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Chapter 1

1X

1.1 1C

```
1C -
1D*: 4+H
1H*: 4+S
1S*: inv+, 4+D; or 5+D
  - 1N : min, 2-D or 4333 or some 4332
   - 2C : min unbal
  - 2D : 3+D
1N : 6-10
2C*: GF, 4+C # inv if PH
  - 2D*: 12-14
  - 2M : 15+, nat, usually 3+M
  - 2N : 18-19
  -3C:15-17,6+C
  - 3X*: spl
2D*: inv, 4+C # constr if PH
  - 2M : 15+, nat, usually 3+M
  - 2N : nat min
  - 3C : nat min
  - 3X*: spl
  -3N: nat # 13-14/18-19
2M: 3-7, 6+M # not interested in 16-17, 2-M
2N^*: 7-9, 5+C
3C^*: 0-6, 5+C
3X : 7+X, about 6-6.5 tricks
```

1.1.1 Gazzilli after $1D^*/1H^*$

```
1C - 1D^*;
1H*: 4+S # highest priority unless 4+ fit
1S*: 16+; or 13-14(15), 6+C, GT # may be 16-17, 2425 [3H]
   - 1N*: 8+
       - 2C*: 6+C, GT
             -P:s/o
             - 2N : re-inv
             - 3C : re-inv
   - 2C : min
   - 2D : min
   - 2H : min
  - 2S^*: min, 5+S # implies 6+H
   - 2N+: C fit ST
   - 3H : solid H ST
1N : min bal
2C : min unbal
2D*: 14-16, 6+C, 4+D
```

```
2H : min, 4+H
2S*: inv+, 4+H, spl S
2N : 18-19, bal
3C: (15)16-17, 6+C, GT
3D^*: inv+, 4+H, spl D
3H^*: 18-19 \text{ bal, } 4+H
3S^*: 20-22, 4+H, some spl
 - 3N^*: ask
3N^*: GF, 4+H, S void
4C*: GF, 4+H, 6+C
4D*: GF, 4+H, D void
4H*: 4+H, 20-21 bal # or good 18-19 bal
1C - 1H^*;
1S^*: 16+; or 13-14(15), 6+C, GT # may be 16-17, 4225 [3S]
   - 1N*: 8+
        -2C^*: 6+C, GT
             - P : s/o
             - 2N : re-inv
             - 3C : re-inv
   - 2C : min
   - 2D : min
   - 2H : min
   - 2S : min
   - 2N+: C fit ST
   - 3S : solid S ST
1N : min bal
2C : min unbal
2D*: 14-16, 6+C, 4+D
```

```
1N : min bal

2C : min unbal

2D*: 14-16, 6+C, 4+D

2H*: 14-16, 6+C, 4+H

2S*: min, 4+S

2N : 18-19, bal

3C : (15)16-17, 6+C, GT

3D*: inv+, 4+S, spl D

3H*: inv+, 4+S, spl H

3S*: 4+S, 18-19 bal

3N*: 20-22, 4+S, some spl

- 4C*: ask

4C*: GF, 4+S, 6+C

4D*: GF, 4+S, D void

4H*: GF, 4+S, H void

4S*: 4+S, 20-21 bal # or good 18-19 bal
```

1.1.2 XYZW

```
1C - 1D*; 1H*- 1S*: see utils/XYZW/PLOB
```

```
1C - 1DH; 1N - ...: see utils/XYZW/2wPCB
1C - 1S; 1N - ...: no 2-way
```

