

Correspondence from Ron Klinger

(I.) The new WBF VP scale

Under the new scale every Imp counts (very good), but the Imps vary in ever-decreasing fractions. For the 14-board scale used in the NEC Cup, Imps 1 and 2 were worth 0.33 VPs each, Imps 3 and 4 were worth 0.31 VPs each, Imp 5 = 0.30 VPs, Imps 6 and 7 = 0.29 VPs and so on. Unless you memorize the scale, you have no way of checking your VP score without consulting the relevant scale.

Another feature of the new scale is that it tilts the scores heavily in favour of small wins (making overtricks significantly more valuable). Under the former WBF scale, 0-2 Imps was a draw for 14-board or 16-board matches. On the new scale 2 Imps = 10.66 – 9.34 or a difference of 1.32 VPs compared to the draw previously. For 16-board matches, 3-7 Imps used to be 16-14 in VPs, a difference of 2 VPs. On the new scale 7 Imps = 12.16 – 7.84 VPs, a difference of 4.32 VPs, more than double the previous 2 VP difference.

It is very attractive to have every Imp count, but the scale could be greatly simplified and achieve virtually the same result with slightly less emphasis on small wins.

Suppose you want to cut the scale out at a maximum win of, say, 60 Imps (16-board to 20-board matches). The first 20 Imps could be scored at 0.25 VP each. Thus a 10 Imps win would be 12.5 – 7.5 (12.97 – 7.03 on the current scale) and a 20-Imp win would be 15.0 – 5.0 (15.26 – 4.74 on the current scale). It would also lessen the impact slightly for small wins: 2 Imps = 10.5 – 9.5 (vs 10.66 – 9.34), 7 Imps = 11.75 – 8.25 (vs 12.16 – 7.84).

Imps 21-40 could be at 0.20 VPs each. Thus a 30 Imps win would be 17.0 – 3.0 (17.04 – 2.96) and a 40 Imps win = 19.0 – 1.0 (18.41 – 1.59)

Imps 41-60 could be at 0.05 each.

OR a slightly more even gradation could be:

Imps 1-20 at 0.25 VPs each.	10 Imps win = 12.5 – 7.5; 20 Imps win = 15-5
Imps 21-40 at 0.15 VPs each.	30 Imps win = 16.5 – 3.5; 40 Imps win = 18-2
Imps 41-60 at 0.10 VPs each.	50 Imps win = 19.1; 60 Imps win = 20-0

If you wanted to cut out at 50 Imps for a maximum win (12-board – 15-board matches):

Imps 1-20 at 0.25 VPs each.	20 Imps win = 15-5
Imps 21-40 at 0.20 VPs each.	40 Imps win = 19-1
Imps 41-50 at 0.10 VPs each.	50 Imps win = 20-0

If you want to make 40 Imps a maximum win (8-11 board matches):

Imps 1-20 at 0.30 VPs each.	20 Imps win = 16-4
Imps 21-40 at 0.20 VPs each	30 Imps win = 18-2, 40 Imps win 20-0.

For 30 Imps as a maximum win: 3-7 board matches:

Imps 1-20 at 0.40 VPs each:	20-Imp win = 18-2
Imps 21-30 at 0.20 VPs each	30 Imp win = 20-0

For 1 or 2 board matches: 1 Imp = 1 VP up to a maximum of 20 VPs.

I am no mathematician, and those who produced the new WBF scales are, but it does seem attractive to make the WBF scales simple and comprehensible to the average player. The preceding suggestions achieve the aim of having every Imp count and skew the scale less heavily in favour of the small wins. It also makes the scales easier to follow and allows anyone to work out the VPs using simple arithmetic.

(2.) From a Bridge Theorist in Sydney (Michael Wilkinson)

Hi Ron,

I will respond to some of your points/questions below - incidentally the scale you're suggesting is effectively the scale used at the ANC for the Interstate teams.

Cheers, Michael Wilkinson

<Embedded responses to Ron's questions follow>

There are some questions I would like to pose regarding the new VP scale:

1. Why have we decided to add to the complexity of scoring by introducing a scale with two decimal places? How does the average bridge player make any sense of this approach? Almost all would consider it incomprehensible? Would we report a cricket match as one side being 7.43 wickets for 286.79 runs? Or a football match as 3.72 goals to 1.68? Or a rugby match as 33.55 to 12.31? Or a tennis match as 3.52 sets to 1.44?

It's difficult to come up with any vaguely sensible rebuttal to this.

2. Why is the first Imp in a match worth twice as much as the 22nd? Why is it more meritorious to win 10 matches by 5 Imps (118.5 VPs) than five matches by 10 Imps and 5 draws (117.15 VPs)?

