

BRIDGE BASE ONLINE – Hand Generating instructions

BridgeBase Online is an incredibly powerful and amazing online resource. They host many 'vugraph' matches with world class players that you can watch, you can play online and you can also get BBO to generate hands for you to practice bidding with a robot or your partner.

All for FREE.

<http://www.bridgebase.com/>

This document details how to get BBO to deal hands for you to practise with. You can use the 'computer code' like instructions to tell BBO what kinds of hands you want, but it isn't very hard once you have tried it yourself. This document also contains many examples of such code so you can cut and paste it or adapt it for your own needs. The code examples aren't perfect and I've been learning myself as I've been going along, but they are a starting point.

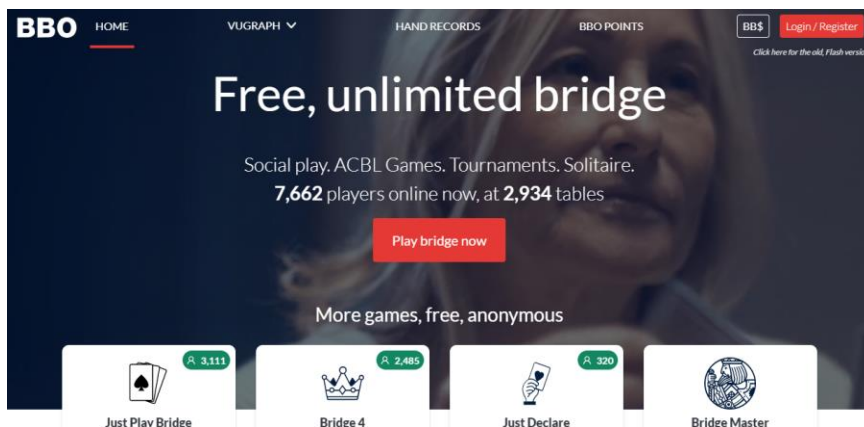
I've given instructions on how to setup a bidding table which is a wonderfully powerful way for you and your partner to practise your system and to get BBO to deal hands for a particular area.

You can also use the following webpage and pasting the syntax into it will generate a number of deals that can be analysed.

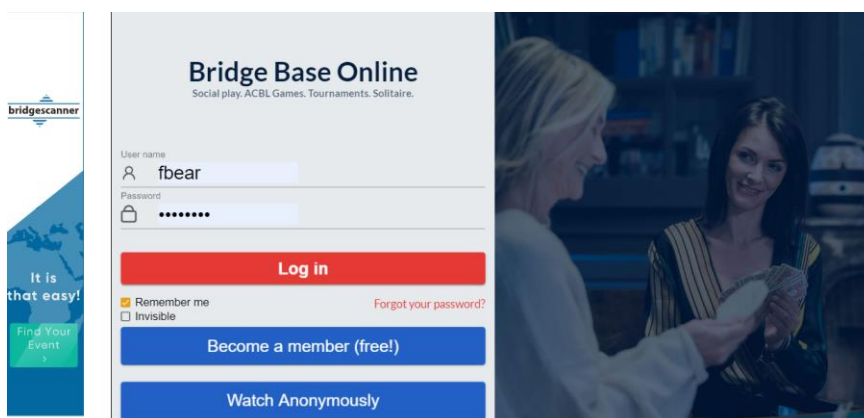
<http://www.bridgebase.com/tools/dealer/dealer.php>

Alternatively, if you have an account (it's FREE) on BBO, you can follow these instructions to setup a bidding table and get BBO to deal hands for you that fit a specific criteria and then bid them with a robot or your partner.

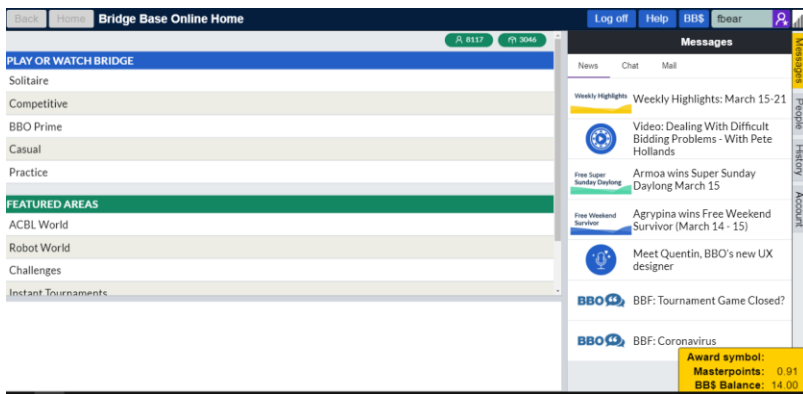
If you haven't got an account, it's easy – use the www.bridgebase.com link and follow the instructions. As at 17th March 2020, here is the screen you will see :-



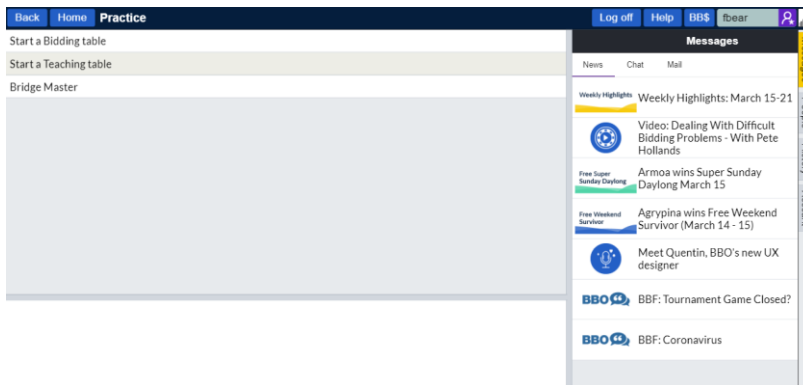
Clicking Login/Register will take you to the next screen.



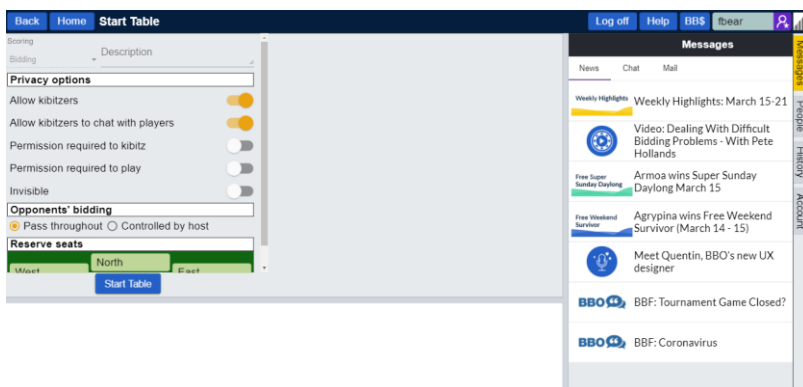
Once you've become a member and are ready to get BBO to deal hands for you, login from this screen and the BBO welcome screen will be displayed.



To get BBO to deal hands for you, click 'PRACTICE' to get the next screen displayed.

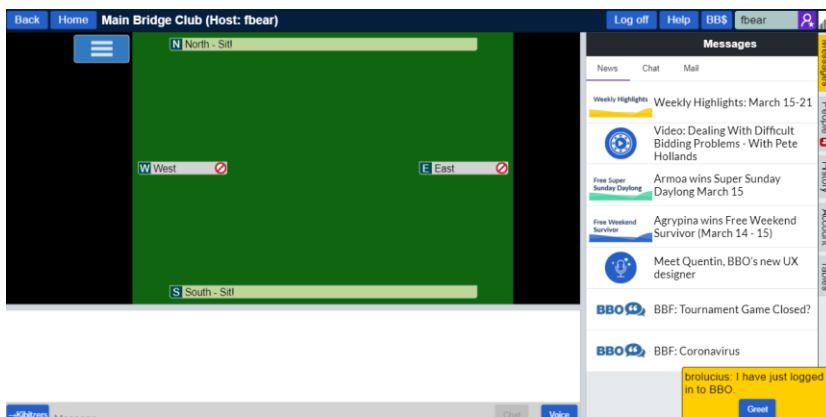


Then click 'Start a Bidding table' to here :

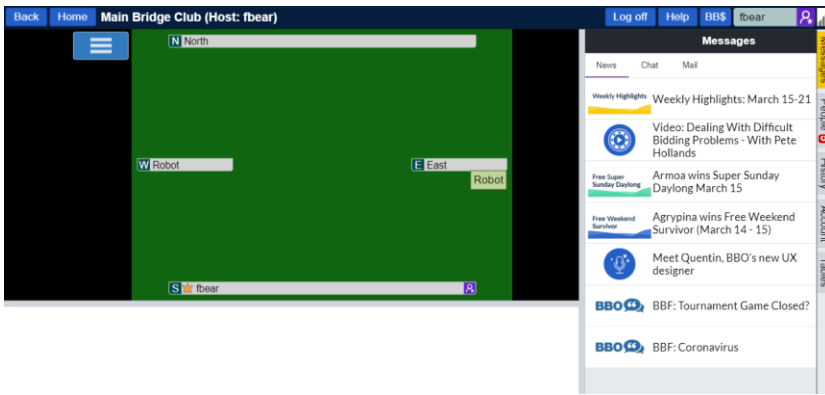


Under 'Reserve Seats' – if you have a partner who you want to practise with, enter their and your BBO account names into the North and South boxes. If you want to practise on your own, then leave them blank.

