Proposed Modification to the Bowers Shuffleboard Rating System

Several decades ago, before there was any rating system, most shuffleboard tournaments were "Open" events in which all players competed against each other without regard to their individual abilities. This had the effect of creating a lopsided playing field and made it difficult for lesser skilled players to be competitive.

About 20 years ago, a rating system began to develop that helped level the playing field and create a more competitive environment at all levels of play. That rating system evolved into the Bowers Rating System we have now. Today shuffleboard players enjoy competitive tournament play whether they are just beginning or seasoned Pros. This leveling of the playing field has directly led to an increase in the number of players competing in tournaments and has helped to grow our sport.

As our sport has grown, some limitations of our rating system have become apparent; namely the subjective nature of the ratings. I believe this may be a good time for our rating system to evolve to a performance-based system. The game of chess uses a performance-based rating method called the Elo Rating System. My proposal is to modify the shuffleboard rating system to be performance-based using a hybrid of the Bowers and Elo rating systems.

The basic idea behind this performance-based rating system is any time a game is played between two players (or teams), there is an expectation of win based on their respective ratings; the stronger the rating, the greater the odds or expectation of winning. If a player (or team) exceeds their winning expectation, their rating would decrease (improve); if a player does not meet their winning expectation, their rating would increase.

Using some relatively simple mathematics, we can determine a winning expectation (odds of winning) between any two players (or teams) based on their ratings. We then apply this winning expectation to the outcome of a game or match to produce a rating change based on each player's (or team's) performance. Over the course of many games we create a clear picture of a player's true skill level compared to other players and a performance-based rating is produced.

Another limitation with the current system is the amount of time between rating adjustments. With the proposed hybrid system, ratings would be adjusted more frequently without creating additional work. A database would be created to store individual results and new ratings would be produced as often as 3 times a year. This has the effect of helping ensure the playing field remains level year round and would continue to foster growth in the sport.

The following pages describe in detail how the rating system would work and what rules would be used in the application of this method.

How The Performance-Based Rating System Works

Background

The Elo Rating System has been used in Chess for 50 years to rate players based on their win/loss results. It was developed by Dr. Arpad Elo, a master level chess player and physics professor, in the middle part of the 20th Century to improve the chess rating system in place at the time. While the Elo system was invented as an improved chess rating system, it is used today in a wide variety of games such as Go, Scrabble, Backgammon, various online role-playing games and many others (Google "Elo Rating System" for more information).

Theory

Performance cannot be measured absolutely; it can only be inferred from wins and losses against other players. A player's rating depends on the ratings of his or her opponents, and the results scored against them. The relative difference in rating between two players determines an estimate for the expected score between them. Both the average and the spread of ratings can be arbitrarily chosen.

The basic premise of the Elo rating system is this; in any given game or match between two players, there is an expected result based on the rating of each player. The expected result is the winning probability, as calculated based on the rating difference between the two players. You can think of the winning probability as the odds of winning. For example, if the rating difference is 0 (each player having the exact same rating), each player has a winning probability of 0.50 (50%).

The winning probability is calculated with the formula listed below:

$$We = \frac{1}{10^{((R1-R2)/2)} + 1}$$

We = win expectancy
R1 = rating of the player
R2 = rating of the opponent

While the formula might appear complex, the idea behind it is relatively simple. Imagine two shuffleboard players are going to play a 100 game match between each other. Player A is rated 1.00 and Player B is rated 1.74. Using the formula above we calculate that Player A (the stronger rated player) has a winning probability of 0.70 while Player B has a winning probability of 0.30 (see the chart on next page).

If each player were performing exactly to their expectation, at the end of the match Player A would have won 70 games and Player B 30 games. If however Player A only wins 55 games and Player B wins 45 games, then Player A did not meet their expectation and Player B exceeded their expectation. Each player's rating would be adjusted.

Winning Expectation Chart

The chart below gives the approximate winning expectation for shuffleboard ratings.

Remember that with shuffleboard ratings, the lower rated player is considered the stronger/better player.