To my mind there is something more meritorious about winning all your matches by a small margin than drawing some matches (or indeed losing them by a small margin) and thrashing some of the weaker teams - so the current WBF scale does to a small extent reduce the importance of bunny bashing. See below though - my suggested scale does a far better job of achieving this goal.

3. A slam on a finesse is a 50-50 bet. This is recognised in basic duplicate scoring (480 vs 980, 450 and -50, 500 in each case and 11 Imps in each case; 680 vs 1430 or 650 and -100, 750 in each case and 13 Imps in each case). Under the new VP scale the strategy for a team trailing, by 20, 30, 40 or 50 Imps is to bid all slams on a finesse, since the reward for making exceeds the loss for losing. Similarly, the strategy for a team ahead by the same margins is not to bid a slam on a finesse; the potential loss is greater than the potential gain. The new scoring scale thus impacts on the mathematics of the game. To a lesser extent, the same applies to bidding or not bidding games on a finesse.

It's difficult to come up with any vaguely sensible rebuttal to your underlying point. The scale I suggest does have an element of this problem - but its less clearcut than with the WBF scale. Incidentally this is my main objection to butler scoring - it distorts the basic odds for bidding decisions. Interestingly you are wrong though on your statement about the strategy for a team in the lead - knowing that their opponents will bid all slams on a finesse they should in fact also bid the slam on a finesse to flatten the board and retain their lead - **and now we are playing poker ...**

4. Why is the cut-off for a 16-board match deemed to be worth 3.75 Imps per board, but for a 10-board match, it is 4.8 Imps per board?

This one actually makes a lot of sense - there have been studies done which show that the variance atimps is proportional to the squareroot of the number of boards being played - so for a longer match the cutoff should indeed be lower in imp/board terms.

5. Why are we adopting a scale, incomprehensible to the public, when we can achieve the same (or perhaps better) by means of a straightforward and understandable scale, one where every Imp counts and every Imp is equal?

Attached are three files (Appendix A, B & C) which cover the qualifying rounds of the 2013 Bermuda Bowl, Venice Cup and D'Orsi Trophy. The left hand column contains the finishing order of the teams using the new WBF scale. The right-hand column has the total VPs for each team based on a VP scale of 100, where each side starts with 50 VPs. A tie is 50-50. Winners add their net Imps to 50, cut-off at 100. Losers deduct their Imps from 50, minimum 0.

You will see that the top eight places are exactly the same under both scales (with a slight shuffle) and the total finishing order of the 22 team is almost the same. When reporting the results under such a scale, it would be easy for the public to understand a 73-27 or 91-9 or 54-46 win. Given that the outcome of both scales is effectively the same in selecting the quarter-finalists, what benefits does the new VP scale provide?

(Incidentally, it would be prudent to check my maths!)

Incidentally there is a good reason for not capping the score for the losers - the reason you outlined above about it changing the bridge maths - once you are trailing by 50 imps there is no downside at all in taking a "swinging" action - you are getting 0 anyway. I for one would heartily approve of your scale so long as the negative cap was removed.

Although you (and I know Paul agrees with your points and he would probably disagree with me on unnecessary complexity grounds) would perhaps dislike the added complexity - I think a slightly better approach is;

1 imp = 1 VP for the first n imps (where n is dependent on the length of the match)
1 imp = 0.5 VPs for the next n imps
1 imp = 0.1 VPs for the next n imps for the winners, but with no cap on the losers' score.

In the case of a 16 board match n = 25 feels about right to me

6. Someone might care to conduct the same exercise for previous world championships by scoring the qualifying rounds under both the new WBF scale and the suggested 100 VP scale.

At some point I might rescore some events but not at 12.30 a.m.

My reply:

Tx, Michael.

I originally thought that a scale like yours would be eminently sensible (and it is certainly better than the WBF scale). The underlying question is whether the straight Imps to VP scale or the reducing scale will produce significantly different results. If the outcome for the number of qualifying spots is the same or

virtually the same, then there is no benefit in having decimal points whether they appear random, as for the WBF, or easy to calculate, as with your formula.

Regardless of the differences in theory, if the qualifying places are the same for each of the scoring methods, then there is no need for complexity.

I appreciate the rationale for no minimum cap, but almost everyone opposes negative scores. If a cap of 50 is reasonable for a 16-board match you can cap matches with fewer boards by still using the 0-50-100 scale, but capping it at 90 and 10 or 80 and 20, etc. I guess one could have a scale to start at 100 each team to a max of 200. Then you could cap the winners anywhere you like and if the losers go worse than -100 Imps, it would be kind to let them stop at 0.

