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Scoring and Results

Even in the computer era, with powerful machines doing a lot of things for us like obedient slaves, still men are the ones who give them the instructions. In our world machines calculate results, but only in the way somebody, usually a TD, instruct them how to do it. That way is normally an easy one, or at least something that does not require anything special, but sometimes the laws lead TDs to assign peculiar scores, such as split ones, requiring a special calculation. Furthermore, even though widely used, computers are not always available, and sometimes the programs for calculating results are not set for the kind of score we need to insert and compare.

However the way scores are calculated is not the only problem we have to deal with: computers compare scores, meaning numbers, but of course the TD has complete control and power (well, let's forget for the moment about Appeal Committees...) over which number has to be given to be compared or, in general, calculated, and there are cases where the figures have to be calculated manually in advance.

All that to justify why a specific lecture on scoring and results, now we are ready to go through the problems.

The first thing we have to say is that the problems we have to deal with, often need a different approach and solution according to the kind of competition, say primarily Teams or Pairs (Individuals can easily be treated like Pairs, even though there can be peculiar problems, like in assigning a penalty to a player and not to his partner, or in general different scores given to two players of the same Pairs) and secondarily the specific movement or scoring used in the case under examination. The difference between Pairs and Teams is mainly the fact that a single result is compared only once (Teams) or many times (virtually without any limit, Pairs). The difference between movements is related only to Teams, if Round Robin or KO, and involves unbalanced scores. The difference between the various scoring methods is related to the difference between the subjects object of calculation, say matchpoints, IMPs, VPs and Total Points.

Law 78 tells us about various scoring methods: A. *Matchpoint Scoring*; B. *International Matchpoint Scoring*; C. *Total Point Scoring*.

Matchpoints are the “natural”, straight way in which scores should be calculated. Every result obtained from a hand is compared to all the others from the same hand of the same group, then, according to the Law, two scoring units are awarded for each score inferior to it, one scoring unit for each score equal to it and zero scoring units for each score superior to it. Almost everywhere the scoring unit is the number 1 (how simple!) but some strange people (ACBL area) prefer 0.5. However the entity of the single scoring unit doesn't really matter, because any solution which would follow law 78A would give a rational result. Playing a Team contest using the Matchpoint scoring method is typical of the competitions called “Board-A-Match”, certainly the most technical one (we'll justify this affirmation later on), where the mp involved for each board are 2 (1 in the USA) being the possible solutions restricted to 2/0 or 1/1. In such events the job for the TD is very easy: once he decides to give

a result in favour to a side, the entity of that result doesn't matter, since any possible of them leads to 2/0 mp. Completely different is the matter when mp scoring is in use and the event is a Pairs one, for instance the most common situation a TD would face. In such events the results to be compared are more than 2, and sometimes hundreds. First of all we'll consider a normal Pairs Contest at Club level, where the results would be around 10, giving a solution more practical, for a small amount of scores, than the general one whose the solution we'll give straight after.

Let's consider the following score sheet:

TABLE A

| Contract | Result | NS score |
|----------|--------|----------|
| 4♥x | = | 590 |
| 3NT | -2 | 100 |
| 5♣ | = | -400 |
| 5♥x | -1 | -100 |
| 3NTx | -3 | 500 |
| 4♥x | +1 | 690 |
| 4♥x | -1 | -100 |
| 5♣x | = | -550 |
| 5♣ | = | -400 |
| 5♣ | = | -400 |

NS + 690 is superior to all the others, so wins 2 mp 9 times, consequently deserving a total of 18 mp for the contestant who did score it.

NS + 590 is superior to all the other but + 690, leading to 16 mp for the owner.

NS - 400 is a very poor result, superior only to -550 and twice equal, worth only 4 mp.

Of course from EW point of view the same results have the opposite value: the 1st is worth no mp, the 2nd just 2 mp and the 3rd a good 14 mp. We can now show the original score with the mp correctly calculated:

TABLE B

| Contract | Result | NS score | NS mp | EW mp |
|----------|--------|----------|-------|-------|
| 4♥x | = | 590 | 16 | 2 |
| 3NT | -2 | 100 | 12 | 6 |
| 5♣ | = | -400 | 4 | 14 |
| 5♥x | -1 | -100 | 9 | 9 |
| 3NTx | -3 | 500 | 14 | 4 |
| 4♥x | +1 | 690 | 18 | 0 |
| 4♥x | -1 | -100 | 9 | 9 |
| 5♣x | = | -550 | 0 | 18 |
| 5♣ | = | -400 | 4 | 14 |
| 5♣ | = | -400 | 4 | 14 |