Click 'Start Table' to this next screen :

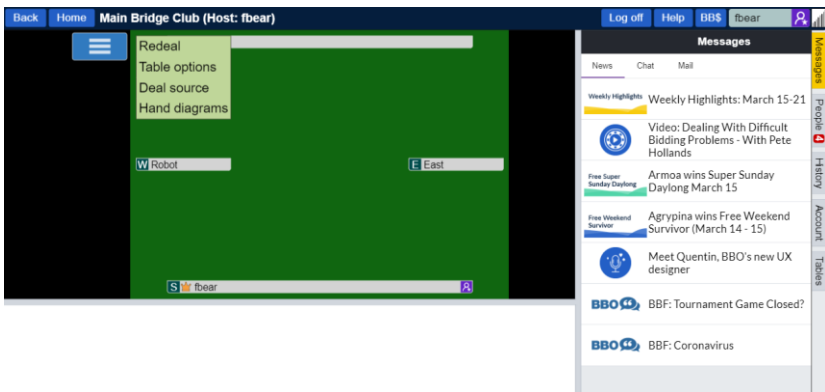


On the table, click either the North or South seat to sit (unless you reserved a seat on the previous screen)

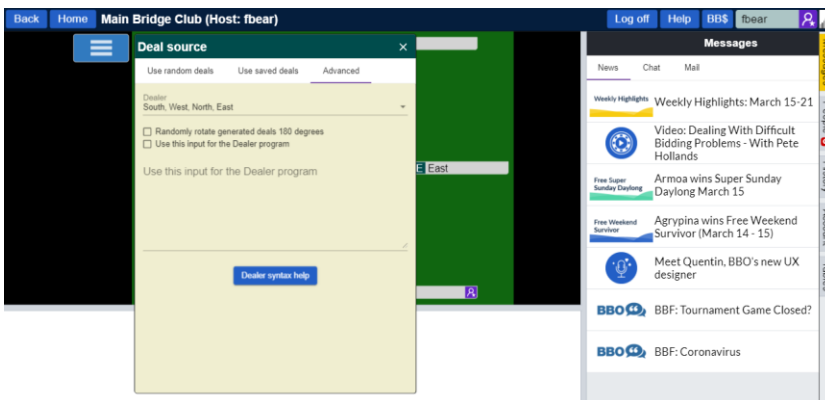


Then click on each of the other seats and select 'Robot' - note if you want the E-W pair to pass don't bother clicking on 'Robot' for them just select it for your North or South partner if bidding on your own.

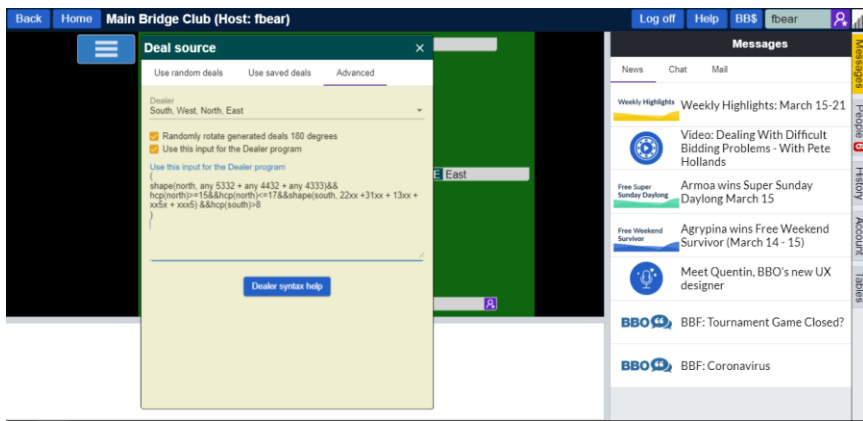
Click 'Deal Source' from the 3 line dropdown box and then 'Advanced' from the subsequent screen.



Then the following will be displayed:



From the 'Dealer' drop down box, uncheck the seats you don't want to open the bidding if required - e.g. if you want to practice 1NT openings set North or South as the only player to open the bidding



Click in the checkbox for the 'Use this input for the Dealer program' and optionally click in the checkbox 'Randomly rotate generated deals 180 degrees' if you want BBO to randomly give the criteria hands to you or your partner.

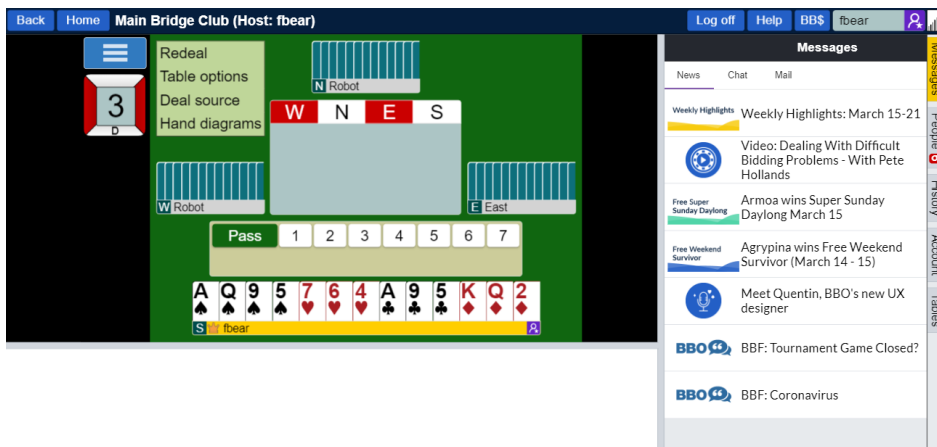
Then cut and paste the relevant code from this document into the open space below or enter your own. e.g. Use the code below to force a 1NT opening for North and then some kind of minor suit holding for South.

It is fairly self explanatory, but the keyword 'shape' means north can have any of the exact shapes listed with 'hcp' high card points in the range 15-17. And South's shape can be any of those listed where x can be any number and the order is SHDC.

```
(
shape(north, any 5332 + any 4432 + any 4333)&&
hcp(north)>=15&&hcp(north)<=17&&shape(south, 22xx +31xx + 13xx + xx5x + xxx5) &&hcp(south)>8
)
```

Click on the X 'Close' in the top right corner of the window.

Click 'Redeal' from the 3 line drop down on the table window to get a new deal satisfying the dealing criteria



Pete Foster (Mar 2020)

MINOR SUITS

To get an opening 1D with 4 diamonds & a 4 card major and a weak NT

(clubs(north)>1&&diamonds(north)==4&&(hearts(north)==4||spades(north)==4)&&((hcp(north)>=12&&hcp(north)<=14)||((hcp(north)>=18&&hcp(north)<=19)))

To get an opening 1D with a weak NT holding 4 diamonds, responder holds 4 hearts & a 4 card spade fit

(clubs(north)>1&&clubs(north)<4&&diamonds(north)==4&&spades(north)==4&&hcp(north)>=12&&hcp(north)<=14)&&(hearts(south)==4&&spades(south)==4&&hcp(south)>5)

To get an opening 1C bid (NB most of the hands will provide a 1NT 12-14 opening as it is far more common than the 18-19 hand).

