

Score Calculation Foundations

Lecture

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Agenda

- Introduction
- Teams
- Pairs
- Weighted scores in Teams
- Weighted scores in Pairs
- Split Scores in Teams
- Split Scores in Pairs
- What else?

Why you should know how it!

- Computers!
 - Do they calculate scores correctly?
 - In my opinion, only some of them...
 - Issue of representation of floating point real numbers
 - Vulgar fractions!
- Why TD?
 - You are responsible for the results
 - You should understand what happens
 - You should explain to the player why got such a score
 - You should avoid a mistake
 - Weighted adjusted score that worsens a score for the non-offending side
 - Consequences of 60/40

Introduction

The Law

- Law 78C – Total points scoring
- Law 78B – International Matchpoint Scoring
- Law 78D – Victory points
 - According to the Conditions of Contest
- Law 78A – Matchpoint Scoring

Teams

Match

FRANCE GREEN				VS				VINCIGUERRA			
Open Room				30 - 34 IMP				Closed Room			
ROMBAUT Leo								SOULET Philippe			
MULTON Franck	N	E	BOMPIS Marc					MAUBERQUEZ Eric	N	E	LEVY Alain
	W	S							W	S	
ROMBAUT Jerome								VINCIGUERRA Herve			

Board	Open Room				Closed Room				FRANCE GREEN	VINCIGUERRA			
	Contr	Decl	Lead	Tricks	NS	EW	Contr	Decl			Lead	Tricks	NS
1	5*	W		10	50		5*	E	♠A	10	50		
2	1NT	E		9	150		1NT	E	♠T	8	120		1
3	3NT	N		8	50		3NT	S	♥Q	8	50		
4	3NT	W		8	100		3NT	W	♠K	8	100		
5	4*	S		8	200		3*	S	♠A	10	170		9
6	2*	W		6	200		1NT	E	♠J	8	120	8	
7	3NT	E		8	100		3NT	E	♠J	10	630	12	
8	3NT	W		9	400		3NT	W	♠5	10	430	1	
9	5*x	N		9	300		5*x	N	♥A	9	300		
10	1NT	W		6	100		3NT	S	♠A	8	100	5	
11	3NT	W		9	400		4*	W	♠3	9	50		10
12	6*	E		13	1010		5*	E	♠A	13	440		11
13	3*x	N		8	200		3*	W	♠K	9	110		3
14	2*	W		7	50		2*	E	♠7	8	110	4	

Imps

Difference in points	IMPs	Difference in points	IMPs	Difference in points	IMPs
0-10	0	370-420	9	1500-1740	17
20-40	1	430-490	10	1750-1990	18
50-80	2	500-590	11	2000-2240	19
90-120	3	600-740	12	2250-2490	20
130-160	4	750-890	13	2500-2990	21
170-210	5	900-1090	14	3000-3490	22
220-260	6	1100-1290	15	3500-3990	23
270-310	7	1300-1490	16	4000+	24
320-360	8				

Victory points

8-board continuous scale				16-board continuous scale				24-board continuous scale													
0	10.00	20	16.46	40	19.74	0	10.00	20	15.00	40	18.09	60	20.00	0	10.00	20	14.26	40	17.13	60	19.06
1	10.44	21	16.68	41	19.85	1	10.31	21	15.19	41	18.21	1	10.25	21	14.43	41	17.25	61	19.14		
2	10.86	22	16.90	42	19.95	2	10.61	22	15.38	42	18.33	2	10.50	22	14.60	42	17.36	62	19.22		
3	11.27	23	17.11	43	20.00	3	10.91	23	15.56	43	18.44	3	10.75	23	14.76	43	17.47	63	19.30		
4	11.67	24	17.31			4	11.20	24	15.74	44	18.55	4	10.99	24	14.92	44	17.58	64	19.37		
5	12.05	25	17.50			5	11.48	25	15.92	45	18.66	5	11.23	25	15.08	45	17.69	65	19.44		
6	12.42	26	17.69			6	11.76	26	16.09	46	18.77	6	11.46	26	15.24	46	17.79	66	19.51		
7	12.77	27	17.87			7	12.03	27	16.26	47	18.87	7	11.68	27	15.39	47	17.89	67	19.58		
8	13.12	28	18.04			8	12.29	28	16.42	48	18.97	8	11.90	28	15.54	48	17.99	68	19.65		
9	13.45	29	18.21			9	12.55	29	16.58	49	19.07	9	12.12	29	15.69	49	18.09	69	19.72		
10	13.78	30	18.37			10	12.80	30	16.73	50	19.16	10	12.33	30	15.83	50	18.19	70	19.79		
11	14.09	31	18.53			11	13.04	31	16.88	51	19.25	11	12.54	31	15.97	51	18.29	71	19.85		
12	14.39	32	18.68			12	13.28	32	17.03	52	19.34	12	12.75	32	16.11	52	18.38	72	19.91		
13	14.68	33	18.83			13	13.52	33	17.17	53	19.43	13	12.95	33	16.25	53	18.47	73	19.97		
14	14.96	34	18.97			14	13.75	34	17.31	54	19.52	14	13.15	34	16.38	54	18.56	74	20.00		
15	15.23	35	19.11			15	13.97	35	17.45	55	19.61	15	13.34	35	16.51	55	18.65				
16	15.50	36	19.24			16	14.18	36	17.59	56	19.69	16	13.53	36	16.64	56	18.74				
17	15.75	37	19.37			17	14.39	37	17.72	57	19.77	17	13.72	37	16.77	57	18.82				
18	16.00	38	19.50			18	14.60	38	17.85	58	19.85	18	13.90	38	16.89	58	18.90				
19	16.23	39	19.62			19	14.80	39	17.97	59	19.93	19	14.08	39	17.01	59	18.98				