The general solution, a must whenever big numbers of scores have to be compared, is very easy. First of all we need to build a frequency table, counting how many times we met every score (frequency). Following is a frequency table with 100 results:

TABLE C

| NS score | Frequency |
|----------|-----------|
| 1660 | 1 |
| 1430 | 21 |
| 680 | 54 |
| 650 | 18 |
| 620 | 4 |
| -100 | 1 |
| -200 | 1 |

Now, calculating in the way we did before would lead to a terrible headache (I guess..), better using the trick I'm going to show you. Give to the worst result the deserved mp, 0 in our case, then add that number to the frequency of the related score, so 1, and finally add the result to the frequency of the next score. We'll obtain the following:

TABLE D

| NS score | Frequency | Formula | NS mp |
|----------|-----------|-----------|-------|
| 1660 | 1 | 176+21+1 | 198 |
| 1430 | 21 | 101+54+21 | 176 |
| 680 | 54 | 29+18+54 | 101 |
| 650 | 18 | 7+4+18 | 29 |
| 620 | 4 | 2+1+4 | 7 |
| -100 | 1 | 0+1+1 | 2 |
| -200 | 1 | | 0 |

The next problem we have to face now is to cope with frequency tables where less scores than expected are present, for causes like Artificial Adjusted Scores, like the very common (unfortunately!) 60%-40%, or because a fouled board, and so on. In such cases following the letter of the law would lead to a clear injustice. If I achieve a very good result, say a top one, in a hand having all the expected scores, I'll receive all the mp available in a single hand, but, if I do the same in a hand having less scores, I'll receive less mp (since less comparisons would be made). To do the things in a better way almost everywhere the Neuberg Formula is used, a must in EBL events.

Let's take a look:

$$MP = (N/n \times (mp+1)) - 1$$

Where:

MP is the final number of mp awarded to a contestant;

N is the number of expected scores;

n is the number of the scores available;

mp is the number of mp awarded to a score calculated using law 78A only among its group.

Now we can consider the problem of a Pairs event of 6 sections, 13 tables each, playing 12 rounds (1st duplication round). In a section a board is wrongly duplicated and consequently divided in 2 groups: one consisting of 48 results and the other consisting of 12 results. To make things the simpler possible we'll examine the latter, using the following frequency table:

TABLE E

| NS score | Frequency | NS mp |
|----------|-----------|-------|
| 170 | 2 | 21 |
| 140 | 5 | 14 |
| 110 | 1 | 8 |
| -50 | 1 | 6 |
| -100 | 2 | 3 |
| -530 | 1 | 0 |

Now, remembering that:

$$N = 60$$

$$N = 12$$

$$N/n = 5$$

We'll have:

$$170 = 5 \times 22 - 1 = 109 \text{ MP}$$

$$140 = 5 \times 15 - 1 = 74 \text{ MP}$$

$$110 = 5 \times 9 - 1 = 44 \text{ MP}$$

$$-50 = 5 \times 7 - 1 = 34 \text{ MP}$$

$$-100 = 5 \times 4 - 1 = 19 \text{ MP}$$

$$-530 = 5 \times 1 - 1 = 4 \text{ MP}$$

The Neuberg Formula applies when the size of the group is bigger than 3 scores, while with less than that Artificial Adjusted Scores are awarded in the following way:

1 score: 60%

2 scores: 55% and 65%

3 scores: 50, 60 and 70

IMPs are a different thing: they were created to try to make more important the small numbers in an event where mp are not used, and for a very good reason: making an overtrick with a double squeeze is worth only 20/30 points, while watching opponents making a 5% grand slam vulnerable costs thousands of them. When mp are in use the size of the difference doesn't matter, but when they are not, how much a score is bigger than another is the key to the wins. IMPs are only seldom used in Pairs contests (at least at International level), while they are the usual form of scoring in Team events, sometimes with a further translation to VPs.

The mechanism is very easy in a Team contest: 2 teams score 1 score each on the same board then compare them, simply making an algebraic sum. Any difference in favour of one of the two teams shall now be converted in IMPs. No problem also when we need to assign an artificial adjusted score: law 86 says that every 10% over 50% is worth 3 IMPs.