1.2 1D

```
1D - # 11-21, 4+D unbal; 12-14/18-19, 4+D bal
1M : 6+, 4+M
1N : 6-10, nat
2C : inv, 6+C [3C]; or GF, 5+C
   - 2D^*: 12-14 # may be 12-14 with good C support; ready to play 3N
        - 2H*: GF, ask
             - 2S*: 5D unbal
             -2N:min bal
             - 3C : 3+C unbal
             - 3D : 6+D unbal
             - 3N : max bal
        - 2S+: nat GF
       - 3C : nat inv
   - 2M*: 15+ unbal, may be stopper
   -2N:18-19 bal
   - 3C : GF, 14+, 4+C
   - 3D : solid D ST
   - 3M^*: GF, 4+C, spl
2D*: some 6+M pre # shouldn't be interested in 18-19 bal
  # resp. similar to 2D/V (multi) except 3D
   -P:s/o
   - 2H*: P/C
   - 2S^*: P/C, may be interested in H
   -2N^*: ask #
        - 3C*: min
             - 3D^*: ask
             - 3H*: P/C
        - 3D^*: max, H
       - 3H*: max, S
   - 3C : nat, NF
   - 3D : nat, inv # then 3M = max and show suit
2H*: GF, 4+D # inv if PH
  - 2S*: 15+, catchall # GF if partner inv
   -2N:12-14 bal
   - 3C : nat
  - 3D : min unbal
   - 3M*: spl
  -3N:18-19 bal
2S*: inv, usually 4+D, not prefer to declare # constr if PH
  - 2N : nat min
  - 3C : nat, F1
   - 3D : nat min
   - 3M*: nat, could be stopper
   - 3N : nat
2N : nat inv
```

```
3C*: 8-10, 4+D
3D*: (0)3-7, 4+D
3M: 7+M, about 6 tricks, NF
```

1.2.1 XYZW

```
1D - 1H; 1S - 2C*: see utils/XYZW/PLOB
1D - 1M; 1N - ...: see utils/XYZW/2wPCB
```

1.3 1H

```
1H - # 12-21, 5+H
1S*: F1; 4-6, 3+H [2H]; inv, 3H [3H/4H]; constr. 5+H [4H]; 5-11, 2-S;
  12-14, 4-S bal [3N]
1N*: 5+S, F1
2C : GF, nat
2D: GF, nat
2H : 7-9, 3+S
2S*: 12+, 4+H
2N^*: 8-9/12-13, C/S spl
  - 3C*: ask
        - 3D*: C spl
        -3H^*: S spl, 8-9
        - 3S+: S spl, 12-13, cue-bid
3C*: 10-11, 4+H bal; 10-11, 4+H spl # the latter is GF
   - 3D^*: ask, ST
        -3H^*: 10-11, 4+S bal
        - 3S+: spl # 3N* replaces the highest spl, i.e. D
   - 3H : light opening; or min, 5H(332)
3D^*: 8-9/12-13, D spl
3H : pre
3S^*: 10-12, S void
3N^*: 12-14, 3H, bal w/o 6m, CoG
4X^*: 10-12, X void
4H : pre
```

1.3.1 Gazzilli after 1S*/1N*

```
1H - 1S*: F1

1N*: 16+, any; or 12-15, 6+H

2m: 12-15, nat

2H*: 12-15, 4+S

2S*: 14-16, 6+H, 4+S

2N*: 14-16, 6+H, 4+m

- 3C*: ask

- 3D: 4+D

- 3H*: 4+C

3m: 14-16, 5+m, NF

3H: 15-17, (s-)solid 6+H

3S: inv, 5+S, NF

3N*: GF, solid 7+H
```

```
1H - 1N*: 5+S
2C*: 16+, any; or 12-15, 6+H
2D: 12-15, nat
```

```
2H*: 12-15, 4+C
2S: 12-15, 3+S
2N*: 14-16, 6+H, 4+X
- 3C*: ask
- 3D: 4+D
- 3H*: 4+C
- 3S: 4+S

3m: 14-16, 5+m, NF
3H: 15-17, (s-)solid 6+H
3S: inv, 6+H, 3+S
3N*: GF, solid 7+H
```

1.3.2 1H - $2S^*$ (same as $1S - 2N^*$)

1.3.3 1H - (X)

```
1H - (X);
P : weak or some unbal inv # then bid/X = inv
XX : 10+, s-bal, usually not concentrated # forcing pass on
1S : 5+S, F1 # system on, may be psyche but rare
1N*: 5+C, 6-10; or 4+C, GF
2C*: 5+D, 6-10; or 4+D, GF
2D*: 3+H, 4-6 or 10+
2H : 3+H, 7-9
2S+: system on
```

1.3.4 PH response

```
1H - # 12-21, 5+H
1S : 4+S
  - 1N : min nat
   - 2C*: 16+, any; or 12-15, 6+H
        - 2D*: 8+
   - 2D : 12-15, nat
   - 2H*: 12-15, nat C
1N*: NF; 4-6, 3+H [2H]; 5-11, 2-S
   - 2C^*: 16+, any; or 12-15, 6+H
        - 2D*: 8+
   - 2D : 12-15, nat
  - 2H*: 12-15, nat C
2C*: inv+, 3+H # Drury
  - 2D^*: min bal
   - 2H : light opening
   - 2S+: same as after 1H - 2H
2D : inv+, nat
```

```
2H: 7-9, 3+H

2S: 4-7, 6+S

2N*: 8-10, 4+H, some spl

3m*: 8-10, (54+) H and m

3H: pre

3S*: 10-12, S void

3N*: 12-14, 3H, bal w/o 6m, CoG

4X*: 10-12, X void

4H: pre
```