Pairs

Matchpoints

- Definition – Law 78A
 - Compare the score if other scores:
 - 2 mp for each score inferior to his
 - 1 mp for each score equal to his
 - 0 mp for each score superior to his
- Possible: instead of 2 and 1 use 1 and ½
- Not very practical if there are more scores

„In memory” calculations

Pairs		Score		MP	
NS	EW	NS	EW	NS	EW
16	1	620			
15	14	690			
6	11	660			
10	12		-100		
5	8	630			
7	3		-100		
9	2		-200		
13	4	630			

- Top: $2 \times (k-1)$
- Here $\rightarrow 2 \times (8-1) = 14$

„In memory” calculations

Pairs		Score		MP	
NS	EW	NS	EW	NS	EW
16	1	620			
15	14	690			
6	11	660			
10	12		-100		
5	8	630			
7	3		-100		
9	2		-200		
13	4	630			

- From definition – no! much better techniques

„In memory” calculations

Pairs		Score		MP	
NS	EW	NS	EW	NS	EW
16	1	620		6	
15	14	690		14	
6	11	660		12	
10	12		-100	3	
5	8	630		9	
7	3		-100	3	
9	2		-200	0	
13	4	630		9	

- Calculations for NS
- The worst 0, the next 2, and so on...
- Average for ties

„In memory” calculations

Pairs		Score		MP	
NS	EW	NS	EW	NS	EW
16	1	620		6	8
15	14	690		14	0
6	11	660		12	2
10	12		-100	3	11
5	8	630		9	5
7	3		-100	3	11
9	2		-200	0	14
13	4	630		9	5

- $EW + NS = \text{Top}$
- For each, calculate $14 - mp$

Frequency

Score		Count	MP	
NS	EW		NS	EW
690		1		
660		1		
630		2		
620		1		
	-100	2		
	-200	1		

- Count all scores and sort them

Match point calculation

Score		Count	MP		sum	eq
NS	EW		NS	EW		
690		1	14		8	-
660		1	12		7	-
630		2	9		6	1
620		1	6		4	-
	-100	2	3		3	1
	-200	1	0		1	-
					0	-

- From definition?
- Possible!

Match point calculation – a better method

Score		Count	MP	
NS	EW		NS	EW
		0	15	
690		1	14	
660		1	12	
630		2	9	
620		1	6	
	-100	2	3	
	-200	1	0	
		0	-1	

- Add a row in the bottom [0, -1], and an empty row on top
- Sum of 3 values
- In the top row we should get: top + 1 (control!)

Per cent

Score		Count	MP		%
NS	EW		NS	EW	
690		1	14		100,00%
660		1	12		85,71%
630		2	9		64,29%
620		1	6		42,86%
	-100	2	3		21,43%
	-200	1	0		0,00%

- The per cent score: $(mp/Top) \times 100\%$
 - 690 → 14 mp → 100%
 - 660 → 12 mp → $(12/14) \times 100\% \rightarrow 85,71\%$
 - 630 → 9 mp → $(9/14) \times 100\% \rightarrow 64,29\%$
 - ltd...

Example

- NS played 3NT -2
- Misinformation
- They would have played 4♠, either 10 or 9 tricks
- Score: 2/5 -100, 3/5 +620
- We weightimps, not total points

Weighted scores in Teams

Weighted scores in Teams

- Open Room: 60%+620, 40%–100
- Closed Room: +300

OR	CR	Diff	Weight	IMP	Score
+620	+300	+320	3/5	+8	+4.8
-100	+300	-400	2/5	-9	-3.6
Total					+1.2

- Don't round the score as long as you don't have to
- Victory Points
 - Before round a final result in imps
 - Then look to convert to VP
- Better ways to do it, but...

Weighted scores in Pairs

Weighted scores in Pairs

- 60%+620, 40%–100
- All scores in a board:

Pairs		Score		MP	
NS	EW	NS	EW	NS	EW
16	1		-100		
15	14	620			
6	11	620			
10	12		-100		
5	8		-200		
7	3	ARB	ARB		
9	2	620			
13	4	500			

Weighted scores in Pairs

- Don't weight total points!
- The old approach
 - Replace a score with average
 - Calculate matchpoints for all results (Neuberg formula)
 - Calculate outcome for the result – weight matchpoints for all scores
- And what if the score included in the weighted score does not occur in actual results?