As usual, things are more difficult, and longer to explain, when talking about Pairs events. There are two main ways to score a Pairs event with IMPs: a) Butler; b) IMPs Across the Field (cross-imps).

- a) The principle of Butler is making a comparison between the score achieved by a pair and only another number, like on Teams, despite the presence of many scores obtained over the same board. To do that all such scores are algebraically summed up and then divided by their frequency to obtain their algebraic average. The number obtained using this procedure is called "Datum" and is the number with which every pair shall compare its score. In other words we use the following formula:

$$\sum_{i=1}^n a(i) / n$$

Where:

a is a single score

n is the frequency

Making an example is very easy. Let's take a look at the following score sheet:

TABLE F

| NS score | DATUM | Formula | NS IMPs |
|----------|---|----------|---------|
| 600 | $(600-100+630-200-100+600+1370-500+800+1370) / 10 = 447$ round up to 450 | 600-450 | + 4 |
| -100 | | -100-450 | - 11 |
| 630 | | 630-450 | + 5 |
| -200 | | -200-450 | - 12 |
| -100 | | 600+100 | - 11 |
| 600 | | 600-450 | + 4 |
| 1370 | | 1370-450 | + 14 |
| -500 | | -500-450 | - 14 |
| 800 | | 800-450 | + 8 |
| 1370 | | 1370-450 | + 14 |

The opposite of course for the EW pairs. The only thing left to mention is what to do with datum scores ending in 5, such as 445: well, they have to be rounded up, making, in our case, 450.

All that does not however solve the following problem: somebody thinks that the average calculated in the way described above is not fair, because sometimes it could happen that odd results penalise pairs which don't deserve it. I do not want to go through this subject right now, but it is enough to report a couple of the various solutions adopted to solve the "problem". One, the most common, is taking away from the algebraic sum the highest and the lowest number (possibly more than one of both, in accordance with a special scale which adjusts the number in relation to the number of available scores). Another one is taking away the scores according to a statistic parameter called "standard deviation" (mathematicians are welcome to explain it during the coffee breaks...).

- b) IMPs across the field is easier: every pair compares its score with all the others like in a Team event, scoring positive or negative IMPs at every comparison and then algebraically summing them up. The formula is:

$$\sum_{i=1}^n a(i)$$

Where this time (a) is the number of IMPs scored after a comparison.

Let's make an example going back to the score sheet used for the Butler:

TABLE G

| NS score | Formula | NS IMPs |
|----------|---------------------------|---------|
| 600 | 12-1+13+12+0-13+15-5-13 | +20 |
| -100 | -12-12+3+0-12-16+9-14-16 | -70 |
| 630 | +1+12+13+12+1-12+15-5-12 | +25 |
| -200 | -13-3-13-3-13-17+7-14-17 | -86 |
| -100 | -12-12+3+0-12-16+9-14-16 | -70 |
| 600 | 12-1+13+12+0-13+15-5-13 | +20 |
| 1370 | 13+16+12+17+16+13+18+11+0 | +116 |
| -500 | -15-9-15-7-9-15-18-16-18 | -122 |
| 800 | 5+14+5+14+14+5-11+16-11 | +51 |
| 1370 | 13+16+12+17+16+13+18+11+0 | +116 |

To make the results easier to understand you would be better to have as output of your results the average of the numbers shown above, dividing the final figure by the number of comparisons. This method is very good to give the contestants a very clear idea of how good (or bad) their score was, the final number meaning how many IMPs each board was worth. As a player, for example, I like when this kind of calculation is used to make a ranking of the pairs in a teams event. My team-mates can't now say "How can it be possible that we lost having such a great score?" without passing the exam of the butler scoring...(I'm sorry, but I can only talk about team-mates, my pair never makes mistakes!)

Coping with IMPs is not a problem, Law 78B gives us a conversion scale which is easy to understand and use, so I think that it would not be useful to waste any more words on the subject. I can spend some more words talking about VPs.

At the dawn of contract bridge, and for many years, the entity of a victory didn't matter (as same as scoring with mp...) teams winning only 0, 1 or 2 points (I don't have news about what was done in the USA at that time, sorry...), then things changed. The first thing, done rather early, was asking for some more than 1 IMP to achieve a victory, the number varying according to the number of boards played, then, starting with the Olympiad held in New York in 1964 (at least at international level), VPs made their appearance. On that occasion the scale was quite odd, the VPs available being 7 in all (so no tie, the break of it done by calculating the total points!), and throughout the years we had many changes from the WBL and EBL. Nowadays, and since the Bermuda Bowl held in Stockholm in 1983, the 25/0 scale is widely used.