(3.) Curiosities in the New WBF VP Scale

(i.) 16 teams, 15-match round-robin, Teams A-J all score net 50 Imps, but their VP total varies. Results of 12 teams and hypothetical results based on the 10-board VP scale:

Team A	Win 10 x 1 Imp 10-board scale VPs	Win 5 x 8-Imps 103.9	Net 50 Imps 64.15	VP Total on new scale 168.05
Team B	Win 10 x 2 Imps 10-board scale VPs	Win 5 x 6 Imps 107.7	Net 50 Imps 60.90	168.60
Team C	Win 10 x 5 Imps 10-board scale VPs	5 x 0 draw 118.5	Net 50 Imps 50.00	168.50
Team D	Win 10 x 6 Imps 10-board scale VPs	Lose 5 x -2 Imps 121.8	Net 50 Imps 46.15	167.95
Team E	Win 10 x 8 Imps 10-board scale VPs	Lose 5 x -6 Imps 128.3	Net 50 Imps 39.1	167.40
Team F	Win 10 x 10 Imps 10-board scale VPs	Lose 5 x -10 Imps 134.3	Net 50 Imps 32.85	167.15
Team G	Win 10 x 12 Imps 10-board scale VPs	Lose 5 x -14 Imps 140.0	Net 50 Imps 27.30	167.30
Team H	Win 10 x 15 Imps 10-board scale VPs	Lose 5 x -20 Imps 148.0	Net 50 Imps 20.15	168.15
Team I	Win 10 x 18 Imps 10-board scale VPs	Lose 5 x -26 Imps 155.2	Net 50 Imps 14.20	169.40
Team J	Win 10 x 20 Imps 10-board scale VPs	Lose 5 x -30 Imps 159.7	Net 50 Imps 10.80	170.50
Team K	Win 10 x 25 Imps 10-board scale VPs	Lose 5 x -40 Imps 169.7	Net 50 Imps 3.90	173.60
Team L	Win 10 x 29 Imps 10-board scale VPs	Lose 5 x -48 Imps 176.8	Net 50 Imps 0.00	176.80

Although all teams scored the same number of net Imps, the semi-finalists would be Teams L, K, J, I. It's not the number of Imps you score, but how you score them that counts.

Team X	Win 10 x 24 Imps 10-board scale VPs	Lose 5 x -40 Imps 167.8	Net 40 Imps 3.90	171.70
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Thus Team X, with net 40 Imps, finishes third, ahead of many teams that scored 50 Imps, but in different fashion.

(ii.) 16 teams, 15-match round-robin, Teams A-J all score net 50 Imps, but their VP total varies. Results of 12 teams and hypothetical results based on the 16-board VP scale:

Team A	Win 10 x 1 Imp 16-board scale VPs	Win 5 x 8-Imps 103.1	Net 50 Imps 61.45	VP Total on new scale 164.55
Team B	Win 10 x 2 Imps 16-board scale VPs	Win 5 x 6 Imps 106.1	Net 50 Imps 58.80	164.90
Team C	Win 10 x 5 Imps 16-board scale VPs	5 x 0 draw 114.8	Net 50 Imps 50.00	164.80
Team D	Win 10 x 6 Imps 16-board scale VPs	Lose 5 x -2 Imps 117.6	Net 50 Imps 46.95	164.55
Team E	Win 10 x 8 Imps 16-board scale VPs	Lose 5 x -6 Imps 122.9	Net 50 Imps 41.2	164.10
Team F	Win 10 x 10 Imps 16-board scale VPs	Lose 5 x -10 Imps 128.0	Net 50 Imps 36.00	164.00
Team G	Win 10 x 12 Imps 16-board scale VPs	Lose 5 x -14 Imps 132.8	Net 50 Imps 31.25	164.05
Team H	Win 10 x 15 Imps 16-board scale VPs	Lose 5 x -20 Imps 139.7	Net 50 Imps 25.00	164.70
Team I	Win 10 x 18 Imps 16-board scale VPs	Lose 5 x -26 Imps 146.0	Net 50 Imps 19.55	165.55
Team J	Win 10 x 20 Imps 16-board scale VPs	Lose 5 x -30 Imps 150.0	Net 50 Imps 16.35	166.35
Team K	Win 10 x 25 Imps 16-board scale VPs	Lose 5 x -40 Imps 159.2	Net 50 Imps 9.55	168.75
Team L	Win 10 x 35 Imps 16-board scale VPs	Lose 5 x -60 Imps 174.5	Net 50 Imps 0.00	174.50

Although all teams scored the same number of net Imps, the semi-finalists would again be Teams L, K, J, I. It's not the number of Imps you score, but how you score them that counts.

Team X	Win 10 x 24 Imps 16-board scale VPs	Lose 5 x -40 Imps 157.4	Net 40 Imps 9.50	166.90
Team Y	Win 10 x 23 Imps 16-board scale VPs	Lose 5 x -39 Imps 155.6	Net 40 Imps 10.15	165.70

Thus Team X, with net 40 Imps, again finishes third, ahead of many teams that scored 50 Imps, but in different fashion. Team Y, with net 35 Imps, comes fourth ahead of many with net 50 Imps.