(clubs(north)>=1&&diamonds(north)<=3&&hearts(north)<=4&&spades(north)<=4&&((hcp(north)>=12&&hcp(north)<=14)||((hcp(north)>=18&&hcp(north)<=19))))||
(clubs(north)>=4&&diamonds(north)<clubs(north)&&hearts(north)<clubs(north)&&spades(north)<clubs(north)&&hcp(north)>=12&&!((hcp(north)>=15||hcp(north)<=17)))

To get an opening 1C bid with a 1D/1H transfer response AND 4th hand intervention

((
 clubs(north)>=1&&diamonds(north)<=3&&hearts(north)<=4&&spades(north)<=4&&
 (
 (hcp(north)>=12&&hcp(north)<=14)||((hcp(north)>=18&&hcp(north)<=19))
)
)
||
(
 clubs(north)>=4&&diamonds(north)<clubs(north)&&hearts(north)<clubs(north)&&spades(north)<clubs(north)&&
 hcp(north)>=12&&!((hcp(north)>=15&&hcp(north)<=17))
))&&
(
 (hcp(south)>5&&hearts(south)>3&&hcp(west)>11&&(spades(west)>4||shape(west, xx6x + xxx6)))||
 (hcp(south)>5&&hearts(south)<4&&spades(south)>3&&hcp(west)>11&&shape(west, x5xx + xx6x + xxx6))
)

To get an opening 1C bid that is NOT a weak 12-14 1NT

hcp(north)>11&&
((!shape(north, any 4333 + any 4432 + any 5332)&&
clubs(north)>=1&&diamonds(north)<=4&&hearts(north)<=4&&spades(north)<=4)||
(shape(north, any 4333 + any 4432 + any 5332)&&hcp(north)>17&&hcp(north)<20))

To get an opening 1C bid and a 4-4 major suit fit.

(clubs(north)>=1&&diamonds(north)<=3&&hearts(north)<=4&&spades(north)<=4&&((hcp(north)>=12&&hcp(north)<=14)||((hcp(north)>=18&&hcp(north)<=19))))||
(clubs(north)>=4&&diamonds(north)<clubs(north)&&hearts(north)<clubs(north)&&spades(north)<clubs(north)&&hcp(north)>=12&&!((hcp(north)>=15||hcp(north)<=17)))&&
((spades(south)>=4&&spades(north)==4)||((hearts(south)>=4&&hearts(north)==4))&&hcp(south)>=6

To get an opening 1C bid and a 4-4 major suit fit and opener is 18-19

(clubs(north)>=1&&diamonds(north)<=3&&hearts(north)<=4&&spades(north)<=4&&(hcp(north)>=18&&hcp(north)<=19))&&
&&
((spades(south)>=4&&spades(north)==4)||((hearts(south)>=4&&hearts(north)==4))&&hcp(south)>=6

To get an opening 1C bid and inverted 2C response.

(clubs(south)>=4&&hearts(south)<=3&&spades(south)<=3&&hcp(south)>=10)&&(clubs(north)>=1&&diamonds(north)<=3&&hearts(north)<=4&&spades(north)<=4&&((hcp(north)>=12&&hcp(north)<=14)||((hcp(north)>=18&&hcp(north)<=19))))

To get an opening 1C bid and responder hold 4+ clubs.

(hcp(north)+hcp(south)>=22)&&(clubs(south)>=4&&hearts(south)<=3&&spades(south)<=3&&diamonds(south)<=3)&&(clubs(north)>=1&&diamonds(north)<=3&&hearts(north)<=4&&spades(north)<=4&&((hcp(north)>=12&&hcp(north)<=14)||((hcp(north)>=18&&hcp(north)<=19))))

To get a natural opening 1C bid that isn't a strong NT:-

(clubs(north)>=4&&hearts(north)<=4&&spades(north)<=4&&diamonds(north)<=4&&hcp(north)>=12&&hcp(north)<=19&&!(hcp(north)>=15&&hcp(north)<=17))

To get a 1m opening and responder has the majors:-

#1C opening

(
(

Balanced 12-14 or 18-19 NT 1C opening

(clubs(north)>=1&&diamonds(north)<=3&&hearts(north)<=4&&spades(north)<=4&&((hcp(north)>=12&&hcp(north)<=14)||((hcp(north)>=18&&hcp(north)<=19))))||

Natural 1C opening that isn't a strong NT

(clubs(north)>=4&&diamonds(north)<clubs(north)&&hearts(north)<clubs(north)&&spades(north)<clubs(north)&&hcp(north)>=12&&!(shape(north, 3334 + 4234 + 2434 + 3424 + 4324 + 2335 + 3235 + 3325)&&hcp(north)>=15&&hcp(north)<=17))

)||

#1D opening

(
(

diamonds(north)>=4&& clubs(north)<diamonds(north)&&hearts(north)<=4&&spades(north)<=4&&hcp(north)>=12

)

)&&

#South holds the majors

spades(south)>=4&&hearts(south)>=4&&hcp(south)>=5

INVERTED MINOR

To get an opening 1m and inverted response:-

CLUBS

```
(
  # South
  (
    # Give South 5+ clubs and 10+ HCP which is not a balanced NT response
    (
      clubs(south)>=5&&diamonds(south)<=3&&hearts(south)<=3&&spades(south)<=3&&hcp(south)>=10&&!shape(south, any 4333 + any 4432)
    )
    ||
    # or a balanced hand with >15 HCP (avoiding 1/2/3NT responses)
    (
      shape(south, 2335 + 3235 + 3325 + 3334 + 2344 + 3244)&&hcp(south)>15
    )
  )
  &&
  # North
  (
    # North may have a 12-14 or 18-19 NT hand
    (
      clubs(north)>=2&&diamonds(north)<=3&&hearts(north)<=4&&spades(north)<=4&&
      ((hcp(north)>=12&&hcp(north)<=14)||((hcp(north)>=18&&hcp(north)<=19))
    )
    ||
    # or any unbalanced hand with longer clubs than the other suit
    (
      clubs(north)>=5&&clubs(north)>diamonds(north)&& clubs(north)>hearts(north)&&
      clubs(north)>spades(north)&&!shape(north, any 5332)&&hcp(north)>=12
    )
  )
)
```

DIAMONDS

```
(
  # South
  (
    # South should have 4+ diamonds and 10+ HCP which is not a balanced NT response
    (
      diamonds(south)>=4&&hearts(south)<=3&&spades(south)<=3&&clubs(south)<=4&&hcp(south)>=10&&!shape(south, any 4333 + any 4432)
    )
    ||
    # or any unbalanced hand with longer diamonds than the other suit
    (
      diamonds(south)>=5&&diamonds(south)>hearts(south)&&diamonds(south)>spades(south)&&diamonds(south)>
      clubs(south)&&hcp(south)>=12
    )
  )
  &&
  # North
  (
    # North should either have a 12-14 or 18-19 NT hand
    (
      diamonds(north)>=4&&clubs(north)<=3&&hearts(north)<=4&&spades(north)<=4&&((hcp(north)>=12&&hcp(north)
      )<=14)||((hcp(north)>=18&&hcp(north)<=19))
    )
    ||
    # or any unbalanced hand with longer diamonds than the other suit
    (
      diamonds(north)>=5&& diamonds(north)>clubs(north)&&diamonds(north)>hearts(north)&&
      diamonds(north)>spades(north)&&!shape(north, any 5332)&&hcp(north)>=12
    )
  )
)
```

)
)
To get an opening 1m and inverted response when opener has a reversing hand:-

```
(  
  ((clubs(south)>=4&&diamonds(south)<=3&&hearts(south)<=3&&spades(south)<=3&&hcp(south)>=10&&!shape(south  
  , any 4333 + any 4432))||  
  (clubs(south)>=4&&diamonds(south)<=4&&hearts(south)<=3&&spades(south)<=3&&hcp(south)>=16))&&  
  ((clubs(north)>=5&&(diamonds(north)==4||hearts(north)==4||spades(north)==4))&&  
  (hcp(north)>=16&&hcp(north)<=20))  
)  
||  
(  
  diamonds(south)>=4&&hearts(south)<=3&&spades(south)<=3&&clubs(south)<=4&&hcp(south)>=10&&!shape(south,  
  any 4333 + any 4432))&&  
  (diamonds(north)>=5&&clubs(north)<=3&&(hearts(north)==4||spades(north)==4)&&((hcp(north)>=16&&hcp(north)<=2  
  0))  
)
```