Even if this scale varies with the numbers of boards, as same as all the others ever used, this is not the crucial point. The matter of discussion is whether to use VPs or go back to the old habit. As you probably have already understood, I am in favour of the system of old times. How wide a victory is, is too often a matter of deals, if they permit or not big swings I mean, and great injustice can be done when two strong teams play a weak one with different boards.

Of course duplicating boards throughout the field of a Round Robin helps a lot, but in my opinion it is not enough, and 0, 1, 2 would still be the best possible solution.

Another point is how wide has to be every single step of a VPs scale: in my opinion it is crazy that single IMPs can have a different weight if they contribute or not to get a VP. In many invitational events (and in my Club...) something better is done: we use a scale where every single IMP is worth a VP. Let's make an example:

assume a capital of 100 VPs available for a contestant (either team or pair) in a single match. Both contestants start with a capital of 50 and win 1 for every IMP of difference registered at the end of the match. So, if the final result of a match is TEAM A 28 IMPs – TEAM B 45 IMPs, the VPs shall be TEAM A 33 – TEAM B 67. Of course is up to you to decide how big the number of VPs available has to be or, in other words, the maximum of VP a contestant can win.

Total Points are no longer used almost anywhere (in 20 years of bridge I've never seen any event scored with them...) but their comprehension is automatic so we can move on to the next subject.

Till now I have only talked about the way scores are compared and it is now time to take a look at the scores themselves, and particularly at two kind of them, split and weighted ones, and to the way they are compared and they contribute to the comparison among all the others.

The main reference for such a score is Law 12. Other colleagues go into it in more detail. For our purpose we only need to underline a couple of points:

- a) an adjusted score, either artificial or assigned, need not be balanced or, in other words, two different results can be given to the two sides involved, and it may even happen that a contestant receives an artificial score while his opponent gets an assigned one. In the preliminary text we had an example of this situation, where, in calculating the result of a team match we had to deal with two teams both losing 420 in the same boards. We are talking about something called a "SPLIT SCORE";
- b) sometimes you can't give the non-offending side all benefit of the doubt (once again, somebody else has to speak about it) or, at least, you will not be fair in this way. Law 12C3 allows us to act in a different way in order to preserve equity: you can give a score which takes account of the different possibilities, each with its proper weight. This object is called "WEIGHTED SCORE".

Split Scores

In events scored with mp split scores are not a problem at all. In a team contest, so a BAM, a split score consisting of 1 or 2 assigned ones doesn't make any sense, so also artificial ones if it is a KO match. However KO matches played with mp are extremely rare, and in the other BAM events fractions of mp have a sense. Consequently when the split score consists of two artificial ones you have a problem of calculation even if this is very easy to solve: every 10% is worth .2 mp (.1 in USA) and I guess that a sum won't be a problem.

In my opinion in such events an artificial split score makes sense only if equal for both sides, such as 40%-40% or similar, because whenever you judge that a side deserves more than the other you should assign the whole board, but this is not everybody's point of view.

Remembering what law 78A says we just have to compare the score of the two contestants with the others of the same group, NS or EW, so obtaining two different frequency tables. A simple example will help to understand what I mean:

TABLE H

| NS score | EW score | NS mp | EW mp |
|-------------|-------------|----------|----------|
| 590 | -590 | 16 | 4 |
| 100 | -100 | 12 | 8 |
| -400 | -690 | 4 | 1 |
| -100 | 100 | 9 | 11 |
| 500 | -500 | 14 | 6 |
| 690 | -690 | 18 | 1 |
| -100 | 100 | 9 | 11 |
| -550 | 550 | 0 | 18 |
| -400 | 400 | 4 | 15 |
| -400 | 400 | 4 | 15 |

In a contest scored with IMPs the situation is absolutely the same as when we talk about pairs events: we'll just have two different datum, one for each group. Talking about teams the situation is more complicated because this time we have to deal with two further problems: the conversion of the final results in VPs if is the case, or to extract a single result if the match is a KO one.