Appendix A
2013 Bermuda Bowl Rankings
(actual and projected using a 0-100, 1 IMP-to-1 VP scale,
suitable for 16-board matches)

BERMUDA BOWL

Country	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	Total	PI
USA1	41	48	77	46	15	34	83	70	85	67	88	65	100	97	83	100	90	62	74	84	45	1454	1
Italy	88	51	67	61	55	59	81	100	89	33	62	64	80	52	92	60	52	65	48	94	43	1396	3
Monaco	60	52	84	32	58	69	96	78	90	47	38	85	45	82	57	57	39	100	100	86	47	1402	2
Poland	18	60	77	68	85	75	99	96	44	65	31	36	65	50	44	30	64	5	99	57	100	1268	4
Netherlands	58	73	82	90	48	76	16	69	15	45	69	44	89	92	87	11	76	35	68	58	53	1254	5
England	88	42	27	39	72	66	36	11	63	50	57	85	66	100	13	72	61	95	45	89	62	1239	6
China	36	75	55	22	69	14	90	58	96	51	65	35	55	52	56	28	95	73	100	42	57	1224	7
Canada	82	49	87	63	28	38	84	0	4	53	92	29	59	54	98	95	52	69	44	83	55	1218	8
USA2	19	49	23	78	11	25	51	80	100	88	39	56	41	18	60	67	61	95	55	76	100	1192	9
Indonesia	42	60	16	54	31	35	39	89	33	66	88	71	20	30	62	70	39	64	77	74	70	1130	10
Japan	100	44	38	73	100	62	58	42	79	34	61	93	34	75	45	89	48	8	26	14	0	1123	11
Germany	64	27	62	89	55	65	49	63	100	21	100	58	0	50	43	54	24	31	52	42	38	1087	12
Argentina	81	58	82	77	47	24	19	66	10	35	12	53	63	25	66	46	48	49	0	16	83	960	13
New Z'land	12	25	23	11	42	44	64	54	21	55	8	72	74	70	17	33	59	99	57	100	17	957	14
Brazil	59	40	56	62	89	52	53	34	11	79	35	15	26	0	38	83	43	92	32	17	33	949	15
S. Africa	40	40	73	79	24	84	42	31	0	49	12	28	35	48	40	20	55	51	56	6	67	880	16
Australia	0	51	45	38	76	56	61	37	87	16	38	47	11	3	8	43	36	5	92	11	100	861	17
India	12	73	18	23	0	16	10	22	67	84	43	77	34	46	42	40	57	38	43	43	0	788	18
Guadeloupe	72	41	13	10	53	48	17	46	0	55	43	42	66	48	55	80	5	0	1	26	0	721	19
Egypt	66	27	44	21	45	31	1	20	37	45	57	7	37	48	2	0	41	36	8	58	59	609	20
Ch. Taipei	34	59	18	27	45	41	47	30	56	12	62	15	54	8	58	5	45	27	0	0	30	673	21
Bahrain	28	56	33	37	52	86	4	4	13	50	0	23	46	52	34	17	10	1	23	24	41	634	22
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Appendix B
2013 Venice Cup Rankings
(actual and projected using a 0-100, 1 IMP-to-1 VP scale,
suitable for 16-board matches)