To get an opening 1m and inverted response when the opening is unbalanced:-

Basically specify a 1C or 1D opening with responder holding 4 card support and 10+, then bar weak and strong NT hands.

```
(  
(  
clubs(north)>=4&&hearts(north)<=4&&spades(north)<=4&&diamonds(north)<=4&&  
clubs(south)>=5&&diamonds(south)<=4&&hearts(south)<=4&&spades(south)<=4  
)  
||  
(  
(diamonds(south)>=4&&hearts(south)<=3&&spades(south)<=3&&clubs(south)<=3&&  
diamonds(north)>=4&&clubs(north)<=4&&hearts(north)<=4&&spades(north)<=4)||  
(diamonds(south)>=5&&hearts(south)<=4&&spades(south)<=4&&clubs(south)<=4&&  
diamonds(north)>=4&&clubs(north)<=4&&hearts(north)<=4&&spades(north)<=4)  
)  
)&&  
hcp(south)>=10&&hcp(north)>12&&hcp(north)<=19&&  
!(shape(north, any 4333 + any 4432 + any 5332)&&hcp(north)>=12&&hcp(north)<=14)&&  
!(shape(north, any 4333 + any 4432 + any 5332)&&hcp(north)>=15&&hcp(north)<=17)
```

To get an inverted minor suit raise and opener has a singleton.

```
(  
(  
shape(north, 1xxx + x1xx + xx1x)&&  
clubs(north)>=4&&hearts(north)<=4&&spades(north)<=4&&diamonds(north)<=4&&  
clubs(south)>=5&&diamonds(south)<=3&&hearts(south)<=3&&spades(south)<=3  
)  
||  
(  
shape(north, 1xxx + x1xx + xxx1)&&  
(  
(diamonds(north)>=4&&clubs(north)<=3&&hearts(north)<=4&&spades(north)<=4)||  
(diamonds(north)>=5&&clubs(north)<=4&&hearts(north)<=4&&spades(north)<=4)  
)&&  
diamonds(south)>=4&&hearts(south)<=3&&spades(south)<=3&&clubs(south)<=4  
)  
)&&  
hcp(south)>=10&&hcp(north)>12&&hcp(north)<=19
```


MAJOR SUITS

To get an opening 1M bid:-

(hearts(north)>=5||spades(north)>=5)&&hcp(north)>=12&&hcp(north)<=19&&!(shape(north, any 5332)&&hcp(north)>=15&&hcp(north)<=17)

To get a responding hand to 1M with 7+ points:-

(hearts(north)>=5||spades(north)>=5)&&hcp(north)>=12&&hcp(north)<=19&&!(shape(north, any 5332)&&hcp(north)>=15&&hcp(north)<=17)&&hcp(south)>=7

To get an opening 1M and responding hand with 10-12 HCP:-

(hearts(north)>=5||spades(north)>=5)&&hcp(north)>=12&&hcp(north)<=19&&!(shape(north, any 5332)&&hcp(north)>=15&&hcp(north)<=17)&&(hcp(south)>=10&&hcp(south)<=12)

To get a 1NT responding hand to 1M :-

((hearts(north)>=5&&hearts(south)<3&&spades(south)<4)||spades(north)>=5&&spades(south)<3))&&hcp(north)>=12&&hcp(north)<=19&&!(shape(north, any 5332)&&hcp(north)>=15&&hcp(north)<=17)&&hcp(south)<13&&hcp(south)>4

To get a responding hand to 1M with 3+ card support and 4+ HCP:-

((hearts(north)>=5&&hearts(south)>=3)||spades(north)>=5&&spades(south)>=3))&&hcp(north)>=12&&hcp(north)<=19&&!(shape(north, any 5332)&&hcp(north)>=15&&hcp(north)<=17)&&hcp(south)>4

To get a 5 card Major with shape 5422:-

hcp(north)>=12&&hcp(north)<=19&&shape(north, 5422 + 4522 + 5242 + 5224 + 2542 + 2524)

To get a 5332 1M opening and responder with <3 card support and unable to 2/1 GF

NB – you can use this to compare the difference between using 1M-1NT (NF or F1) and 1M-2C as a puppet to 2D to show either a weak one suiter or invitational or natural GF.

Restrict opener to a 5332 distribution:-

```
( (hcp(north)>=12&&hcp(north)<=14)||
  (hcp(north)>=18&&hcp(north)<=19)
)&&
hcp(south)>5&&hcp(south)<12&&
(
  (shape(north, 3532+3523+2533)&&hearts(south)<3&&spades(south)<4)||
  (shape(north, 5332+5323+5233)&&spades(south)<3)
)
```

Let opener have any shape holding a 5 card major:-

```
( (hcp(north)>=12&&hcp(north)<=14)||
  (hcp(north)>=18&&hcp(north)<=19)
)&&
hcp(south)>5&&hcp(south)<12&&
(
  (shape(north, x5xx)&&hearts(south)<3&&spades(south)<4)||
  (shape(north, 5xxx)&&spades(south)<3)
)
```

To get a 1M opening and responder without support and 6+ HCP

```
( (hcp(north)>=12&&hcp(north)<=14)||
  (hcp(north)>=18&&hcp(north)<=19)
)&&
hcp(south)>5&&
(
```

```
(shape(north, x5xx)&&hearts(south)<3&&spades(south)<4)||
(shape(north, 5xxx)&&spades(south)<3)
```

To get a 1 opening and responder without support and 10-12 HCP

```
(hcp(north)>11&&hcp(south)>9&&hcp(south)<13&&((shape(north,5xxx)&&shape(south,
2xxx))||((shape(north,x5xx)&&shape(south, 32xx))||((shape(north,xx5x)&&shape(south, xxx6))))))
```

To get a 1M opening and responder with <3 card support and 4-4 or better side suit fit

```
hcp(north)>=12&&hcp(north)<20&&
hcp(south)>6&&
```

```
(
(shape(north, x54x)&&hearts(south)<3&&spades(south)<4&&diamonds(south)>=4)||
(shape(north, x5x4)&&hearts(south)<3&&spades(south)<4&&clubs(south)>=4)||
(shape(north, 54xx)&&spades(south)<3&&hearts(south)>=4)||
(shape(north, 5x4x)&&spades(south)<3&&diamonds(south)>=4)||
(shape(north, 5xx4)&&spades(south)<3&&clubs(south)>=4)
)
```

To get a 1NT responding hand to 5332 shape 1M with <3 card support and a 6+ card lower ranking suit

```
hcp(north)>=12&&hcp(north)<=19&&!((shape(north, any 5332)&&hcp(north)>=15&&hcp(north)<=17)&&
hcp(south)>6&&hcp(south)<12&&
```

```
(
(hearts(north)>=5&&hearts(south)<3&&spades(south)<4&&(diamonds(south)>5||clubs(south)>5))||
(spades(north)>=5&&spades(south)<3&&(diamonds(south)>5||clubs(south)>5||hearts(south)>5))
)
```

To get a 1NT response to 1M with <3 card support and a 6+ card lower ranking suit OR 3 card support 10-12

NB – you can use this to compare the difference between using 1M-1NT (NF) and 1M-2C as a puppet to 2D to show either a weak one suiter or invitational or natural GF.

```
hcp(north)>=12&&hcp(north)<=19&&!((shape(north, any 5332)&&hcp(north)>=15&&hcp(north)<=17)&&
```

```
((
(hcp(south)>5&&hcp(south)<12)&&
((hearts(north)>=5&&hearts(south)<3&&spades(south)<4&&(diamonds(south)>5||clubs(south)>5))||
(spades(north)>=5&&spades(south)<3&&(diamonds(south)>5||clubs(south)>5||hearts(south)>5)))
)||
(
(hcp(south)>9&&hcp(south)<12)&&
((hearts(north)>=5&&hearts(south)==3&&spades(south)<4))||
(spades(north)>=5&&spades(south)==3))
))
```

IN COMPETITION

To get a responding hand to 1M with 3+ card support and 2+ HCP with intervention:-

```
((hearts(north)>=5&&hearts(south)>=3)||((spades(north)>=5&&spades(south)>=3))&&hcp(north)>=12&&hcp(north)<=19&&
!(shape(north, any 5332)&&hcp(north)>=15&&hcp(north)<=17)&&hcp(south)>=2&&hcp(east)>=13&&shape(east, any 5xxx
+ any 4441)
```

To get a responding hand to 1M with 3 card support and 10-12 HCP with intervention:-

```
((hearts(north)>=5&&hearts(south)==3)||((spades(north)>=5&&spades(south)==3))&&hcp(north)>=12&&hcp(north)<=19&&
!(shape(north, any
5332)&&hcp(north)>=15&&hcp(north)<=17)&&(hcp(south)>=10&&hcp(south)<=12)&&hcp(east)>=13&&shape(east, any
5xxx + any 4441)
```