If the Rating Difference is between:		The lower rater player's winning expectation is:	The higher rater player's winning expectation is:
0.00	0.01	0.50	0.50
0.02	0.05	0.51	0.49
0.06	0.08	0.52	0.48
0.09	0.12	0.53	0.47
0.13	0.16	0.54	0.46
0.17	0.19	0.55	0.45
0.20	0.23	0.56	0.44
0.24	0.26	0.57	0.43
0.27	0.30	0.58	0.42
0.31	0.34	0.59	0.41
0.35	0.38	0.60	0.40
0.39	0.41	0.61	0.39
0.42	0.45	0.62	0.38
0.46	0.49	0.63	0.37
0.50	0.53	0.64	0.36
0.54	0.56	0.65	0.35
0.57	0.60	0.66	0.34
0.61	0.64	0.67	0.33
0.65	0.68	0.68	0.32
0.69	0.72	0.69	0.31
0.73	0.76	0.70	0.30
0.77	0.81	0.71	0.29
0.82	0.85	0.72	0.28
0.86	0.89	0.73	0.27
0.90	0.94	0.74	0.26
0.95	0.98	0.75	0.25
0.99	1.03	0.76	0.24
1.04	1.07	0.77	0.23
1.08	1.12	0.78	0.22
1.13	1.17	0.79	0.21
1.18	1.22	0.80	0.20
1.23	1.28	0.81	0.19
1.29	1.33	0.82	0.18
1.34	1.39	0.83	0.17
1.40	1.45	0.84	0.16
1.46	1.51	0.85	0.15
1.52	1.57	0.86	0.14
1.58	1.64	0.87	0.13
1.65	1.72	0.88	0.12
1.73	1.78	0.89	0.11
1.79	1.87	0.90	0.10
1.88	1.95	0.91	0.09
1.96	2.05	0.92	0.08
2.06	2.16	0.93	0.07
2.17	2.28	0.94	0.06
2.29	2.42	0.95	0.05
2.43	2.58	0.96	0.04
2.59	2.79	0.97	0.03
2.80	3.09	0.98	0.02
3.10	3.67	0.99	0.01
3.68	>3.68	1.00	0.00

Application

We can't play 100 game matches to determine if a player is meeting or exceeding their expectation; we need to adjust ratings based on the results of a single game or match. To do this we assign a value to the result; a win = 1 and a loss = 0. Now we compare a player's result to their win expectancy to determine if their rating increases or decreases.

Using the example of our two players let's imagine now that they are going to play a single game. Player A still has a winning probability (or expectancy) of 0.70 and Player B 0.30. If Player A were to win the game (a result value of 1), we subtract their winning expectancy from their result and see that they exceeded their expectation by 0.30 (1- 0.70 = 0.30), or 30%. Since Player B lost, their result value is 0. When we subtract their winning expectancy from their result (0- 0.30 = -0.30) we see that they failed to meet their expectation by 30%. Each player would receive a mild rating change.

But what if Player B won the match? Since Player A was expected to win, this would be an upset victory for Player B. When we subtract Player B's expectancy from their result (1- 0.30 = 0.70) we see that Player B exceeded their expectation by 70% (and Player A failed to meet their expectation by 70%). In this example each player would receive a larger rating change than in the previous example.

Anytime the stronger player wins a game or match, there will be mild adjustments to each player's ratings. Anytime the weaker player wins a game or match, there will be a larger adjustment to their ratings.

K-Factor

Now that we have determined a player's expectancy and know the results of their play, we need to determine what adjustment their rating will receive. Just knowing that Player A exceeded their expectation by 30% doesn't mean a whole lot by itself. How will Player A's rating be affected by this result? This is where the K-Factor comes into effect.

The K-Factor is a numerical constant used as an attenuation factor. Simply put, the K-Factor assigns a specific value to wins and losses. Every time you play a game, there is a comparison between what your score was predicted to be, and what it actually was. The difference between the two is multiplied by the K-Factor and that is how much adjustment your rating will receive.

The K-Factor can be any value an organization wants it to be and varies between different users of the system. If the K-Factor value is set too large, there will be too much sensitivity to winning or losing in terms of a large number of rating points exchanged. Too low a K-Factor value and the sensitivity will be minimal; it would be hard to achieve a significant number of rating points for winning, etc.

Based on my study of the chess rating system and the K-Factors they use, I believe the most accurate K-Factor for use in shuffleboard is -0.12. This means that in any given match, each player will receive a percentage share of 0.12 rating points based on their result. For example, a player exceeding their expectation by 30% would receive a rating adjustment of -0.036 (-0.12 x 30%) rounded to -0.04. On the other hand, a player failing to meet their expectation by 30% would receive a rating adjustment of +0.036 (-0.12 x -30%) rounded to +0.04.