In the first case we only have to keep in mind that the two scores have to be calculated separately and the problem shouldn't be a big one. Let's take a look at the following:

In the 20 boards match Milan vs. Inter (the choice is not by chance...) there have been two adjusted scores: 1st TD gave an artificial adjusted score of 40% for both sides, which means, according to law 86, - 3 IMPs for each of the two teams, then he gave an assigned score of - 800 for Milan and - 1100 for Inter when board 17 was played in the Open Room, the result of the Closed Room being Milan - 620, Inter + 620. This last score has to be translated in IMPs, so:

Milan scores - 800 and - 620, - 1420 in all and - 16 IMPs;
Inter scores - 1100 and + 620, - 480 in all and - 10 IMPs.

The final result without the boards involved in split scores is Milan 78 - Inter 54 (a derby is always a bloody affair...) then:

From Milan's point of view they keep their 78 IMPs while the opponents score 19 more, leading to a difference of 5 IMPs in favour of Milan, thus 16 VPs.

From Inter's point of view they keep their 54 IMPs while the opponents score 13 more, leading to a difference of -37 IMPs and only 6 VPs. Final result in VPs:

MILAN 16 - INTER 6

In the second case, KO match, the calculation of the IMPs is done in the same way, but now we have to extract a single score for both sides. Law 86B tells us how to do it: the average of the two results separately calculated is assigned to both sides. In the case considered above the difference between the scores of the two teams in the keys two boards consists of 6 IMPs (for instance, a score of 40%-40% or any other artificial one equal for both sides doesn't make any sense in a KO match, so we may even avoid considering it) in favour of Inter, so an average of 3 for them. The final result of the match will be:

MILAN 78 - INTER 57.

Weighted Scores

Law 12C3 allows Appeal Committees (and the Code of Practice allows TDs also) to give such scores acting in order of equity. The only problem is how to calculate them. Since they are equal for both sides (well, actually not necessarily, in Maastricht we gave a split score consisting of two different weighted scores!) people could think that there are no problems at all. But unfortunately we don't give weighted scores in total points (unless, of course, the event is scored with them), but we give them in mp or IMPs. In other words what we weight is not a single number, but the number of mp or IMPs which would be worth every single possible result. Let's take a look at the following example:

For some reason we think that a pair deserves to score +1100 1 time out of 10, +620 7 times out of 10 and - 200 2 times out of 10. Playing mp, the affair is extremely easy in a team (BAM) event: what does weight in such cases is only how many times a team would win or lose a board: playing a pairs event the things are a bit more complicated. You have first to consider the various possible frequency tables, then to assign to the scores you have to weight (3 in our case) their corresponding number of mp, and finally weight them. Let's consider the following frequency tables, where the pairs we are interested in are the top ones:

TABLE J

| NS score | NS IMPs | NS score | NS IMPs | NS score | NS IMPs |
|-------------|-----------|------------|-----------|-------------|----------|
| 1100 | 18 | 620 | 12 | -200 | 6 |
| 620 | 11 | 620 | 12 | 620 | 13 |
| -200 | 5 | -200 | 5 | -200 | 6 |
| 620 | 11 | 620 | 12 | 620 | 13 |
| -500 | 1 | -500 | 1 | -500 | 1 |
| 790 | 16 | 790 | 18 | 790 | 18 |
| 620 | 11 | 620 | 12 | 620 | 13 |
| 620 | 11 | 620 | 12 | 620 | 13 |
| -500 | 1 | -500 | 1 | -500 | 1 |
| -200 | 5 | -200 | 5 | -200 | 6 |

So our NS pair receives 18 IMPs 1/10 of the times, 12 IMPs 7/10 of the times and 6 IMPs 2/10 of the times and summing them up we have a total of 11.4 (the EW pair shall get the balance, 6.6 IMPs, but not necessarily, as I said before. Strictly applying law 12 we can even give a different weight to each score when considering its result, such as, for example, 3/10 of -1100, 6/10 of -620 and only 1/10 of +200, all that leading to 4.2 IMPs).