To get a responding hand to 1M with <4 card support and 10-12 OR 4 card support 0-9 HCP with intervention:-

```
hcp(north)>=12&&hcp(north)<=19&&!(shape(north, any 5332)&&hcp(north)>=15&&hcp(north)<=17)&&
hcp(east)>=13&&shape(east, any 5xxx + any 4441)&&
(
  (
    hcp(south)>=10&&hcp(south)<=12&&
    ( (hearts(north)>=5&&hearts(south)<=3&&spades(south)<4)|| (spades(north)>=5&&spades(south)<=3) )
  )||
  (
    hcp(south)<10&&
    ( (hearts(north)>=5&&hearts(south)==4)|| (spades(north)>=5&&spades(south)==4) )
  )
)
```

To get a responding hand to 1M with <4 card support and 10-12 HCP with takeout X by RHO:-

```
hcp(north)>=12&&hcp(north)<=19&&!(shape(north, any 5332)&&hcp(north)>=15&&hcp(north)<=17)&&
hcp(east)>=13&&hcp(south)>=10&&hcp(south)<=12&&
(
  (hearts(north)>=5&&hearts(south)<=3&&spades(south)<4&&
    shape(east, 4144 + 4045 + 4054 + 4135 + 4153))||
  (spades(north)>=5&&spades(south)<=3&&shape(east, 1444 + 0445 + 0454 + 1435 + 1453))
)
```

1NT OPENING

To get an opening 1NT:-

```
strongNT =  
(  
shape(north, any 5332 + any 4432 + any 4333)&&  
hcp(north)>=15&&hcp(north)<=17  
)  
condition strongNT
```

To get an opening 1NT with a 5 card Major with shape 5422 or 5332:-

```
hcp(north)>=15&&hcp(north)<=17 &&  
(  
  (shape(north, 5422 + 4522) && hcp(north, clubs)>4 && hcp(north, diamonds)>4) ||  
  (shape(north, 5242) && hcp(north, clubs)>4 && hcp(north, hearts)>4) ||  
  (shape(north, 5224) && hcp(north, hearts)>4 && hcp(north, diamonds)>4) ||  
  (shape(north, 2542) && hcp(north, clubs)>4 && hcp(north, spades)>4) ||  
  (shape(north, 2524) && hcp(north, spades)>4 && hcp(north, diamonds)>4) ||  
  (shape(north, 5332 + 5233 + 5323 + 3532 + 3523 + 2533))  
)
```

To get an opening 1NT with the balance of points:-

```
condition strongNT&&hcp(south)>6
```

To get an opening 1NT with the balance of points and responder no more than 4 cards in majors:-

```
condition strongNT&&(shape(south, 22xx + 31xx + 13xx + 21xx + 12xx + 30xx + 03xx))&&hcp(south)>6
```

To get an opening 1NT with the balance of points and responder with a 5+ card minor:-

```
condition strongNT&&shape(south, 22xx + 31xx + 13xx + xx5x + xxx5) &&hcp(south)>6
```

To get an opening 1NT with the balance of points and responder with any 5 card suit or 4441:-

```
condition strongNT&&shape(south, any 5xxx + any 4441) &&hcp(south)>6
```

To get an opening 1NT with a 2 suiter responding hand:-

```
condition strongNT&&shape(south, any 54xx + any 55xx + any 64xx)&&hcp(south)>=6
```

To get an opening 1NT with a 2S, 3x or 2NT response:-

```
condition strongNT&&  
( (  
  shape(south, any 4333 + any 4432)&&  
  hcp(south)>15  
) ||  
(  
  shape(south, xx6x + xxx6 + xx7x + xxx7)&&  
  hcp(south)<7  
) ||  
(  
  hcp(south)<9&&  
  ((shape(south, xxx6)&&hcp(south, clubs)>4&&hascard(south, TC)) ||  
  (shape(south, xx6x)&&hcp(south, diamonds)>4&&hascard(south, TD)) ||  
  (shape(south, x6xx)&&hcp(south, hearts)>4&&hascard(south, TH)) ||  
  (shape(south, 6xxx)&&hcp(south, spades)>4&&hascard(south, TS)))  
)  
)
```

To get an opening 1NT with the balance of points and a Robot intervention:-

condition strongNT&&
hcp(east)>12&&shape(east, any 6xxx + any 5440 + any 55xx)&&
(hcp(north)+hcp(south))>=21)

To get an opening 1NT with a 5 card Major and responder also has a 5 card suit:-

shape(north, 5332 + 5323 + 5233 + 3532 + 3523 + 2533)&&
hcp(north)>=15&&hcp(north)<=17&&
shape(south, any 5xxx) &&hcp(south)>7

REVERSES

```
(hcp(north)>=16&&hcp(north)<=21) && (hcp(south)>4) &&
(
(hearts(north)>=5&&spades(north)==4&&spades(south)<4&&hearts(south)<3)||
(diamonds(north)>=5&&hearts(north)==4&&spades(south)>=4)||
(clubs(north)>=5&&diamonds(north)==4&&(hearts(south)>=4||spades(south)>=4))||
(clubs(north)>=5&&hearts(north)==4&&spades(south)>=4)
)
```

To get a reversing shape where the responding hand has GF values:-

```
(hcp(south)>=12)&&
( (hcp(north)>=16&&hcp(north)<=21) || (hcp(north)>=11&&hcp(north)<=15) ) &&
(
(hearts(north)>=5&&spades(north)==4&&(clubs(south)>=5||diamonds(south)>=5) )||
(diamonds(north)>=5&&hearts(north)==4&&spades(south)>=4)||
(clubs(north)>=5&&diamonds(north)==4&&(hearts(south)>=4||spades(south)>=4))||
(clubs(north)>=5&&hearts(north)==4&&spades(south)>=4)
)
```

To get a reversing shape where the responding hand has a 2/1 GF response:-

```
(hcp(south)>=13)&&
( (hcp(north)>=16&&hcp(north)<=21) || (hcp(north)>=11&&hcp(north)<=15) ) &&
(
(hearts(north)>=5&&spades(north)==4&&(clubs(south)>=5||diamonds(south)>=5) )||
(diamonds(north)>=5&&hearts(north)==4&&clubs(south)>=5)||
(diamonds(north)>=5&&spades(north)==4&&clubs(south)>=5)
)
```

NON-FORCING FREE-BIDS

To get an opening 1C bid and 1M overcall and responder have 5+ cards in a displaced suit with 6+ HCP

```
(clubs(north)>=1&&diamonds(north)<=3&&hearts(north)<=4&&spades(north)<=4&&((hcp(north)>=12&&hcp(north)<=14)||
hcp(north)>=18&&hcp(north)<=19))
&&
(
(hearts(east)>=5&&diamonds(south)>=5)||
(spades(east)>=5&&(diamonds(south)>=5||hearts(south)>=5))
)
&&hcp(east)>=12
&&hcp(south)>=6
```

4441 HANDS

To get a 4441 hand:-

```
(shape(north, 4441)||shape(north, 4414)||shape(north, 4144)||shape(north, 1444))&&
hcp(north)>=12&&hcp(south)>=6
```

TWO OVER ONE GAME FORCE

To get a 5 card major opening & a responding hand with a 2/1 GF response:-

```
(hcp(south)>=13)&&
( (hcp(north)>=16&&hcp(north)<=21) || (hcp(north)>=11&&hcp(north)<=14) ) &&
(
(hearts(north)>=5&&(clubs(south)>=5||diamonds(south)>=5) )||
(spades(north)>=5&&(clubs(south)>=5||diamonds(south)>=5||hearts(south)>=5) )
)
```

)

TWO SUITED OVERCALLS

To get a Michaels Cue bid or Unusual 2NT overcall (NB will also get 'extremes' e.g. (1C)-? D+S)

```
(
  (hearts(west)>=5&&shape(north, 5x5x+5xx5+xx55))||
  (spades(west)>=5&&shape(north, x55x+x5x5+xx55))||
  (clubs(west)>=4&&hearts(west)<=4&&spades(west)<=4&&shape(north, 45xx+54xx+55xx+5x5x+x55x))||
  (diamonds(west)>=4&&hearts(west)<=4&&spades(west)<=4&&shape(north, 45xx+54xx+55xx+5xx5+x5x5))
)&&
hcp(west)>=12&&hcp(west)<=19&&!(shape(west, any 5332 + any 4432 + any 4333)&&hcp(west)>=15&&hcp(west)<=17)
&&hcp(north)>=6
```