Most organizations use a staggering K-Factor to ensure minimal inflation at the top end of the rating spectrum. For example, the USCF (United States Chess Federation) uses three different K-Factors depending on a player's rating class. Players in the beginner and intermediate rating class use one K-Factor, players in the advanced rating class use a slightly smaller K-Factor, and players in the master level rating class use an even smaller K-Factor.

The K-Factors I recommend for use in shuffleboard are:

-0.12 for players rated 1, 2, 3, or 4
-0.10 for players rated 0
-0.08 for players rated -1

With a K-Factor of -0.12, a player would need +18 victories against an opponent of the exact same rating to move down one whole rating point (say from a 2.20 to a 1.20). A K-Factor of -0.10 requires +21 victories to achieve the same and a K-Factor of -0.08 requires +26 victories to move down one whole rating point.

NOTE: *+18 victories means that a player would have to win 18 games more than they lost (i.e. 25 wins vs. 7 losses; 50 wins vs. 32 losses, etc.)*

These K-Factors ensure that a player's performance is reflected in their rating in an accurate and timely manner without drastic or inflated changes.

Rating Change Formula

To determine the rating change for any given match, the following formulas are used:

Rating Change = K-Factor x (result – expected result)

New Rating = Current rating + Rating change

Let's again reference the players from the previous example. Remember Player A has a rating of 1.00 and Player B is rated 1.74.

Example 1: Player A wins the match.

K-Factor x (result – expected result)
Player A Rating Change = -0.12 x (1 - 0.70) = -0.0359 = -0.04 (rounded to two decimal places)
Player A New Rating = 1.00 + (-0.04) = 0.96

Player B Rating Change = -0.12 x (0 - 0.30) = 0.0359 = 0.04
Player B New Rating = 1.74 + 0.04 = 1.78

Example 2: Player B wins the match.

> **Player A Rating Change = -0.12 x (0 - 0.70) = 0.0841 = 0.08**
> **Player A New Rating = 1.00 + 0.08 = 1.08**
>
> **Player B Rating Change = -0.12 x (1 - 0.30) = -0.0841 = -0.08**
> **Player B New Rating = 1.74 + (-0.08) = 1.66**

Notice that the winning player's rating decreased by the same amount the losing player's rating increased; this will happen in most cases. Also notice that when the stronger rated player wins, the rating change is less than when the weaker rated player wins. An upset victory will always result in a larger fluctuation of ratings.

Multiplayer Events

Multiplayer events (bring partner, 4-person team, 6-person draft, etc.) introduce two other factors that must be addressed. How to determine a team's winning expectation and how to assign rating adjustments to each player on the team.

To determine winning expectation, the team's average rating will be used. While many of us are used to seeing combined ratings on Calcutta sheets, if combined ratings were used it would create an unrealistic expectation. Look at the charts below that represent two 6-player draft teams.

Team 1

Player	Rating	Player	Rating	Combined Rating	Average Rating
Todd	-0.90	Phil	1.60	6.60	1.10
Bob	0.10	Bill	2.10		
Rob	1.10	Jill	2.60		

Team 2

Player	Rating	Player	Rating	Combined Rating	Average Rating
Mandy	-0.70	Glen	1.80	7.80	1.30
Randy	0.30	Ben	2.30		
Sandy	1.30	Jen	2.80		

Looking at the combined ratings we see there is a rating difference of 1.20 between the two teams. If combined ratings were used to determine the winning expectation, Team 1 would have a win expectancy of 0.80 and Team 2 would have a win expectancy of 0.20. But if you look at the matchups between these two teams you can see that they are very closely matched: 1.10 vs. 1.30; 2.10 vs. 2.30, etc. To expect Team 1 to win 80% of the time against Team 2 is not realistic. Using the average rating to determine the winning expectation (a rating difference of 0.20), Team 1 has a win expectancy of 0.56 and Team 2 has a win expectancy of 0.44; a much more realistic and fair expectation.

T-Factor

For team play, the T-Factor will be introduced into the formula. The T-Factor is simply how many players are on the team. For a Bring Partner event, the T-Factor will be 2; for an ABC Draw, the T-Factor will be 3, etc. In team events, each player will share equally in the team's accomplishments by dividing the results by the T-Factor.