Weighted scores in Pairs

- We have to weight „whole scoresheets”
- Scores: 7+1=8, Top: 14, Average: 7

Pairs		Score		MP	
NS	EW	NS	EW	NS	EW
16	1		-100		
15	14	620			
6	11	620			
10	12		-100		
5	8		-200		
7	3	ARB	ARB		
9	2	620			
13	4	500			

Weighted scores in Pairs

Pairs		60%				40%				MP	
NS	EW	Score		MP		Score		MP		NS	EW
NS	EW	NS	EW	NS	EW	NS	EW	NS	EW	NS	EW
16	1		-100	3			-100	4		3.4	10.6
15	14	620		11		620		12		11.4	2.6
6	11	620		11		620		12		11.4	2.6
10	12		-100	3			-100	4		3.4	10.6
5	8		-200	0			-200	0		0	14
7	3	620		11			-100	4		8.2	5.8
9	2	620		11		620		12		11.4	2.6
13	4	500		6		500		8		6.8	7.2

A better approach

- Make frequency

Score		Count	MP	
NS	EW		NS	EW
620		3		
500		1		
	-100	2		
	-200	1		

A better approach

- Add fractional frequency of the adjusted score:
- 60%+620, 40%–100

Score		Count	MP	
NS	EW		NS	EW
620		3.6		
500		1		
	-100	2.4		
	-200	1		

A better approach

- Calculate scores for frequency:
 - Additional row at the bottom
 - Test sum: $3.6+11.4 = 15$ – OK!

Score		Count	MP	
NS	EW		NS	EW
620		3.6	11.4	
500		1	6.8	
	-100	2.4	3.4	
	-200	1	0	
		0	-1	

- Weighted score: $0.6 \times 11.4 + 0.4 \times 3.4 = 8.2$ for NS
- All scores can be affected!

Split score in Teams

Split Score

- Results for both sides do not have to be the same
 - NS: 3NT by N -1, -100
 - EW: 4♠ by N =, +620 („+” for NS)
- We can combine weighted scores and split scores
- Examples:
 - $(-100)/(+600)$
 - $(+600)/(+630)$
 - $(60\%+620+40\%-100)/(+620)$
 - $(30\%+620+70\%-100)/(70\%+620+30\%-100)$

Split Score

- In a regular board
 - Teams: NS result in imps + EW result in imps = 0
 - Example NS got +5 imps, EW -5 imps
 - Pairs: NS result in mp + EW result in mp = Top
- For split score, by principle:
 - NS result in imps + EW result in imps < 0
 - Pairs: NS result in mp + EW result in mp < Top

Split score in Teams

- Open Room: $(-100)/(+620)$
- Closed Room: +300

OR	CR	Diff	IMPs
+620	+300	+320	+8
-100	+300	-400	-9

- The outcome of the board:
 - NS in Open Room: -9IMP
 - WE in Open Room: -8IMP
- Match result – calculated separately for each team:
 - Other boards: 23IMP-13IMP → Team A won 10IMP
 - Team A: -9IMP +10IMP = +1IMP
 - Team B: -8IMP -10IMP = -18IMP
 - Convert into VP: 10.25 – 6.10
 - Less than 20VP in total!

Split score in Pairs

Split score in Pairs

- Split score: $(-100)/(+620)$

Pairs		Score		MP	
NS	EW	NS	EW	NS	EW
16	1		-100		
15	14	620			
6	11	620			
10	12		-100		
5	8		-200		
7	3	ARB	ARB		
9	2	620			
13	4	500			

Split score in Pairs

- 2 results: For NS: -100, for EW: +620

Pairs		NS				WE				MP	
		Score		MP		Score		MP			
NS	EW	NS	EW	NS	EW	NS	EW	NS	EW	NS	EW
16	1		-100	4	10		-100	3	11	4	11
15	14	620		12	2	620		11	3	12	3
6	11	620		12	2	620		11	3	12	3
10	12		-100	4	10		-100	3	11	4	11
5	8		-200	0	14		-200	0	14	0	14
7	3		-100	4	10	620		11	3	4	3
9	2	620		12	2	620		11	3	12	3
13	4	500		8	6	500		6	8	8	8

Split score in Pairs

- NS and EW scores in MP for results between, sums > Top
- Split score – NS and EW results sums < Top

Pairs		Score		MP	
NS	EW	NS	EW	NS	EW
16	1		-100	4	11
15	14	620		12	3
6	11	620		12	3
10	12		-100	4	11
5	8		-200	0	14
7	3	(-100)/+620		4	3
9	2	620		12	3
13	4	500		8	8

That's the beginning!

Not covered in this lecture

- BAM
- Cavendish
- Butler
- Results of a tournament
- Penalties
- Average, average+, average –
- Various numbers of result in boards
- Neuberg formula
- Consequent-Subsequent damage

Thank you...