WIDE RANGE 1NT RESPONSE

To get a 1D/M opening with 1NT response

```
(
  (hearts(north)>=5&&shape(south, 3244 + 3253 + 3235 + 31xx + 21xx))||
  (spades(north)>=5&&shape(south, 2344 + 2353 + 2335 + 1xxx + 2xxx))||
  ((diamonds(north)>=5||shape(north, 3343))&&shape(south, 3235 + 2335 + 3325))
)&&
hcp(north)>=12&&hcp(north)<=19&&
!(shape(north, any 5332)&&hcp(north)>=15&&hcp(north)<=17)&&
hcp(south)>=6&&hcp(south)<=11
```

OPENING 2C

To get a 2C opening, either less than 5 loser hand & 18+ HCP or any 23+ HCP

```
(
  (
    loser(north)<5&&hcp(north)>17
  )||
  hcp(north)>=23
)&&
!(shape(north, any 5332 + any 4432 + any 4333) &&hcp(north)>19&&hcp(north)<23)
```

To get distributional hands that qualify for a 2C opening – i.e. satisfy the ‘Rule of 25’ but are less than 22 HCP

```
loser(south)<5&&hcp(south)>16&&hcp(south)<22&&shape(south, any 6xxx + any 7xxx + any 55xx)
```

To get a 2C opening, either less than 5 loser hand & 19+ HCP or any 23+ HCP with a potential overcall (NB BBO robots don't overcall, so you need to rebid considering the auction if they had

```
((loser(south)<5&&hcp(south)>19)||hcp(south)>=23)&&
(
  (shape(east,xxx6)&&hcp(east,clubs)>=5)||
  (shape(east,xx6x)&&hcp(east,diamonds)>=5)||
  (shape(east,x6xx)&&hcp(east,hearts)>=5)||
  (shape(east,6xxx)&&hcp(east,spades)>=5)
)
```

OPENING 2D – EKREN

To get an Ekren opening with a responding 15 HCP opposite.

```
(
  hearts(north)>=4&&spades(north)>=4&&
  hcp(north)>=5&&hcp(north)<=9
)&&
hcp(south)>=15
```

OPENING 2D/2M – ‘MULTI’ or ‘LUCAS’

To get a 5-9 HCP opening with 6 card Major OR 5+ card Major & 4+ cards in ANY other suit

```
hcp(north)>4&&hcp(north)<10&&
(
  shape(north, 6xxx + x6xx)||
  shape(north, 55xx + 54xx + 45xx + 5x4x + 5xx4 + x54x + x5x4 + 5x5x + 5xx5 + x55x + x5x5)
)
```

To get an opening 2D (showing 5M&4+m) OR opening 2M (showing a 6 card suit) both with 5-9 HCP

```
hcp(north)>4&&hcp(north)<10&&
(
  shape(north, 6xxx + x6xx)||
  shape(north, 5x4x + 5xx4 + x54x + x5x4 + 5x5x + 5xx5 + x55x + x5x5)
)
```

To get an opening 2D (showing 5M&4+m) and LHO has X to show 12-14 weak NT or 19+ any distribution

```
hcp(north)>4&&hcp(north)<10&&shape(north, 5x4x + 5xx4 + x54x + x5x4 + 5x5x + 5xx5 + x55x + x5x5)&&
((hcp(east)>11&&hcp(east)<15&&shape(east, any 4333 + any 4432 + 2335 + 2353 + 3235 + 3253))|(hcp(east)>18))
```

To get an opening 2D (showing 5M&4+m) OR opening 2M (showing a 6 card suit) both with 5-9 HCP and 4 card support with responder

```
hcp(north)>4&&hcp(north)<10&&
((
(shape(north, 6xxx)||
shape(north, 5x4x + 5xx4 + 5x5x + 5xx5))&&shape(south, 4xxx)
)||
(
(shape(north, x6xx)||
shape(north, x54x + x5x4 + x55x + x5x5))&&shape(south, x4xx)
))
```

OPENING 2NT:-

To get an opening 2NT

```
shape(north, any 5332 + any 4432 + any 4333)&&  
hcp(north)>=20&&hcp(north)<=22
```

To get an opening 2NT and responder has both minors

```
shape(north, any 5332 + any 4432 + any 4333)&&  
hcp(north)>=20&&hcp(north)<=22&&  
(  
  (shape(south, xx54 + xx45 + xx55 + xx65 + xx56)&&hcp(south)>3) ||  
  (shape(south, 2344 + 3244)&&hcp(south)>10)  
)
```

To get an opening 1NT or 2NT with a 2/3C, 2/3S or 2N response:-

```
(
  shape(north, any 5332 + any 4432 + any 4333)&&
  ((hcp(north)>=15&&hcp(north)<=17)||((hcp(north)>=20&&hcp(north)<=22))
)&&
(
  (
    shape(south, any 4333 + any 4432 + any 4441)&&
    hcp(south)>7
  )||
  (
    shape(south, xx6x + xxx6 + xx7x + xxx7)&&
    hcp(south)<8
  )||
  (
    shape(south, xx54 + xx45 + xx55 + xx65 + xx56)&&
    hcp(south)>7
  )
)
```

To get a 1NT or 2NT opening with balanced hands and minor suit 2 suiters :

```
shape(north, any 5332 + any 4432 + any 4333)&&
(
  hcp(north)>=20&&hcp(north)<=22&&
  (
    (shape(south, any 4333 + any 2344)&&hcp(south)>11)||
    (shape(south, 2344 + 3244 + 1354 + 3154 + 2254)&&hcp(south)>10)
  )
)||
(
  hcp(north)>=15&&hcp(north)<=17&&
  (
    (shape(south, any 4333 + any 2344)&&hcp(south)>16)||
    (shape(south, 2344 + 3244 + 1354 + 3154 + 2254)&&hcp(south)>15)
  )
)
```

To get a 1NT or 2NT opening with responding hands with major suit 2 suiters or minor 6 cards or 55 shape:

```
shape(north, any 5332 + any 4432 + any 4333)&&
(
  (hcp(north)>=20&&hcp(north)<=22)||((hcp(north)>=15&&hcp(north)<=17&&hcp(south)>=5)
)&&
(
  shape(south, 54xx + 45xx + 55xx + xx55)||((shape(south, xxx6 + xx6x)&&hcp(south)>=6)
)
```

To get a 2NT opening with responding hands of 8+ HCP and 2 suited or single suited in a minor:

```
shape(north, any 5332 + any 4432 + any 4333)&&hcp(north)>=20&&hcp(north)<=22&&
shape(south, any 54xx + any 55xx + xxx6 + xx6x)&&
hcp(south)>=8
```

PRE-EMPTIVE OPENINGS

To get a Weak 2M opening

```
hcp(south)>3&&hcp(south)<=9&&
(
  (shape(south,x6xx)&&hcp(south, hearts)>2)||shape(south,6xxx)&&hcp(south, spades)>2)
)
```

To get a Weak 2M or 2 suited opening

```
hcp(south)>4&&hcp(south)<=9&&
(
  ((shape(south,x6xx)&&hcp(south, hearts)>2)||shape(south,6xxx)&&hcp(south, spades)>2)||
  (shape(south, any 55xx)||shape(south, any 54xx)||shape(south, 44xx))
)
```

To get a Weak 2 opening with a takeout double and Lebensohl opposite double

```
(
  hcp(east)>5&&hcp(east)<=9&&
  (
    ((shape(east,xx6x)&&spades(east)<4&&hearts(east)<4)&&hcp(east,diamonds)>4&&shape(south,
4414+4504+5404+4405+4513+5413+3415+4315))||
    (shape(east,26xx)&&hcp(east,hearts)>4&&shape(south, 4144+5044+4054+4045+4153+4135+5143+5134))||
    (shape(east,62xx)&&hcp(east,spades)>4&&shape(south, 1444+0544+0454+0445+1453+1435+1543+1534))
  )&&
  hcp(south)>13&&
  shape(north, any 5xxx)
)
```