VENICE CUP

Country	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	Total	P
Neth'lands	40	100	93	58	86	47	99	86	98	45	66	68	94	24	71	75	98	56	66	50	25	1445	1
USA1	56	52	66	78	51	86	69	51	32	43	66	100	66	53	72	36	70	56	71	70	75	1319	3
Poland	93	50	57	90	89	65	100	14	60	17	47	100	88	74	100	47	66	44	8	100	81	1390	2
China	100	0	41	65	41	90	75	57	75	83	88	60	34	54	54	57	42	65	78	49	72	1280	6
USA2	80	90	62	51	100	47	31	54	90	50	52	100	43	26	53	68	96	44	56	71	28	1292	4
Turkey	0	22	35	63	96	77	61	46	91	57	34	36	94	77	46	81	94	36	92	81	64	1283	5
France	100	76	38	23	70	48	100	51	68	55	75	31	52	46	90	53	40	75	63	50	62	1266	7
England	100	50	34	44	35	74	60	80	75	100	60	25	57	76	74	19	100	35	54	42	38	1232	8
Japan	20	23	65	42	49	60	49	49	69	82	74	0	48	100	72	70	58	76	55	58	55	1174	9
Sweden	82	45	43	49	30	57	1	55	25	100	26	75	99	62	60	63	30	64	83	36	56	1141	10
Argentina	18	78	59	77	27	40	40	41	10	74	58	0	6	53	77	94	90	71	100	64	19	1096	11
Indonesia	94	55	30	36	11	53	43	59	91	10	40	69	38	56	47	64	6	100	22	76	45	1045	12
Canada	0	77	70	90	65	53	54	46	9	68	42	33	45	100	23	37	34	25	29	50	83	1033	13
Brazil	38	48	39	86	4	52	51	20	67	50	53	67	72	47	29	43	66	14	55	24	44	969	15
Australia	62	50	78	64	76	35	46	49	71	26	12	45	52	38	26	32	60	54	34	19	74	1003	14
N. Zealand	60	86	61	14	59	26	57	45	29	60	34	64	48	0	23	60	78	74	44	0	17	939	16
Philipp's	18	50	7	22	99	12	25	50	25	90	66	0	12	23	77	40	10	86	45	50	58	865	17
S. Africa	44	14	61	35	73	88	49	63	40	32	75	32	6	28	10	30	0	0	17	29	26	752	18
Pakistan	7	87	39	37	14	10	0	50	9	0	48	55	55	72	28	6	34	24	46	43	53	717	19
Egypt	82	13	65	56	1	43	0	54	2	40	25	40	28	44	28	27	4	46	37	30	36	701	20
India	0	24	22	10	0	14	39	37	33	18	34	85	62	0	40	73	2	26	0	51	47	617	21
Guadel'pe	6	10	35	10	24	23	51	43	31	0	25	15	1	47	0	25	22	29	45	57	42	541	22
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Draft Response to Ron Klinger's Six Questions

Version 2; 14th October, 2013

The WBF Scoring Panel responds in this document to the six questions posed by Ron Klinger concerning the new continuous WBF: IMP-to-VP conversion scheme.

1. *Why have we decided to add to the complexity of scoring by introducing a scale with two decimal places? How does the average bridge player make any sense of this approach? Almost all would consider it incomprehensible? Would we report a cricket match as one side being 7.43 wickets for 286.79 runs? Or a football match as 3.72 goals to 1.68? Or a rugby match as 33.55 to 12.31? Or a tennis match as 3.52 sets to 1.44?*

It is somewhat disingenuous to select cricket, football, rugby and tennis to argue the inappropriateness of decimal scoring in sports. Such cherry-picking ignores the whole gamut of sports, many of them Olympic, which already use decimal scoring. Snow-boarding and skydiving contests employ scoring to one decimal place; running, swimming and high diving to two decimal places; gymnastics to three decimal places; motor racing to four decimal places. Babe Ruth's baseball batting is rated as 0.359. Mike Powell holds the world long jump record of 8.95 meters. Russia won the synchronized swimming with a score of 192.870. Tiger Woods is the world's number one golfer with a rating of 13.22. Even such sports as rifle shooting has now moved to introduce decimal target scores. And this is only the tip of the iceberg. The sporting public are quite used to decimal scoring and the bridge playing public will get used to the idea as well. When an Olympic gymnast scores 15.933 for their apparatus, the public have little comprehension of how that score was obtained, but they know that if another gymnast scores 16.237, the second competitor has performed better. In the modern world, Sport Scientists are playing an ever increasing role in training methods, tactics, and scoring methods. The trend towards greater complexity is due to improved understanding of comparative performances and techniques to measure such performances.

In the case of bridge, it has long been recognized that there were anomalies in the old WBF Victory Point tables. Further, the cusp problem, where some IMPs are worth nothing and one extra IMP could lead to a full extra VP was generally viewed by the players as a major irritant. The new scales solve both problems simultaneously. They ensure that each IMP gained in a

match, earns a fraction of a VP which is no greater than previously earned VP's. Thus every IMP counts and the cusp problem is removed altogether. To achieve these goals, it is necessary (with a 0 to 20 VP scale) to record VP's to at least two decimal places. Integer and even one decimal VP scores cannot do the job.

2. *Why is the first IMP in a match worth twice as much as the 22nd? Why is it more meritorious to win 10 matches by 5 IMPs than 5 matches by 10 IMPs and 5 draws?*

The Scoring Panel has taken the reasonable view that winning a match, by whatever margin, should be rewarded with a higher VP score. This was not the case for the old WBF scales where a draw could be awarded even if there was a 3 or 4 IMP difference. In knock-out matches a one IMP win might decide the winner of the whole tournament and even select a national team, as in fact was the case for the Australian Open Team for the past two years. The new scale recognizes the importance of the first IMP gained and commensurately awards less VP's for each further IMP attained in a match. No-one would seriously argue that the extra IMP gained when a team is ahead by 30 IMPs, should be worth the same as the one IMP that wins the match. For the same reason, winning ten matches by X IMPs should be worth more than winning five matches by $2X$ IMPs (and drawing the rest). Which scoring method does not reward a win compared to a draw?

