top 3 honours, Suit Support Asking Bid

8. The Basic Window Opening 梅綻多姿

- **Opening 1C**

- 10-19 HCPs, without 5 cards in D/H/S suit

- **Response**

- **2C 11+ HCPs, Asking Bid**

- Opener describe the hand like opening a window
- 2D: 11-12 HCPs, 5 or 6 cards suit
- 2H: 13-14 HCPs, 4 card H suit
- 2S: 13-14 HCPs, 4 card S suit
- 2NT: 15-19 HCPs, 4441 distribution
- 3C: 13-14 HCPs, 5+ cards C suit
- 3D: 15-19 HCPs, 5+ cards D suit, may have 4 cards D suits
- 3H: 16-19 HCPs, 4 cards H suit and a 5+ cards C suit
- 3S: 16-19 HCPs, 4 cards S suit and a 5+ cards C suit
- 3NT: 13-14 HCPs, no 4 cards major, may have 5 cards C or 4 cards D suit

9. The 1NT Opening

- **Opening 1NT**

- **15-18 HCPs, can only have 5 cards C suit**

- **Response**

- **Pass: 0-6 HCP, no 5 cards major**

- **2C: 7+ HCPs, Stayman ask for major**

- **2D: transfer to 2H**

- **2H: transfer to 2S**

- **2S: 7+ HCPs, no 4 cards major, with 5-4 minors or long minor**

- **2NT: (i) 12+ HCPs, 4441 or 4450 (ii) a weak C or D suit**

- **3C: 7-9 HCPs, good 5 or 6 cards C suit**

- **3D: 7-9 HCPs, good 5 or 6 cards D suit**

- **3H: 13+ HCPs, with 4-4 minor, or 16+ HCPs, 4332 or 5422 with no 4 or 5 cards major**

- **3S: 7-12 HCPs, with 5-5 minor**

- **3NT: 10-12 HCPs, no 4 cards major, no long minor**

10. The 2NT Opening

- **Opening 2NT**

- 19-21 HCPs, no 5 cards major, for the doubleton, must have stopper.

- **Response**

- **Pass:** 0-3 HCP, balanced hand

- **3C:** 4+ HCPs, Stayman asking for major

- **3D:** transfer to 2H

- **3H:** transfer to 2S

- **3S:** 4+ HCPs, minor Stayman asking for minor

- **3NT:** 4+ HCPs, no 4 cards major, to play

Applying Engineering Principles to Prefect Window Bidding System

11. Probabilities Distribution

Window Bidding System

1♣	1♦	1♥	1♠	1NT
0.1433	0.03897	0.06867	0.06867	0.04209
2♣	2♦	2♥	2♠	2NT
0.004777	0.007866	0.06679	0.06679	0.009286

Better use of all available bidding space

Precision Bidding System

1♣	1♠	2♠	2NT
0.09576	0.05518	0.01418	0.00174

Applying Engineering Principles to Perfect Window Bidding System

Too many things to remember ?

快速學會某件有價值的事，並不是天才的專利，而是每個人都能擁有的成就。
大多數人不去做，是因為找不到正確的方法，直到現在……



Ultralearning By Scott Young

實證有效！網路口耳相傳、國際網路論壇享有盛譽的「學神」，
首度分享他的「超速學習」法則，驚人的學習成就仍在持續累積！

- ★《原子習慣》作者詹姆斯·克利爾盛讚：「真希望我能早一點擁有這本書。」
- ★《深度工作力》作者卡爾·紐波特高度肯定：「這是能改變人生的超能力。」
- ★ Amazon、《紐約時報》《華爾街日報》暢銷書