1.4 1N

temporarily use BTUBWS $\,$

1.4.1 comp

```
1N - (2C = nat or some 6+X) - X* : Stayman # others system on
1N - (2D = nat) - X* : t/o
1N - (2M = nat) - X : pen
# otherwise UwU
```

1.5 1S

```
1S - # 12-21, 5+S
1N*: F1; 4-6, 3+S [2S]; inv, 3S [3S/4S]; constr. 5+S [4S]; 5-11, 2-S;
  12-14, 2-S bal [3N]
2C : GF, nat
2D : GF, nat
2H : GF, nat
2S : 7-9, 3+S
2N^*: 12+, 4+S
3C^*: 8-9/12-13, C/D spl
  - 3D*: ask
        - 3H*: C spl
        -3S^*: D spl, 8-9
        - 3N+: D spl, 12-13, cue-bid
3D*: 10-11, 4+S bal; 10-11, 4+S spl # the latter is GF
  - 3H*: ask, ST
        -3S^*: 10-11, 4+S bal
        - 3N+: spl # 3N* replaces the highest spl, i.e. H
  - 3S : light opening; or min, 5(332)
3H^*: 8-9/12-13, H spl
3S : pre
3N^*: 12-14, 3S, bal w/o 6m, CoG
4X^*: 10-12, X void
4S : pre
```

1.5.1 Gazzilli after 1N

```
1S - 1N*; 2C*: 16+, any; or 12-15, 6+S

2D*: 8+, any
- 2S: 12-15, 6+S
- other: nat and GF

2H: 5-7, 5+H
```

1.5.2 1S - 2N*

```
1S - 2N*: 12+, 4+S

3X : X short # then 3N = FF

3S : 14+, w/o shortness # then 3N = FF

3N*: FF, 12-13, w/o shortness
(TBD) after 3S/3N, choose from spl or cue-bid
# 4X usually with controls in two other suits, otherwise bid 3X instead

4m : 5+m
- +1*: ask
- 4S : min

4H : 5+H, extra

4S*: 5+H, min
```

$1.5.3 ext{ 1S - } (X)$

```
1S - (X);
P : weak or some unbal inv # then bid/X = inv

XX : 10+, s-bal, usually not concentrated # forcing pass on

1N*: 5+C, 6-10; or 4+C, GF

2C*: 5+D, 6-10; or 4+D, GF

2D*: 5+H, 6-10; or 4+H, GF

2H*: 3+S, 4-6 or 10+

2S : 3+S, 7-9

2N+: system on
```

1.6 2C

```
2C*-
2D*: waiting
  - 2H^* \rightarrow 2S^* - 2N : 20 - 21 bal
             - 3X : 22+, nat, 5+H
             -3N:22-24,5H(332)
        -2N^*: 4-7, 5+S
   - 2S : 22+, 5+S
   -2N:22-24
   -3m:GF,5+m
  - 3M : nat solid ST
   - 3N : 25-27
   - 4m : nat solid ST
   - 4M : 8.5+ tricks
  - 5m : 8.5+ tricks
2M : 8+, 5+M
2N : 8-10
3m : 8+, (5)6+m
3M : 4-7, 6+M
3N : 11-12
4m : 8+, solid (6)7+m, ST
4M : 4-7, 7+M
```

Chapter 2
pre

2.1 2D/NV (multi)

```
2D - # 3-9, 6+M
P : s/o
2M/3M/4H*: P/C
4S : s/o
2N*: F1
   - 3C*: min
      - 3H*: P/C
  - 3D^*: H, mid
   - 3H*: S, mid
   - 3S^*: H, max
   - 3N^*: S, max
3C : s/o
3D^*: some 5+M, GF
   - 3H : 6+H
       - 3S : 6+S
        - 3N : 5S
   -3S:6(2-)xx
   -3N*:6322
   - 4C*: 63xx+, spl D
   - 4D^*: 63xx+, spl C max
   - 4H*: 63xx+, spl C min
3N : s/o
4\,\mbox{C}^*\colon fit in both majors, slam interest, ask
  - 4D*: H
   - 4H*: S
4D*: s/o 4M, not allowing re-raise
```