3. *A slam on a finesse is a 50-50 bet. This is recognized in basic duplicate scoring (480 vs 980; 450 vs -50; 500 difference in each case and 11 IMPs in each case. Under the new VP scale the strategy for a team trailing by 20, 30, 40 or 50 IMPs is to bid all slams on a finesse, since the reward for making exceeds the loss for losing. Similarly, the strategy for a team ahead by the same margins is not to bid the slam on a finesse; the potential loss is greater than the potential gain. The new scoring scale thus impacts on the mathematics of the game. To a lesser extent, the same applies to bidding games on a finesse.*

There is nothing new in a bidding strategy that adopts an odds against action when down a significant margin in a match. The new WBF scale does indeed impact on the odds for a given tactical action dependent on the current IMP margin. For the case of the 11 IMP slam swing above, when both teams employ an optimal game-theoretic strategy (ie. they both bid the slam half the time) the expected VP gain for the team behind is posi-

tive, while for the team ahead it is negative. The maximum difference is less than 0.25 VPs on the new scale, so such considerations should have little impact. Incidentally, even on the old scale there would be similar tactics in play, with variable differences in VPs.

4. *Why is the cut-off for a 16 board match deemed to be worth 3.75 IMPs per board, while for a 10 board match it is worth 4.8 IMPS per board?*

Consider a long 96 board match (as is played in the Bermuda Bowl final and other major events). A team that wins such a match by 144 IMPs say would rightly be regarded as having trounced its opponents. Indeed, down by 120 IMPs with 16 boards to play, the opponents would likely concede the match. Now consider a four board play-off where one team wins by 6 IMPs. No-one would consider this to be a big win, because it might have been gained on a single lucky deal. Yet both results average 1.5 IMPs per board. Clearly a blitz win should not be based on a constant number of IMPs per board, but rather: the more boards in play, the lower the number of IMPs per board for a blitz. The Scoring Panel defines the blitz win as roughly two standard deviations above the expected mean for two equally matched teams. About 96% of all results will fall within two standard deviations. Based on a large data set, the standard deviation was found to be about 7.5 IMPs per board. Statistical theory then predicts that two standard deviations for N boards will be $15\sqrt{N}$ IMPs and the average IMPs per board for a blitz will then be $15/\sqrt{N}$. This formula yields the following results:

<i>No. Boards</i>	<i>N</i>	<i>Blitz Imps/Brd</i>
4		7.50
10		4.74
16		3.75
96		1.53

5. *Why are we adopting a scale, incomprehensible to the public, when we can achieve the same (or perhaps better) by means of a straightforward and understandable scale, one where every IMP counts and every IMP is equal? Attached are three files which cover the qualifying rounds of the 2013 Bermuda Bowl, Venice Cup and D'Orsi Trophy. The finishing order of the teams using the new WBF scale. The right hand column has the total VPs for each team based on a VP scale of 100, where each side starts with 50 VPs. Winners add their nett IMPs to 50, cut-off at 100. Losers deduct their IMPs*

from 50, minimum 0.

You will see that the top eight places are exactly the same under both scales (with a slight shuffle) and the total finishing order of the 22 teams is almost the same. When reporting the results under such a scale, it would be easy for the public to understand a 73 – 27 or 91 – 9 or 54 – 46 win. Given that the outcome of both scales is effectively the same in selecting the quarter-finalists, what benefits does the new VP scale provide?

There are two reasons that the suggested 100 VP scale above should be rejected. First, it makes no allowance for the number of boards in play and as we saw in our reply to Q4. above, this is an important element in any IMP to VP conversion. How many scores of 100–0 would you see in a 10 board match requiring an average of 10 IMPs per board? Correcting this anomaly would mean having the highly undesirable feature of a different blitz VP for each match with a different board quota. Secondly the proposed linear scale implies each IMP up to the maximum is worth the same increment in VP's. We have explained in our response to Q2. why this is also undesirable. Why would the public think that two scores that add up to 100 is comprehensible, but two scores that add up to 20 are not? The observation that the proposed 100 VP scale leads to a different order of the outcomes, no matter how small, in the 2013 World Championships is testimony that the two scales are not equivalent. Differences in the qualifying finishing order can lead to profoundly different outcomes, such as the composition of the teams in the the final. Simplicity, while perhaps desirable in certain circles, is however no substitute for a system based on sound bridge philosophy, statistical analysis and mathematical principles.

6. *Someone might care to conduct the same exercise for previous World Championships by scoring the qualifying rounds under both the new WBF scale and the suggested 100 VP scale.*

The WBF Scoring Panel are currently conducting statistical analyses of past World Championships with a view to perhaps fine tuning some of the parameters of the new WBF scale. For the reasons stated above, it is unlikely that the WBF would adopt a scale on the basis suggested by Ron Klinger.