Any given win or loss has a set rating value regardless of the number of players involved. The more players involved, the smaller share each player receives. For example, a win against a player of the exact same rating in a singles event is worth -0.06 rating points (-0.12 x (1 - 0.50) = -0.06); a win against a team of the exact same rating in a bring partner event is worth -0.03 points to each player (-0.06/2); a win against a team of the exact same rating in a 6-person draft event is worth -0.01 points to each player on the team (-0.06/6).

The rating change formula now looks like this:

Rating Change = (K-Factor x (result – expected result)) / T-Factor

Let's again look at Player A and Player B. This time they are each the captain of a 3-person team and their teams will play a match against each other. Player A's team has an average rating of 1.00; Player B's team has an average rating of 1.74. The difference in the average rating is again 0.74, so Player A's team has a winning probability of 0.70 and Player B has a winning probability of 0.30.

<u>Example</u>: Player A's team wins the match.

Player A's Team Rating Change = (-0.12 x (1 - 0.70)) / 3 = -0.0120 = -0.01
Each player on Player A's team will have a rating adjustment of -0.01

Player B's Team Rating Change = (-0.12 x (0 - 0.30)) / 3 = 0.0120 = 0.01
Each player on Player B's team will have a rating adjustment of 0.01

Handicap Play (H-Factor)

For matches that use a handicap, the H-Factor will be introduced into the formula. There are various events that use some form of a handicap system. Some use a positive or negative point spot; some use a 12-point game to expedite play in the interest of time. It is difficult to know exactly how much influence a handicap has on the outcome of a game or match and without empirical data, I can only estimate the handicap effect. It is my opinion that the handicap does not truly affect the outcome of a game or match more than 25% of the time. Since the results of handicapped events are somewhat skewed, the affect on an individual's rating should be skewed (or discounted) by the same amount (25%). For handicapped events, the **Rating Change** formula looks like this:

Rating Change = ((K-Factor x (result – expected result)) / T-Factor) x H-Factor (0.75)

Let's again look at Player A and Player B. This time they are playing in a handicapped singles event and Player A has a 1-point negative handicap. Player A still has a winning probability of 0.70. The H-Factor is 0.75 (discounted 25% for the handicap). The T-Factor is 1 since they are playing a singles event. Using the formula listed above we calculate their new ratings as follows:

Example: Player A wins the match.

Player A Rating Change = ((-0.12 x (1 - 0.70)) / 1) x 0.75 = -0.0269 = -0.03
Player A New Rating = 1.00 + (-0.03) = 0.97

Player B Rating Change = ((-0.12 x (0 - 0.30)) / 1) x 0.75 = 0.0269 = 0.03
Player B New Rating = 1.74 + 0.03 = 1.77

Administration

A system like this may appear to be an enormous task to administer, but it is not as daunting as it may seem. All the information necessary to track results already exists; it's just a matter of gathering it up. All we need to know is who played against who, and who won; the rest us just number crunching. With only a Calcutta sheet and a picture of the tournament bracket, I have been able to produce rating adjustments for several different tournaments.

Ultimately I envision a web-based program that tournament directors would use to input results in real time. This program would take care of tournament registration, producing Calcutta sheets, gathering tournament results, storing results and rating adjustments, and publishing new ratings. Players would also be able to access their specific information, such as pending rating adjustments, win-loss statistics, etc., in real time from this website. At some point fans may even be able to follow tournament results in real time from this website.

Rating Adjustments

It is important to understand that an individual's rating will not immediately change as a result of a win or loss during tournament play. Each game played will instead produce a rating adjustment that will be compiled over a period of 4 months. During this time, a player will continue to play using their last published rating. After this 4-month period, the data will be reviewed for accuracy and a new rating published. The following is an example of Player A's results over a 4 month rating cycle.

Player A enters 2 tournaments and plays 3 events in each. The results are listed below.

NOTE: *The expected and actual results listed are the combined expected and actual results for all games played in that event. The math comes out the same whether you score each game individually or combine all the expected and actual results.*

Tournament 1

Event	Games/Matches Played	Expected Result	Actual Result (# of wins)	Rating Adjustment
Singles	7	5.50	5	+0.0600
Bring Partner	4	4.25	2	+0.1350
A/B Draw	8	4.67	7	-0.1398
			Tournament 1 Total Rating Adjustment	**0.0552**

Tournament 2

Event	Games/Matches Played	Expected Result	Actual Result (# of wins)	Rating Adjustment
Singles (handicap)	9	6.52	8	-0.1332
4-Person Draft	6	3.50	4	-0.0150
A/B Draw	3	1.13	1	+0.0078
			Tournament 2 Total Rating Adjustment	**-0.1404**
			Total Rating Adjustment For Both Tournaments	(0.0552) + (-0.1404) = **-0.0852**

New Published Rating

Old Rating	Rating Adjustment	New Rating	Games Played	Games Won	Winning Percentage
1.00	-0.0852	0.91	37	27	73%

The new rating of 0.91 would be published for Player A would be used in future play after the effective published date.