2.2 2H/NV (Ekren)

```
2H*- # 3-8, 4+MMs

2S : s/o

2N*: ask
- 3C*: min
- 3D*: ask, GF
- 3M*: 5+oM
- 3N : 44Ms
- 4m*: 55Ms, spl m

- 3D*: mid+, 55Ms
- 3M : s/o
- 3M*: max, 5+oM
- 3N*: max, 44Ms

3C*: 4+H, inv+
- 3D*: re-inv
```

```
- 3H*: min
- 3S*: shape-FF, 4H but max
- 3N+: 5H, super max, cuebid
- 4H: 5H, max, not super max

3D*: 4+S, inv+
- 3H*: re-inv
- 3S*: min
- 3N*: shape-FF, 4S but max
- 4C+: 5S, super max, cuebid
- 4S: 5S, max, not super max

3M: s/o
3N: s/o
4C*: ask, ST
4D*: pick a 4M, not allowing re-raise
4M: s/o
```

2.3 2S/NV (wild)

```
2S - \# 0-8 (11 if partner PH), 5+S
2N^*: inv+
  -3m:3+m, min
   - 3H^*: 6+S, max
   -3S^*: 6+S, min
   - 3N^*: 5S, max
3C^*: 5+H, GF; 2(5+)xx, inv
   -3D^*: 5(1-)xx, min; 52xx, inv; 5(2-)xx, max # then rebid 3N/4H
        - 3H : 26xx, inv
        - 3S : s/o # usually 25xx inv
        -3N:s/o
   - 3H^*: 5(2+)xx, min
  -3S^*: 6(2-)xx, min
   -3N^*: 6(2-)xx, max
  - 4C+: 3+H, max
3D^*: 16xx, inv; 6+H, GF
3H^*: 3+S, inv+
3S : s/o
3N : s/o
4C*: ORKC
4\text{D}^*\!\to\!4\text{S} : re-raise not allowed, usually with strength \text{ \# could be preempt}
4H : s/o
4S : s/o
```

2.4 2D/V (multi)

```
2D - # 3-7, 6+M
P : s/o
2M/3M/4H*: P/C
4S : s/o
2N*: F1
   - 3C*: min
     - 3H*: P/C
  - 3D*: H, mid
  - 3H*: S, mid
  - 3S^*: H, max
  - 3N^*: S, max
3C : s/o
3D^*: some 5+M, GF
  - 3H : 6+H
       - 3S : 6+S
      - 3N : 5S
  -3S:6(2-)xx
  - 3N*: 6322
  - 4C*: 63xx+, spl D
   - 4D^*: 63xx+, spl C max
  - 4H*: 63xx+, spl C min
3N : s/o
4C^*: fit in both majors, slam interest, ask
  - 4D*: H
  - 4H*: S
4D*: s/o 4M, not allowing re-raise
```

2.5 2M/V (nat)

```
2M - # 8-11, 6+M
2S : nat F
2N*: ask feature
    - 3X : cue
3M : s/o
3N : s/o
4C*: ORKC
4D*: s/o 4M, not allowing re-raise
4M : s/o
```

Chapter 3 comp

3.1 Gladiator

3.2 good bad 2NT

```
1X - (1Y)- [bid/X] - (2Y) 

2N^* \rightarrow 3C^*: comp

3X : good hand # if [bid/X] shows inv+ then GF, otherwise inv
```

```
# other situations that applies
1X - (P) - 1Y - (2M = jump overcall) - 2N^*: good-bad
1X - (2Y) - X^* - (P) - 2N^*: good-bad
(1X) - 1Y - (2X) - 2N^*: good-bad
(1X) - X^* - (2X) - 2N^*: good-bad
(1X) - 2Y - (2X) - 2N^* \rightarrow 3C^*: tr. Leb. # notice the difference!
```