Appendix D - 2012 WBF VP SCALE

Number of Boards

VPs	8	10	12	14	16	20	24	28	32	36	40	48
15-15	0-1	0-1	0-1	0-2	0-2	0-2	0-3	0-3	0-3	0-3	0-3	0-4
16-14	2-5	2-6	2-6	3-7	3-7	3-8	4-9	4-10	4-10	4-11	4-11	5-12
17-13	6-8	7-9	7-9	8-10	8-11	9-12	10-14	11-15	11-16	12-17	12-18	13-20
18-12	9-11	10-12	10-12	11-14	12-15	13-16	15-19	16-20	17-22	18-23	19-25	21-28
19-11	12-14	13-15	13-16	15-18	16-19	17-21	20-24	21-25	23-28	24-29	26-32	29-36
20-10	15-17	16-18	17-20	19-22	20-23	22-26	25-29	26-31	29-34	30-36	33-39	37-44
21-9	18-20	19-21	21-24	23-26	24-27	27-31	30-34	32-37	35-40	37-43	40-46	45-52
22-8	21-23	22-25	25-28	27-30	28-31	32-36	35-39	38-43	41-46	44-50	47-53	53-60
23-7	24-26	26-29	29-32	31-34	32-36	37-41	40-45	44-49	47-52	51-57	54-60	61-68
24-6	27-29	30-33	33-36	35-38	37-41	42-47	46-51	50-55	53-58	58-64	61-68	69-76
25-5	30-33	34-37	37-40	39-43	42-46	48-53	52-57	56-61	59-65	65-71	69-76	77-84
25-4	34-37	38-41	41-45	44-48	47-52	54-59	58-64	65-68	66-73	72-79	77-84	85-93
25-3	38-41	42-45	46-50	49-54	53-58	60-65	65-71	69-76	74-82	80-88	85-93	94-102
25-2	42-45	46-50	51-55	55-60	59-64	66-72	72-79	77-85	83-91	89-97	94-102	103-112
25-1	46-50	51-55	56-61	61-66	65-71	73-79	80-87	86-94	92-100	98-106	103-112	113-123
25-0	51+	56+	62+	67+	72+	80+	88+	95+	101+	107+	113+	124+



Appendix E - WBF Continuous VP Scale - 2013

This scale will be used in WBF Championships and should be used for major team Tournaments