To get a Weak 2 opening with a Leaping Michaels overall

```
(
  hcp(east)>5&&hcp(east)<=9&&
  (
    ((shape(east,xx6x)&&spades(east)<4&&hearts(east)<4)&&hcp(east,diamonds)>4&&shape(south,
55xx+5xx5+x5x5+65xx+56xx+5xx6+6xx5+x5x6+x6x5))||
    (shape(east,26xx)&&hcp(east,hearts)>4&&shape(south, 5x5x+5xx5+xx55+6x5x+5x6x+5xx6+6xx5+xx56+xx65))||
    (shape(east,62xx)&&hcp(east,spades)>4&&shape(south, x55x+x5x5+xx55+x65x+x56x+x5x6+x6x5+xx56+xx65))
  )&&
  hcp(south)>17
)
```

To get a Weak 3 opening with a takeout double

```
(
  hcp(east)>5&&hcp(east)<=9&&
  (
    ((shape(east,xxx7)&&spades(east)<4&&hearts(east)<4)&&hcp(east,clubs)>4&&shape(south,
4441+4540+5440+4450+4531+5431+3451+4351))||
    ((shape(east,xx7x)&&spades(east)<4&&hearts(east)<4)&&hcp(east,diamonds)>4&&shape(south,
4414+4504+5404+4405+4513+5413+3415+4315))||
    (shape(east,27xx)&&hcp(east,hearts)>4&&shape(south, 4144+5044+4054+4045+4153+4135+5143+5134))||
    (shape(east,72xx)&&hcp(east,spades)>4&&shape(south, 1444+0544+0454+0445+1453+1435+1543+1534))
  )&&
  hcp(south)>13
)
```

To get a Weak 3 opening with a Non-Leaping Michaels overall

```
(
  hcp(east)>5&&hcp(east)<=9&&
```

```
(
  ((shape(east,xxx7)&&spades(east)<4&&hearts(east)<4)&&hcp(east,clubs)>4&&shape(south,
55xx+5x5x+x55x+65xx+56xx+5x6x+6x5x+x56x+x65x))||
  ((shape(east,xx7x)&&spades(east)<4&&hearts(east)<4)&&hcp(east,diamonds)>4&&shape(south,
55xx+5xx5+x5x5+65xx+56xx+5xx6+6xx5+x5x6+x6x5))||
  (shape(east,27xx)&&hcp(east,hearts)>4&&shape(south, 5x5x+5xx5+xx55+6x5x+5x6x+5xx6+6xx5+xx56+xx65))||
  (shape(east,72xx)&&hcp(east,spades)>4&&shape(south, x55x+x5x5+xx55+x65x+x56x+x5x6+x6x5+xx56+xx65))
)&&
hcp(south)>17
)
```

DOUBLES

To get the robots to open and we have either a takeout double or overcalling hand

```
(
  ( (diamonds(west)>=5&&diamonds(north)<3)||
    (hearts(west)>=5&&hearts(north)<3)||
    (spades(west)>=5&&spades(north)<3)
  )&&
  hcp(west)>=12&&hcp(west)<=19&&
  !(shape(west, any 5332)&&hcp(west)>=15&&hcp(west)<=17)&&
  hcp(north)>11
)||
(
  (diamonds(west)>=5||hearts(west)>=5||spades(west)>=5)&&
  hcp(west)>=12&&hcp(west)<=19&&
  !(shape(west, any 5332)&&hcp(west)>=15&&hcp(west)<=17)&&
  hcp(north)>15
)
```

To get an opening bid by us and intervention or opening by them and we have an overcall or TO double

NB – setup dealer as N and W and choose options to ‘randomly rotate’

```
(
  ( (diamonds(west)>=5&&diamonds(north)<3)||
    (hearts(west)>=5&&hearts(north)<3)||
    (spades(west)>=5&&spades(north)<3)
  )&&
  hcp(west)>=12&&hcp(west)<=19&&
  !(shape(west, any 5332)&&hcp(west)>=15&&hcp(west)<=17)&&
  hcp(north)>11
)||
(
  (diamonds(west)>=5||hearts(west)>=5||spades(west)>=5)&&
  hcp(west)>=12&&hcp(west)<=19&&
  !(shape(west, any 5332)&&hcp(west)>=15&&hcp(west)<=17)&&
  hcp(north)>15
)||
(hcp(north)>11&&hcp(east)>11&&hcp(south)>5)
```

To get the robots to open 1NT and we have a penalty X

```
(
  shape(east, any 5332 + any 4432 + any 4333)&&hcp(east)>=15&&hcp(east)<=17
)&&hcp(south)>15
```

To get the robots to open 1m when they have a weak 1NT and we have a penalty X of the weak NT

```
(
  shape(east, 3325 + 3235 + 2335 + 3352 + 2353 + 3253 + any 4432 + any 4333)&&hcp(east)>=12&&hcp(east)<=14
)&&hcp(south)>15
```

To get BBO to deal specific cards and force an auction

```
predeal north SA83, HAT, DQJ9754, C74
predeal west SQT742, HKQJ6, DT, CQJ6
west1s = hcp(west)>10 && spades(west)>= 5
north3d = hcp(north)>6 && diamonds(north)>= 6
condition west1s && north3d
```

It would be nice if BBO forced West to open 1S and North overcall 3D, but the keywords do not refer to the bids, only to

force the distributions set by the keyword criteria. In the above example therefore the west1s and north3d have no use since they have already been assigned their cards.

So, to get North to overcall 3D you have to sit in that seat and do it, then let the robots take the other polarities.

Other specific card holding conditions:-

aces(south) == 1 && kings(south) == 1 (also able to specify queens, jacks and tens)
clubs(south)==7 and hascard(south,AC) and hascard(south,KC) and hascard(south,QC)

You can get GIB to analyse a hand by using this as input to the Dealer Source:-

predeal north S63, HK52, DQJ7, CAK543
predeal south SA, HA874, DK53, CQT762
predeal east SJT9852, HJ63, DT2, CJ9

Also, use BBO to deal 1 hand and set criteria for the others :

predeal south SQ964, HA4, DAKT97, C75
shape(north,
2335+3235+3325)&&hcp(north)<12&&hcp(west)<4&&hearts(west)<4&&hcp(east)>11&&hcp(east)<17&&shape(east,
x5xx)

Lebensohl Auction – set West to deal and ‘Robots on’ to get a weak 2 opening by West or 1NT intervention from East

```
(
  hcp(west)>5&&hcp(west)<=9&&
  (
    ((shape(west,xx6x)&&spades(west)<4&&hearts(west)<4&&hcp(west,diamonds)>4&&shape(north,
4414+4504+5404+4405+4513+5413+3415+4315+2425+4225))||
    (shape(west,x6xx) &&spades(west)<4&&hcp(west,hearts)>4&&shape(north,
4144+5044+4054+4045+4153+4135+5143+5134+4225+4252))||
    (shape(west,6xxx) &&hearts(west)<4&&hcp(west,spades)>4&&shape(north,
1444+0544+0454+0445+1453+1435+1543+1534+2425+2452+2245+2254))
  )&&
  hcp(north)>13
)||
(
  shape(north, any 5332 + any 4432 + any 4333)&&
  hcp(north)>=15&&hcp(north)<=17&&
  hcp(east)>12&&shape(east, any 6xxx + any 5440 + any 55xx)&&
  (hcp(north)+hcp(south)>=21)
)||
```

West opens 1S, North doubles and East raises to 2S

```
(
  shape(west, 5xxx + 6xxx)&&hcp(west)>12&&hcp(west)<15&&
  hcp(north)>12&&
  hcp(east)>3&&hcp(east)<7&&shape(east, 3xxx)&&
  (spades(north)<2&&hcp(north)>12&&hearts(north)<6&&diamonds(north)<6&&clubs(north)<6)&&
  hcp(south)>5
)
```