Publishing Cycles

At some point in the future, ratings could be published 3 times a year in 4-month cycles. After a rating cycle is complete, it will take no longer than 2 months to publish the new ratings. This allows time to compile all tournament results, enter any new players into the system, and check for accuracy. Once the new ratings are published, there is a built in lag period of 2 months before they become effective. This lag period will allow players time to plan future events such as putting together a bring team for a tournament that begins in 4 months. The chart below demonstrates the publishing cycles.

Rating Cycle	Rating Period	New Ratings Published	Effective Date
1	1 Feb – 31 May	1 Aug	1 Oct
2	1 Jun – 30 Sep	1 Dec	1 Feb
3	1 Oct – 31 Jan	1 Apr	1 Jun

For Those Of You Keeping Score At Home

If you would like to test the math I've presented, you can plug the following into a spreadsheet and see for yourself how your rating might be adjusted based on your wins and losses.

Column A	Column B	Column C	Column D	Column E	Column F	Column G
Your Rating	**Opponent Rating**	**Rating Difference**	**Expected Result**	**Actual Result**	**T-Factor** Singles = 1 Doubles = 2 ABC = 3 Team = 4 or 6	**Rating Adjustment**
(your rating)	*(opponent's rating)*	=A2-B2	=1/(10^(C2/2)+1)	*(Win = 1)* *(Loss = 0)*	*(enter the T-Factor)*	=(-.12)*(E2-D2)/F2

Row 1 (the row below the shaded area) is only a header row to identify what information is in each column. In row 2, enter the formulas exactly as shown in columns C, D, and G. The information for columns A, B, E, and F you must manually enter based on the situation you are testing. You may also wish to format columns D and G to only display 2 decimal places to make the information easier to digest.

NOTE 1: *Column F must have a value in it for the formula in column G to work. If you are testing a singles event, enter 1 for the T-Factor.*

NOTE 2: *The formulas shown above do not include any H-Factor for handicap play. If you wish to include handicap events in your calculations, simply multiply column G by 0.75 to see the rating adjustment for handicap play.*

Transition And Evaluation Period

A transition and evaluation period will be needed to incorporate this modification into the rating system. I propose that during the first several years, the rating system continue as is with the following modifications.

1. The performance-based rating system begins tracking tournament performance of players.
2. Every 4 months, the performance-based data be compiled and forwarded to the Bowers' for review.
3. At the end of the year, this information be forwarded to raters for consideration during the rating process.
4. Raters continue to rate players as they have in the past taking into account the performance-based rating information.
   a. Raters may accept the performance-based rating as is or modify it as they deem appropriate.
   b. Players that are not part of the performance-based data continue to be rated in the same manner as before.

During this period, the performance-based system would be put through extensive testing and evaluation and modifications or revisions made as necessary. A system for tracking and storing tournament results will also be developed and evaluated. Players will gain experience with the performance-based system and have opportunities to provide feedback on its operation. Finally at some point in the future, the hybrid Bowers-Elo Rating System may be able to operate independent of individual raters.

Rules for Use

The following guidelines would be used in the application of the performance-based system.

1. In order for an event to be considered a rated event (meaning the results will count towards rating calculations), the following criteria must be met:
    a. The event must have a minimum entry fee of $20 per player.
        i. Exception; a minimum entry fee of $10 per player for 4 rated players.
        ii. Any registration fees do not count towards this minimum event fee.
        iii. If a tournament has multiple events, only events that meet the criteria for a rated event will be used for rating calculations.
    b. Each event must include a Sponsor Sale.
        i. No player is required to buy back their share of the Sponsor Sale.
        ii. The Sponsor Sale must have a minimum starting bid equal to at least the entry fee for the event.
    c. Each event must be double elimination.

2. The following will not count toward rating calculations:
    a. Events that use non-standard play, such as blind play, mulligan use, etc.
    b. Nonstandard events, such as round robins held before a tournament begins or in between events.
    c. Single elimination events.
    d. League play.
    e. Open draws unless they meet the criteria in rule 1.