The next problem is how to calculate the frequency for the other pairs of the group(s). In my opinion the only possible solution should be to weight all the scores, but practically (and sadly) nowadays we don't have any program doing that. If, hopefully, you would like to do it manually, the following is the solution for the scores shown above:

TABLE I

| Weight 1/10 | | Weight 7/10 | | Weight 2/10 | | Final NS MPs |
|-------------|-----------|-------------|-----------|-------------|----------|--------------|
| NS score | NS MPs | NS score | NS MPs | NS score | NS MPs | |
| 1100 | 18 | 620 | 12 | -200 | 6 | 11.4 |
| 620 | 11 | 620 | 12 | 620 | 13 | 12.1 |
| -200 | 5 | -200 | 5 | -200 | 6 | 5.2 |
| 620 | 11 | 620 | 12 | 620 | 13 | 12.1 |
| -500 | 1 | -500 | 1 | -500 | 1 | 1 |
| 790 | 16 | 790 | 18 | 790 | 18 | 17.8 |
| 620 | 11 | 620 | 12 | 620 | 13 | 12.1 |
| 620 | 11 | 620 | 12 | 620 | 13 | 12.1 |
| -500 | 1 | -500 | 1 | -500 | 1 | 1 |
| -200 | 5 | -200 | 5 | -200 | 6 | 5.2 |

If we assume to have done to the EW pair what I said before, we have to calculate a different frequency for the EW group. Let's take a look:

TABLE K

| Weight 3/10 | | Weight 6/10 | | Weight 1/10 | | Final EW MPs |
|--------------|----------|-------------|----------|-------------|-----------|--------------|
| EW score | EW MPs | EW score | EW MPs | EW score | EW MPs | |
| -1100 | 0 | -620 | 6 | +200 | 12 | 4.8 |
| -620 | 7 | -620 | 6 | -620 | 5 | 6.2 |
| +200 | 13 | +200 | 13 | +200 | 12 | 12.9 |
| -620 | 7 | -620 | 6 | -620 | 5 | 5.2 |
| +500 | 17 | +500 | 17 | +500 | 17 | 17 |
| -790 | 2 | -790 | 0 | -790 | 0 | .6 |
| -620 | 7 | -620 | 6 | -620 | 5 | 5.2 |
| -620 | 7 | -620 | 6 | -620 | 5 | 5.2 |

| | | | | | | |
|------|----|------|----|------|----|------|
| +500 | 17 | +500 | 17 | +500 | 17 | 17 |
| +200 | 13 | +200 | 13 | +200 | 12 | 12.9 |

This is what we wish, but in real life we have to find another solution at that moment. I'll give you the one used nowadays: inserting 50%-50%, consequently taking that result away when calculating the frequency of the other.

Last, but not least, we have to face the problem of calculating the result when IMPs are involved (and possibly VPs). Coming from the complicated way we did that with mp, dealing with IMPs shouldn't be so difficult. We have just to assign to each score we are considering its proper value in IMPs and then weight these values. If the contest is a pairs one, this leads to a job similar to the one we had to do with mp. We'll obviously have different datum according to the different results involved but that's all (not so easy practically speaking but the mechanism should be clear anyhow now). However, when the contest is a team one, we have to say something more.

First of all, we have to decide whether to calculate the final result directly in VP (as I think we should), or to start calculating the result in IMPs and then converting in VP (as we currently do, but probably erroneously). Since the final output is in VPs, I firmly believe that my friend Max Bavin is right in saying that we should do the former, but nevertheless I'll give both solutions.

Assume, for example, that we think a team (A) deserves to score +1660 1/10 of the times, +1430 4/10 of the times, +1100 4/10 of the times and +680 1/10 of the times. Since the score in the other room has been +1100 for the other team (B) or, using a more technical expression, B +1100 A -1100, we have:

$$\begin{aligned}
 1/10 +560 &= +11 \text{ IMPs} \\
 4/10 +230 &= + 6 \text{ IMPs} \\
 4/10 \quad 0 &= 0 \text{ IMPs} \\
 1/10 -420 &= - 9 \text{ IMPs}
 \end{aligned}$$

a total of +2.6 round up to 3 (then we have to add them to the IMPs capital of the team A and to calculate the final result in VPs). But, better, assuming a final result without this board of A 53 - B 36 and knowing that the match was played over 16 boards:

$$\begin{aligned}
 1/10 &= 22 \text{ VPs} \\
 4/10 &= 20 \text{ VPs} \\
 4/10 &= 19 \text{ VPs} \\
 1/10 &= 17 \text{ VPs}
 \end{aligned}$$

a total of 19.5. Now a further problem: we round up IMPs, but what should we do with VPs? Since we give penalties of half VPs, sounds reasonable rounding them up to the half, but contributes are welcome.

Well, I finally came up to the end. I did start thinking to write a couple of pages but then the job grew more every time I sit in front of the screen. I tried to be exhaustive but I'm sure I still missed some good point; nevertheless I hope to have been helpful with this dark matter.

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