3.3 overcall

```
(1m) -
# style: the stronger the hand, more shapely to pre 2M
# V/NV
P : # may be lengthy but not enough values, ex: AJxxxxx.xxx.x
1M : (8)9-17, 5+M # rebid <math>2M = 14-17
2M : 9-13(14), 6+M # promise defensive values
# V/V
1M: 8-17, 5+M # could be weaker (LD) if partner PH
2M : 6+M, pre # usually not 6322; unless ex: KQJ9xx.xx.Kxx.xx
# NV/NV
1M: 8-17, 5+M # 4oM or afraid of losing game
2M : (5)6+M, pre # usually unbal and partner PH if 5M
# KQxxx.JTxx.x.Qxx: 2S
# KJxxx.xxx.QJTx.x: 1S/2S
# KQJxx.xxx.Qxx.xx: 1S/1-2S
# NV/V
1M : 8-17, 5+M # 4oM or afraid of losing game
2M : 5+M, pre # wild if partner PH
# KQJxx.xxx.Qxx.xx: 1S/2S
# KJxxx.xx.xxx: P/2S
```

3.4 unusual

```
# if we are able to overcall the higher suit at 1-level, then range = 3-10
    or 16+; otherwise 10+
(1M) - 2M*: 5+oM, 5+m
(1M) - 2N*: 55+ms
(1m) - 2m*: 55+Ms; 54+ if NV/V
(1m) - 2N*: 5+H, 5+om

(1X) - (1Y) -
X* : 44+ unbid suits or strong
1N*: 54+ unbid suits

(1X) - 2m -(2X) - P -(P) - 2N*: 64+ mms
```

3.5 vs 1N

```
(1N) -
# case 1: non-pass
X : 15+
2C^*: H and another suit, 54+ either-way # if MM then should be 54xx+
  - 2D*: P/C # ask the 5-card suit
2D^*: S and another suit, 54+ either-way # if MM then should be 45xx+
  - 2H*: P/C
2M : nat, (5)6+M
2N^*: 55(54) + mms
3X : nat, comp
# case 2: PH
X^* : S and another suit, 54+ either-way
  - 2C*: P/C
2m^*: H and m, 54+ either-way
2M : nat, (5)6+M
2N^*: 55(54) + mms
3X : nat, comp
```

3.6 vs pre

```
1m - (3M) - X*: ask for stopper; may have 4oM
1m - (3M) - P - (P) - X*: ask for stopper; may have 4oM
# resp: pen with KJxx+ (IP) or equivalent values, otherwise
# 5 good oM [3/4oM] > 1.5 stop [3N] > 4 good oM [3/4oM] > 1 stop [3N]
```

Chapter 4
util

4.1 Forcing Pass

4.1.1 XX = Q

4.2 suit GT

```
[fit in 2S] -
2N*: HSGT or ST, no shortness
  - 3X*: Qxx or xxx in X # partner having ctrl/xx is consider helped
   - 3N+: max # may need to cuebid since partner may want to ST
3S:s/o
# case 1: bidder only shows one suit
3C*: C spl GT; or H spl GT (lo); or C spl ST
   - 3D*: inv C spl
        - 3H*: H spl (lo)
        - 3S : C spl (lo)
        - 3N+: C spl ST
        - 4S : C spl (hi)
  - 3H*: inv H spl
3D*: D spl GT or ST
  - 3H*: inv
3H*: H spl GT (hi) or ST
# case 2: if bidder already shows another suit X, spl X replaced by long X
```

```
[fit in 2H] -
2S*: HSGT or ST, no shortness
  - 2N+: Qxx or xxx in X # partner having ctrl/xx is consider helped
   - 3H : min
   - 3S+: max # may need to cuebid since partner may want to ST
3H : s/o
# case 1: bidder only shows one suit
2N*: S spl GT; or D spl GT (lo); or S spl ST
  - 3C*: inv S spl
        - 3D*: D spl (lo)
        - 3H : S spl (lo)
        - 3S+: S spl ST
        - 4H : S spl (hi)
   - 3D*: inv D spl (lo)
3C*: C spl GT or ST
   - 3S*: inv
3D*: D spl GT (hi) or ST
# case 2: if bidder already shows another suit X, spl X replaced by long X
```

4.3 Lebensohl

```
1N -(2M)- 2N+: Leb
(2M)- X* - 2N+: Leb
1m -(2M)- 2N+: Leb
```

```
Leb over (2M)-
2S: NF
2N^* \rightarrow 3C^* - P^* : s/o
         - 3D*: s/o
         - 3oM: s/o
         - 3M*: ask stop
         - 3N : half stop
   -3X:18+, nat
3C^* \rightarrow 3D^*: inv+, 4+D
3D^* \rightarrow 3oM: inv+, 5+oM
# 3M* depends on context:
# 1N -(2M): 4oM, GF
\#(2M) - X^* : 4oM, GF
# 1m - (2M): m fit, ask for stopper (since we have neg X)
3oM: 6+oM, inv # 4oM if partner t/o
3N : s/o
```