9 principles on Ultralearning

1. 後設學習…先畫一張學習地圖。一開始先學習如何學習你想進行的主題或技能，去弄清楚如何做好研究，以及如何利用你過去的能力，讓學習新技能變得更簡單。

2. 專心致志…把刀磨利。培養專注的能力，可以助你在專注於學習時騰出更多時間，更容易放手去做。

3. 直截了當…走最短的路，勇往直前。透過實際去做你想擅長的事來學習，不要用其他比較方便或舒服的任務來取代。

4. 反覆操練…直擊你最大的弱點。要堅決改善你最大的弱點，把複雜的技能拆解成一個個小部分，然後精通每一部分，再組合起來。

5. 提取記憶…用測驗來學習。測驗不只是評估知識，也是創造知識的方式。在你覺得有信心之前就自我檢驗，然後督促自己主動回想，而非被動複習。

6. 意見回饋…別閃避重拳。回饋是嚴厲且不舒服的，要懂得如何利用它，別讓你的自尊心妨礙了你。從雜音中萃取出訊號，如此你就會知道哪裡該注意、哪裡該加以忽略。

7. 保留記憶…別往有漏洞的桶子倒水。要了解你忘記什麼與為何忘記，要學習不只是現在記得、也要永遠記得事情。

8. 培養直覺…先深掘，再累積。透過遊戲以及對概念與技能的探索，來培養直覺。去了解「理解」是如何發生的，別仰賴廉價的記憶法把戲，來逃避深入理解事物。

9. 勇於實驗…往舒適圈外探索。這些法則都只是起點，真正的精通不僅來自遵循他人走過的道路，也來自探索他人從未想像過的可能性。

Applying Engineering Principles to Prefect Window Bidding System

Prefect Window Bidding Quiz with Answer

Prefect Window Bidding Quiz 01

Opening Bids

What would you open bid with the following hands?

Q01-01 ♠A5 ♥A10962 ♦K75 ♣J54	Q01-02 ♠A10962 ♥AK632 ♦K7 ♣6	Q01-03 ♠Q5 ♥AJ2 ♦A10962 ♣J54	Q01-04 ♠A5 ♥A1096 ♦K75 ♣J543
Q01-05 ♠AJ54 ♥A763 ♦K754 ♣9	Q01-06 ♠54 ♥AQ93 ♦A10962 ♣65	Q01-07 ♠AQ75 ♥93 ♦A10962 ♣65	Q01-08 ♠A5 ♥A1096 ♦AK1096 ♣J5
Q01-09 ♠A5 ♥AJ109 ♦KQ75 ♣Q54	Q01-10 ♠AQ ♥A1096 ♦AKJ7 ♣Q54	Q01-11 ♠A5 ♥AK10962 ♦K7 ♣AQ4	Q01-12 ♠5 ♥AK ♦AKQJ754 ♣543

If interested, email me to ask for the Bidding Quiz at :
irfcchan@gmail.com

Applying Engineering Principles to Prefect Window Bidding System

Bidding Systems (to reduce bidding guess work, more effort on play)

- Acol
- Schenken Club
- Neapolitan Club
- Roman Club
- Tiger
- Precision Club
- Super Precision
- Blue Club
- Strong Pass
- Jump Shift
- Master Club
- SAYC
- 2 Over 1

Review on those difficult hands published and how experts handled and see how the bidding system can improve.

Objective

Comfortable in low level contract and don't miss game or slam.

Applying Engineering Principles to Prefect Window Bidding System



第一章
第二章
第三章
第四章
第五章
第六章
第七章
第八章
第九章
第十章
第十一章

完美窗口
推窗望月
皇袍加身
雙劍合璧
劍中有劍
梅綻多姿
投石問路
潛龍出海
猛虎跳牆
先發制人
鑽石輝煌

第十二章
第十三章
第十四章
第十五章
第十六章
第十七章
第十八章
第十九章
第二十章
第二十一章
第二十二章

劍問江湖
號令天下
論資排輩
三花聚頂
全能戰士
如虎添翼
鴛鴦雙刀
超能戰士
極地戰士
兵來將擋
守中帶攻

**The book has 22 chapters with detail explanation
and 350 bidding examples**

This book is available at major bookstores in Hong Kong

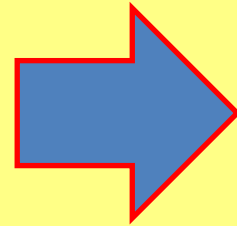
12. Conclusion

- The bidding system is designed to solve some bidding problems
- Adopt 5 cards major system as basis
- Adopt Asking bid to explore slam contract
- Design of 5 cards opening bid for 1S, 1H and 1D
- Improved opening bids at 2-level
- 2H/2S opening bid is a useful tool to attack
- 2D opening bid is a result of combining some 2 suiters bid
- 2C system is using various innovative asking bids to suit different needs
- 1H/1S with **2C asking** as the main feature of the Window system
- 1D opening is excluding single 4 cards major
- 1C is a big variety but extracted out to other bidding hence making it a unique subsystem

Applying Engineering Principles to

by
Ir Dr FC Chan

Thank You



Perfect Window
Bidding System

ALERT

2NT

2NT 2♠
3NT 3♠ 3♥ 3♦ 3♣
4NT 4♠ 4♥ 4♦ 4♣
5NT 5♠ 5♥ 5♦ 5♣
6NT 6♠ 6♥ 6♦ 6♣
7NT 7♠ 7♥ 7♦ 7♣

XX stop X
TD PASS A