IMPS	No of Boards									
	6	7	8	9	10	12	14	16	20	32
0	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
1	10.50	10.47	10.44	10.41	10.39	10.36	10.33	10.31	10.28	10.22
2	10.99	10.92	10.86	10.81	10.77	10.71	10.66	10.61	10.55	10.44
3	11.46	11.35	11.27	11.20	11.14	11.05	10.97	10.91	10.82	10.65
4	11.90	11.77	11.67	11.58	11.50	11.38	11.28	11.20	11.08	10.86
5	12.33	12.18	12.05	11.94	11.85	11.70	11.58	11.48	11.34	11.07
6	12.75	12.57	12.42	12.29	12.18	12.01	11.87	11.76	11.59	11.27
7	13.15	12.94	12.77	12.63	12.51	12.31	12.16	12.03	11.83	11.47
8	13.53	13.31	13.12	12.96	12.83	12.61	12.44	12.29	12.07	11.67
9	13.90	13.65	13.45	13.28	13.14	12.90	12.71	12.55	12.30	11.86
10	14.25	13.99	13.78	13.59	13.43	13.18	12.97	12.80	12.53	12.05
11	14.59	14.32	14.09	13.89	13.72	13.45	13.23	13.04	12.76	12.24
12	14.92	14.63	14.39	14.18	14.00	13.71	13.48	13.28	12.98	12.42
13	15.24	14.93	14.68	14.46	14.28	13.97	13.72	13.52	13.20	12.60
14	15.54	15.22	14.96	14.74	14.54	14.22	13.96	13.75	13.41	12.78
15	15.83	15.50	15.23	15.00	14.80	14.46	14.19	13.97	13.61	12.95
16	16.11	15.78	15.50	15.26	15.05	14.70	14.42	14.18	13.81	13.12
17	16.38	16.04	15.75	15.50	15.29	14.93	14.64	14.39	14.01	13.29
18	16.64	16.29	16.00	15.74	15.52	15.15	14.85	14.60	14.20	13.46
19	16.89	16.53	16.23	15.97	15.75	15.37	15.06	14.80	14.39	13.62
20	17.12	16.77	16.46	16.20	15.97	15.58	15.26	15.00	14.58	13.78
21	17.35	16.99	16.68	16.42	16.18	15.79	15.46	15.19	14.76	13.94
22	17.58	17.21	16.90	16.63	16.39	15.99	15.66	15.38	14.94	14.09
23	17.79	17.42	17.11	16.83	16.59	16.18	15.85	15.56	15.11	14.24
24	17.99	17.62	17.31	17.03	16.78	16.37	16.03	15.74	15.28	14.39
25	18.19	17.82	17.50	17.22	16.97	16.55	16.21	15.92	15.45	14.54
26	18.38	18.01	17.69	17.41	17.16	16.73	16.38	16.09	15.61	14.68
27	18.56	18.19	17.87	17.59	17.34	16.91	16.55	16.26	15.77	14.82
28	18.73	18.36	18.04	17.76	17.51	17.08	16.72	16.42	15.93	14.96
29	18.90	18.53	18.21	17.93	17.68	17.24	16.88	16.58	16.08	15.10
30	19.06	18.69	18.37	18.09	17.84	17.40	17.04	16.73	16.23	15.24
31	19.22	18.85	18.53	18.25	18.00	17.56	17.19	16.88	16.38	15.37
32	19.37	19.00	18.68	18.40	18.15	17.71	17.34	17.03	16.52	15.50
33	19.51	19.15	18.83	18.55	18.30	17.86	17.49	17.17	16.66	15.63
34	19.65	19.29	18.97	18.69	18.44	18.00	17.63	17.31	16.80	15.76
35	19.78	19.43	19.11	18.83	18.58	18.14	17.77	17.45	16.93	15.88
36	19.91	19.56	19.24	18.97	18.71	18.28	17.91	17.59	17.06	16.00
37	20.00	19.68	19.37	19.10	18.84	18.41	18.04	17.72	17.19	16.12
38		19.80	19.50	19.22	18.97	18.54	18.17	17.85	17.32	16.24
39		19.92	19.62	19.34	19.10	18.66	18.29	17.97	17.44	16.35
40		20.00	19.74	19.46	19.22	18.78	18.41	18.09	17.56	16.46
41			19.85	19.58	19.33	18.90	18.53	18.21	17.68	16.57
42			19.95	19.69	19.44	19.02	18.65	18.33	17.79	16.68
43			20.00	19.80	19.55	19.13	18.76	18.44	17.90	16.79
44				19.90	19.66	19.24	18.87	18.55	18.01	16.90
45				20.00	19.76	19.34	18.98	18.66	18.12	17.01
46					19.86	19.44	19.08	18.77	18.23	17.11
47					19.96	19.54	19.18	18.87	18.33	17.21



WBF Discrete VP Scale

This scale is a simplified one that will not be used in WBF Events, and should rarely be used for anything other than local teams events

VPs	No of Boards									
	6	7	8	9	10	12	14	16	20	32
10 - 10	0 - 0	0 - 0	0 - 0	0 - 0	0 - 0	0 - 1	0 - 1	0 - 1	0 - 1	0 - 2
11 - 9	1 - 2	1 - 2	1 - 3	1 - 3	1 - 3	2 - 4	2 - 4	2 - 4	2 - 5	3 - 7
12 - 8	3 - 4	3 - 5	4 - 6	4 - 6	4 - 6	5 - 7	5 - 8	5 - 8	6 - 9	8 - 12
13 - 7	5 - 7	6 - 8	7 - 9	7 - 9	7 - 9	8 - 11	9 - 12	9 - 12	10 - 14	13 - 18
14 - 6	8 - 10	9 - 11	10 - 12	10 - 12	10 - 13	12 - 15	13 - 16	13 - 17	15 - 19	19 - 24
15 - 5	11 - 13	12 - 14	13 - 16	13 - 16	14 - 17	16 - 19	17 - 21	18 - 22	20 - 25	25 - 32
16 - 4	14 - 17	15 - 18	17 - 20	17 - 21	18 - 22	20 - 24	22 - 26	23 - 28	26 - 31	33 - 40
17 - 3	18 - 21	19 - 23	21 - 25	22 - 26	23 - 27	25 - 30	27 - 33	29 - 35	32 - 39	41 - 50
18 - 2	22 - 26	24 - 28	26 - 30	27 - 32	28 - 34	31 - 37	34 - 40	36 - 43	40 - 48	51 - 61
19 - 1	27 - 32	29 - 35	31 - 38	33 - 40	35 - 42	38 - 46	41 - 50	44 - 53	49 - 60	62 - 76
20 - 0	33 +	36 +	39 +	41 +	43 +	47 +	51 +	54 +	61 +	77 +

Appendix F

The World Bridge Federation Scoring Committee

Ernesto d'Orsi - Chairman

Max Bavin - Co-Chairman

Henry Bethe

Bart Bramley

Peter Buchen

Mauricio di Sacco

Manolo Eminent