4.4 maximum X

```
fit in 2M - (opp. comp to 3X) -
# if X = M - 1
X* : inv+ # allow pen with low probability
# otherwise
3M-1: inv+
```

```
(1m) - 2H [V/NV] - (3D) - X* : 2+H, inv
(1m) - 2H [V/NV] - (3C) - 3D* : 2+H, inv
```

4.5 Rubens

```
(1X) - 1M - (P/X) -
XX : 10+, near bal
1N : nat
\# if Y < X
2Y : 10+, nat, F1
\# if Y >= X
2Y^* \rightarrow 2Y+1: 10+, 5+[Y+1] # if Y+1 = M then it means good raise
2X : comp. raise
(1H) - 2C - (P/X) -
XX : 10+, near bal
2D*: 10+, F1 # usually C fit or 5+D
2H*: 10+, 5+S, F1
2S*: 6-9, 5+S
2N+: nat
(1S) - 2C - (P/X) -
XX : 10+, near bal
2D*: 10+, 5+H, F1
2H : 6-9, 5+H
2S^*: 10+, (3)4+C
2N+: nat
```

4.6 Slam bidding

4.6.1 cuebid

```
cue = 1/2nd ctrl
# if opener shows a suit (unless 1C - 1X; 1N/2N), then
opener's cue on that suit = 2 of AKQ, usually source of tricks
resp's cue on that suit = never shortness, can be Q
```

4.6.2 FF

```
[fit in 3M] -

4M : min

3M+1*: FF, mild slam interest

4X*: cuebid, strong slam interest
```

4.6.3 kickback RKC

```
[fit in S] - 4N*: ask number of keycards # 4 Ace + Trump K
5C*: 0/3 keycards
5D*: 1/4 keycards
5H^*: 2/5 keycards w/ Trump Q
5S*: 2/5 keycards w/o Trump Q
# case 1: resp. didn't show another suit
5N^*: 0/2/4 keycards, some void
   - 6C*: ask
        - 6X^*: void in X
6X*: 1/3 keycards, void in X
# case 2: resp. already shows another suit, now only two possibilities
5N^*: void in H (if resp. shows D) or D
   - 6C*: ask, no Trump Q
        - 6D*: 0/2/4 keycards w/ Trump Q
             - 6H*: inv
        - 6H*: 1/3 keycards w/ Trump Q
        - 6S*: w/o Trump Q
   - 6D^*: want to inv 1/3 keycards
        - 6H*: extra but no Trump Q
        - 6S*: no extra
        - 7S : Trump Q, extra
   - 6H*: have Trump Q, want to inv 0/2/4 keycards
   -6S^*: s/o
6C*: 0/2/4 keycards, void in H (if resp. shows C) or C
   - 6D*: ask Trump Q
        - 6H*: Trump Q, no extra
```

```
- 6S*: no Trump Q
- 7S: Trump Q, extra

6D*: 1/3 keycards w/o Trump Q, void in C or H
- 6H*: inv

6H*: 1/3 keycards w/ Trump Q, void in C or H, extra

6S*: 1/3 keycards w/ Trump Q, void in C or H
```

```
[fit in X] - [4X+1]*: ask number of keycards
# similar responses, 5N replaces void in [X+1]
```

4.6.4 ERKC

```
[fit in X] -
# if opener already shows non-void Y, then it replaces the highest ERKC
5Y*: ask number of keycards, excluding Y
   - +1*: 0/3 keycards
   - +2*: 1/4 keycards
   - +3*: 2 keycards
```

4.6.5 Obvious ERKC

```
[opp. bids Y (or bidder showed shortness in Y) and we fit in X] - 4X+2*: ask number of keycards, excluding Y # 5Y replaces ERKC in X+2 or the highest ERKC (if X+2 is NT)
```

4.6.6 ORKC

```
preempt in X (not C) - 4C*: ORKC
4D*: min
4H+: same as resp. to RKC
```

4.6.7 2-suied RKC

```
1M - 2X; 3X - 3M; ... [4M+1]: 2-suited RKC
# Queen of M and X act as 0.5 keycards
+1*: 0/3/6 keycards # may +0.5
    - +2*: ask if there's extra 0.5
    - 5M*: no
+2*: 1/4/7 keycards # may +0.5
    - +3*: ask if there's extra 0.5
    - 5M*: no # +4 = 5M
+3*: 2/5 keycards
```