Thailand practice – pre Northern League

Set West to deal and 'Robots on' to get a weak 2 opening by West or 1NT intervention from East

```
(  
#START – Lebensohl auctions
```

```
(  
  hcp(west)>5&&hcp(west)<=9&&  
  (  
    ((shape(west,xx6x)&&spades(west)<4&&hearts(west)<4)&&hcp(west,diamonds)>4&&shape(north,  
4414+4504+5404+4405+4513+5413+3415+4315+2425+4225))||  
    (shape(west,x6xx) &&spades(west)<4&&hcp(west,hearts)>4&&shape(north,  
4144+5044+4054+4045+4153+4135+5143+5134+4225+4252))||  
    (shape(west,6xxx) &&hearts(west)<4&&hcp(west,spades)>4&&shape(north,  
1444+0544+0454+0445+1453+1435+1543+1534+2425+2452+2245+2254))  
  )&&  
  hcp(north)>13  
)||  
(  
  shape(north, any 5332 + any 4432 + any 4333)&&  
  hcp(north)>=15&&hcp(north)<=17&&  
  hcp(east)>12&&shape(east, any 6xxx + any 5440 + any 55xx)&&  
  (hcp(north)+hcp(south)>=21)  
)
```

```
#END – Lebensohl auctions
```

```
)||
```

```
(  
#START – 2D auctions where responder has a good hand
```

```
hcp(north)<10&& hcp(north)>5&&  
shape(north, 5x4x + 5xx4 + x54x + x5x4 + 5x5x + 5xx5 + x55x + x5x5)&&  
hcp(south)>14
```

```
#END – 2D auctions where responder has a good hand
```

```
)||
```

```
(  
#START - 1NT auctions with both majors or distributional 2 suiters or slam tries with minor suits
```

```
shape(north, any 5332 + any 4432 + any 4333)&&hcp(north)>=15&&hcp(north)<=17&&  
(shape(south, any 55xx + any 64xx + 44xx + 54xx + 45xx + 64xx + 46xx + 6xxx + x6xx)&&hcp(south)>=8||  
shape(south, xxx6 + xx6x + xx54 + xx45 + any 4432 + any 4333 + xx5x + xxx5)&&hcp(south)>=14)
```

```
#END - 1NT auctions with both majors
```

```
)||
```

```
(  
#START – inverted minor auctions
```

```
# CLUBS
```

```
(
```

```
  # South
```

```
  (
```

```
    # Give South 5+ clubs and 10+ HCP which is not a balanced NT response
```

```
    (clubs(south)>=5&&diamonds(south)<=3&&hearts(south)<=3&&spades(south)<=3&&hcp(south)>=10&&!shape(south, any 4333 + any 4432)
```

```
    )
```

```
    ||
```

```
    # or a balanced hand with >15 HCP (avoiding 1/2/3NT responses)
```

```
    (
```

```
    shape(south, 2335 + 3235 + 3325 + 3334 + 2344 + 3244)&&hcp(south)>15
```

```
    )
```

```
  )
```

```
&&
```

```
# North
```

```
(
```

```
# North may have a 12-14 or 18-19 NT hand
```

```
(  
clubs(north)>=2&&diamonds(north)<=3&&hearts(north)<=4&&spades(north)<=4&&  
((hcp(north)>=12&&hcp(north)<=14)||((hcp(north)>=18&&hcp(north)<=19))
```

```
)
```

```
||
```

```
# or any unbalanced hand with longer clubs than the other suit
```

```
(  
clubs(north)>=5&&clubs(north)>diamonds(north)&&clubs(north)>hearts(north)&&  
clubs(north)>spades(north)&&!shape(north, any 5332)&&hcp(north)>=12
```

```
)
```

```
)
```

```
)
```

```
||
```

```
# DIAMONDS
```

```
(
```

```
# South
```

```
(
```

```
# South should have 4+ diamonds and 10+ HCP which is not a balanced NT response
```

```
(  
diamonds(south)>=4&&hearts(south)<=3&&spades(south)<=3&&clubs(south)<=4&&hcp(south)>=10&&!shape(s  
outh, any 4333 + any 4432)
```

```
)
```

```
||
```

```
# or any unbalanced hand with longer diamonds than the other suit
```

```
(  
diamonds(south)>=5&&diamonds(south)>hearts(south)&&diamonds(south)>spades(south)&&diamonds(south)>  
clubs(south)&&hcp(south)>=12
```

```
)
```

```
)&&
```

```
# North
```

```
(
```

```
# North should either have a 12-14 or 18-19 NT hand
```

```
(  
diamonds(north)>=4&&clubs(north)<=3&&hearts(north)<=4&&spades(north)<=4&&((hcp(north)>=12&&hcp(north  
)<=14)||((hcp(north)>=18&&hcp(north)<=19))
```

```
)
```

```
||
```

```
# or any unbalanced hand with longer diamonds than the other suit
```

```
(  
diamonds(north)>=5&&diamonds(north)>clubs(north)&&diamonds(north)>hearts(north)&&  
diamonds(north)>spades(north)&&!shape(north, any 5332)&&hcp(north)>=12
```

```
)
```

```
)
```

```
)
```

```
#END – inverted minor auctions
```

```
)
```

Practice with Neil 11th September

Strong NT with a 5 card major and responder has a balanced 8+ HCP

(shape(north, 5332 + 5323 + 5233 + 3532 + 3523 + 2533)&&

hcp(north)>=15&&hcp(north)<=17&&

shape(south, any 4333 + any 4432) &&hcp(south)>7

)||

Strong NT and responder holds a GF+ hand with a 5332 shape

(shape(north, any 5332 + any 4333 + any 4432)&&

hcp(north)>=15&&hcp(north)<=17&&

shape(south, any 5332) &&hcp(south)>14

)||

Lucas 2 opening and responder has an opening hand

(hcp(north)<10&& hcp(north)>4&&

shape(north, 55xx + 54xx + 45xx + 5x4x + 5xx4 + x54x + x5x4 + 5x5x + 5xx5 + x55x + x5x5)&&

hcp(south)>11

)

Investigation with Neil into 1M openings with responder holding 3 card support with invitational values – comparison between responding 1NT and 3C Bergen – September 2016.

hcp(north)>11&&hcp(north)<15&&

hcp(south)>9&&hcp(south)<12&&

(

(shape(north, 5332 + 5323 + 5233)&&shape(south, 3xxx))||

(shape(north, 3532 + 3523 + 2533)&&shape(south, 33xx + 23xx + 13xx))

)

hcp(north)>11&&hcp(north)<15&&

hcp(south)>9&&hcp(south)<12&&

(

(shape(north, 5332 + 5323 + 5233)&&shape(south, x6xx + xx6x + xxx6))||

(shape(north, 3532 + 3523 + 2533)&&shape(south, 1x6x + 1xx6 + 2x6x + 2xx6 + 3x6x + 3xx6))

)

To compare the effects of opening 1NT with a 5332 14 count:-

shape(north, any 5332 + any 4333 + any 4432)&&hcp(north)==14

John Roberts – April 2017 : To get a Lucas opening OR 1M with a simple raise and 'trial bid'

(hcp(north)<12&&hcp(north)>7&&

shape(north, 55xx + 54xx + 45xx + 5x4x + 5xx4 + x54x + x5x4 + 5x5x + 5xx5 + x55x + x5x5)

)||

(

((hearts(north)>=5&&hearts(south)==3)||((spades(north)>=5&&spades(south)==3))&&hcp(north)>=14&&hcp(north)<=17&&

!(shape(north, any 5332)&&hcp(north)>=15&&hcp(north)<=17)&&hcp(south)>4&&hcp(south)<10

)

John Roberts – April 2017 : To get an opponent 1M opening and takeout X with/without 4 other M

```
(
(shape(east, x5xx)&&
 hearts(south)<2&&
 spades(south)<6&&spades(south)>2&&
 diamonds(south)<6&&diamonds(south)>2&&
 clubs(south)<6&&clubs(south)>2
)||
(shape(east, 5xxx)&&
 spades(south)<2&&
 hearts(south)<6&&hearts(south)>2&&
 diamonds(south)<6&&diamonds(south)>2&&
 clubs(south)<6&&clubs(south)>2
)
)&&
(
(hcp(east)>=12&&hcp(east)<=14)||
(hcp(east)>=18&&hcp(east)<=19)
)&&
hcp(south)>12
```

As above, but restrict South's distribution to 5431 or 5440 or 4441

```
(
(shape(east, x5xx)&&
 shape(south, 5044+4054+4045+4144+5143+5134+3154+3145+4135+4153)
)||
(shape(east, 5xxx)&&
 shape(south, 0544+0454+0445+1444+1543+1534+1354+1345+1435+1453)
)
)&&
(
(hcp(east)>=12&&hcp(east)<=14)||
(hcp(east)>=18&&hcp(east)<=19)
)&&
hcp(south)>12
```

As above, but restrict South's distribution to 5431 with 3 cards in the other major

```
(
(shape(east, x5xx)&&
 shape(south, 3154+3145)
)||
(shape(east, 5xxx)&&
 shape(south, 1354+1345)
)
)&&
(
(hcp(east)>=12&&hcp(east)<=14)||
(hcp(east)>=18&&hcp(east)<=19)
)&&
hcp(south)>12
```