3. Only games that are played will count toward rating calculations.
    a. Forfeit games or matches will not be counted.
    b. Games played after a split is agreed to (played for the trophy) will not be counted.
    c. Games not played or games started but not finished due to penalty (such as tardiness, removal of the player from the tournament) will not be counted.

4. For rating purposes, only the outcome that moves a player or team in the tournament bracket will be used.
    a. If an event is best 2 out of 3, only the result of the match (not each individual game) is used for ratings.
    b. In team play, only the team's results (not individual play) will be used for ratings.

5. Players that are unrated will receive a rating from the Tournament Director prior to the beginning of an event.
    a. The Tournament Director may (and should) use all means at their disposal to determine a fair provisional rating. (i.e. ask other players that have knowledge of the new player's abilities)
    b. This provisional rating must be a whole number (i.e. 3.00, 4.00) and will be used by that player until an established rating is published.
    c. The player's rating will be annotated with (U) next to their rating on Calcutta sheets.

6. In order for a player to receive an updated (or new) rating, the following criteria must be met.
    a. The player must have played at least 10 rated games (or matches) since their last rating change.
    b. The 10 rated games can be from a single event or spread throughout multiple events.
    c. Any player that hasn't played 10 rated games since their last rating change will not receive an updated rating.
        i. Their rating will remain the same as the previous rating period.
        ii. All rated games played will remain in the system and once the player has reached 10 rated games, they will receive a new rating at the next publishing cycle.
        iii. Any player that has not received an updated rating in the proceeding 12 months will receive an updated rating regardless of the number of rated games played.
            1. Any and all rated games played during that 12-month period will count towards the updated rating.
            2. If no rated games have been played, the old rating will be the new rating and the 12-month period will begin again.

7. Tournament Directors may remove an individual game or match from rating consideration if in their opinion one or more players are deliberately losing the game solely for the purpose of raising their rating.

NOTE: This does not nullify the win or loss for the players involved with regard to the tournament brackets, it only disqualifies the game from rating consideration.

8. Ratings will be calculated and published 3 times a year in 4-month cycles.
    a. Cycle 1 rating period will be from 1 Feb thru 31 May.
    b. Cycle 2 rating period will be from 1 Jun thru 30 Sep.
    c. Cycle 3 rating period will be from 1 Oct thru 31 Jan.

d. All rated tournament events that are played during these periods will be used to calculate ratings for the next publishing cycle.
e. Any rated tournament that begins before the cutoff date will be counted during that rating cycle even if it doesn't finish until after the cutoff date.
f. All results, certified by the Tournament Director, must be submitted to the rating database collection agency (to be determined) not later than 30 days after the cutoff date for that rating cycle.
g. New ratings will be published approximately 60 days after the rating cycle cutoff date. **NOTE:** Published does not necessarily mean new ratings books are distributed but that new ratings are available for viewing using methods to be determined.
h. New ratings will not go into effect until the beginning of the next rating cycle.
    i. New ratings published on 1 Apr will not be effective until 1 Jun, the next rating cycle.

NOTE: This allows players a minimum of two months after ratings are published to put together a Bring Partner or Bring Team for future tournament events.

    ii. A tournament that begins prior to the effective date of the new ratings will use the old ratings even if most of the events occur after the effective date for that rating cycle.
        1. Example 1. A tournament has its first event on 31 May; they will use the ratings for cycle 3 for the entire tournament.
        2. Example 2. A tournament has its first event on 1 Jun; they will use the ratings for cycle 1 for the entire tournament.

Anti-Sandbagging Rules

Three of the rules listed above (rules 1, 6 and 7) are specifically designed to discourage/prevent sandbagging. Sandbagging describes someone who underperforms deliberately in an event. A person on the fence between two rating classes (i.e. 2.49) might deliberately attempt to lose games to change their rating class from a 2 to a 3 for future tournament play.

Rule 1 sets a minimum entry fee for a tournament's results to be used for rating purposes. Rule 6 requires a player to have played at least 10 games or matches in qualifying tournaments to receive a rating adjustment in the next publishing cycle. These two rules combined would require a player attempting to sandbag (by entering tournaments and deliberately their first 2 games) to invest at least $100 (plus potential Calcutta money) over the course of 5 events to receive a new rating in the next publishing cycle. Additionally, rule 7 gives Tournament Directors the latitude to disqualify any game or match from rating consideration if they believe a player is sandbagging.