+4*: 2.5/5.5 keycards

4.7 UwU

TBD (low-low, high-high)

4.8 XYZW

4.8.1 2wPCB

(https://www.ptt.cc/man/BridgeClub/D6D1/D49B/D130/M.924860463.A.html)

```
1X - 1Y; 1N
2C^* \rightarrow 2D^*: transfer accepted
        - P : s/o
        - 2M : s/o, choose a partial [M <= Y]; inv, 5+Y, 4+M [M > Y]
        - 2N*: inv
        -3Z: inv, 6+Z [Z = Y] or 4+Z [Z = X] or 5+Z and 4Y [otherwise]
        - 3N*: 5332, CoG # different from BTUBWS
   -2Y^*: max, 3Y
2D^*: GF, ask
  -2M:3M[M=Y] or 6M[M=X] or 4M[otherwise]
   - 2N : nat
  - 3X : good 5+X
2M : inv, 5+M [M = Y] or 4+M [otherwise], NF
2N^* \rightarrow 3C^*: transfer accepted
        - P : s/o
        - 3D+: ... (TBD)
3Z : ST, 4+Z [Z = X] or semi-solid 6+Z [Z = Y] or 5+Z [otherwise]
3N : s/o
4C+: ... (TBD)
4Y : s/o
```

4.8.2 PLOB

not done yet

```
- 2S*: GF, not prefer to declare NT

1N : nat NF

2X : s/o

- 2S*: F

- 2N+: nat inv

- 3S*: 6+C, 5+S, F

2N*: 15+, catchall

3C*: fit in C, ST

3D*: 5+H, 5+D, ST

3H*: 6+H, ST

3S*: 4+S, ST

3N*: 18-19, 4H
```

```
1D - 1H; 1S -
1N : nat NF
2C^*: any (9) 10-14
  - 2D : 12-14, 2-H
        - P : s/o
        - 2H : s/o
        - 2S^*: F, not prefer to declare NT
             - 2N : min
             - 3N : max
        - 2N+: nat inv
   - 2H : F, 3H
  - 2S*: general GF
  - 2N+: nat GF
2X : s/o
2N^*: 15+, catchall
3C*: fit in D, ST
3D*: 5+H, 5+C, ST
3H*: 6+H, ST
3S^*: 4+S, ST
3N^*: 18-19, 4H
```

Chapter 5 cardplay

5.1 lead

```
# lead vs suit: 3-low
\# A/K = ask for count/att, but vs slam K = ask for count
A : AK, Ax, AKQ+, (AK+)
K : AKx, Kx, KQ+, (AK+)
Q : Qx(+), QJ+, (AQJ+)
J : Jx(+), JT+, AJT+, KJT+, (AJx), (KJx)
T : Tx, T9+, AT9+, KT9+, QT9+
hi-X: Xx, xXx+
lo-X: xXx+, HxX, HxXx, HxxxX, HxXxxx..., (xxX+)
# lead vs NT: 4-th
A : Ax, AKQ+, AK
K : Kx, KQ+, AKx, AKJT+
Q : Qx(+), QJ+, AQJ+, KQT9+, (AQx)
J^*: Jx(+), JT+
T^*: Tx(+), T9+, AJT+, KJT+
9*: 9x(+), AT9+, KT9+, QT9+, [AKT9+], [AQT9+] # exceptionally
hi-X: Xx, xXx+, (Xx+)
lo-X: HxX, HxxX+, HHxX+, xXx+
```

5.2 signal

```
UDCA: lo = enc/even
# vs suit
partner's lead: att, s/p
declarer's lead: cnt, s/p
discarding: att
# vs NT
partner's lead: att, s/p
declarer's lead: cnt, s/p
discarding: lav
```

5.2.1 Smith echo

```
# vs NT, declarer wins the lead, then on the next round available for
    signal,
# if first round x - x - H - win
both defenders' lo: enc leading suit
# if first round x - win - [att] - x
leader's lo: enc leading suit
# note: on/off may depends on dummy/lead
```

5.2.2 other

```
# vs suit, knowing partner empty
hi/lo = S/P
```