

Manawatu Player Ratings

How to player ratings work?

Basically, each player gains points for each win, and loses points for each loss, and the higher the rating of the opponent one beats the more points one gains, and the lower the rating of the opponent one loses to, the more points one loses. As such, the system we use in Manawatu is modelled on the national system but with a few additional tweaks. To be more detailed, the Table below gives the rating adjustments applied after each result.

Rating Difference	Higher-ranked player wins	Lower-ranked player wins	Comment
0 – 25	8	8	The winner's rating is increased by the amount in this table and the loser's rating decreased by that number subject to the 'discount factor' given below.
25 – 50	7	10	
50 – 100	5	12	
100 – 150	3	15	
150 – 200	2	20	
200 – 250	1	26	
250 – 500	0.5	32	
Over 500	0	64	

The 'discount factor' further makes allowance for the fact that a closer match (e.g. 3:2 win) should not be treated the same as a more decisive 3:0 win. To allow for that, different results are given specified discount factors:

Result	Discount factor
3:0	1.0
3:1	0.9
3:2	0.75

Result	Discount factor
4:0	1.0
4:1	0.9
4:2	0.75
4:3	0.5

The ratings are then adjusted after each match by taking the points from the first Table and multiplying by the discount factor from the second Table. So, for example, someone on 1000 points might have played four matches with the following results:

Opponent rating	Result	Rating points	Discount factor	Total
1000	1:3	-8	0.9	-7.2
960	2:3	-10	0.75	-7.5
1140	3:0	15	1	15
1300	1:3	0	0.9	0
	Total			0.3

The first match in this example is against an equally-ranked opponent, with eight points potentially changing hands, but that is reduced to only 7.2 points because the result is only 3:1. The second and third results are slight upsets as they go against the previous ratings, and the fourth match is an expected loss against a very highly rated opponent. Overall, the points gained and lost nearly cancel out, for just a small gain of 0.3 points despite the player actually losing 3 out of 4 matches, but the matches are mainly against more highly-rated opponents.

Another way of looking at the ratings is given in the Table below. It gives the expected winning percentage against players with given rating differentials.

Rating Difference	Winning percentage	Rating Difference	Winning percentage
0 to 25	50.0%	0 to -25	50.0%
25 to 50	58.8%	-25 to -50	41.2%
50 to 100	70.6%	-50 to -100	29.4%
100 to 150	83.3%	-100 to -150	16.7%
150 to 200	90.9%	-150 to -200	9.1%
200 to 250	96.3%	-200 to -250	3.7%
250 to 500	98.4%	-250 to -500	1.6%
more than 500	100%	more than -500	0%

How do we get initial ratings?

Once players have a rating, ratings are further updated with each set of results as it comes in, but how do we get an initial rating? In essence, we need to find the rating with which a player's rating is steady for the set of results that are available. So, we might guess a player's rating and then add the points won and lost for all matches. If the resultant sum of extra rating points is greater than 0, then the initial guess would have been too low and a higher rating would be appropriate. The opposite applies, of course, if the sum of the ratings points is less than zero. This is repeated until we find the right rating for a new player - the rating at which the sum of all rating adjustments is 0.

Compensation for playing against improving players

The description so far is perfectly symmetrical, with the points gained by one player exactly matching the points lost by another. That's largely fine and how it should be. Ratings are not about awarding or penalising players, but only about objectively establishing everyone's playing standards.

But there is one problem: in practice, we find that lots of players start to play table tennis, become better players with improved ratings and then they stop playing, either because they lose interest or move away, or whatever. Their personal reasons don't matter, but what matters is that they improve their ratings while playing, and that improvement has to

come at the expense of the players they play against. And the more matches that players play, the more they are affected by that ratings draw-down through the ratings gain of improving players. That's clearly not fair as players who sit out a season would not be affected by that ratings draw-down.

To compensate for that effect, we need to provide some compensation to players for playing against improving players. We used to make that adjustment by occasionally giving that compensation through increasing players' ratings based on the number of matches they have played.

We now provide that compensation through giving an extra 1-point ratings compensation for each match played against opponents within the wider +/-500 point ratings window. The 1-point adjustment is purely empirical as it depends on the proportion of improving players in the system and the extent of their improvements relative to the number of matches being played.

And it is important to recognise that this is not a reward for playing matches, but a compensation for an inappropriate loss of points without becoming a weaker player.

And why are only some players included in the ratings list?

For rating adjustments, we include all available matches from events organised by Table Tennis Manawatu. Obviously, the more results we have, the more accurate the players' ratings become. A single result might just have been a fluke or a result against a particularly difficult or favourite opponent. So, we set a limit of players requiring at least 5 matches against opponents within the ratings window of +/- 250 points (or wins against someone rated more than 250 points above or a loss against someone more than 250 points below). Results against players with a larger ratings differential don't really add much information about a player's standard.

Once players are in the system, they would not normally drop out of the system again, and their ratings will remain equally valid whether they play none, few or many more matches. Of course, if players retire from playing or move away from Manawatu, their ratings would eventually be removed from the system. If players have an extended lay-off with injury or have a break from playing, their previous rating may also no longer be representative of their playing standard, and it will make more sense to restart their rating without considering results before the lay-off.

The system is now operational

One player's ratings gain will always be matched by another player's ratings loss. The system thus tries to be as fair and objectives as possible without any bonus points or penalties for playing few or many matches. Experience so far has indicated that the system gives a remarkably accurate assessment of players' standards. New players are entered into the system by calculating a starting rating from their initial matches until they reach the threshold of five qualifying matches. We remember the results of the matches those players have already played and combine them with the additional matches they will be playing until they reach the threshold of five qualifying matches against similarly-ranked opponents.

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