**Submitted by:** Doug Couchman **Date:** July 15, 2020

**Committee:** Masterpoint Committee

**Purpose:** To update thecalculation of masterpoints to account for strength of field.

**Moved that:** In all tournament events for which the overall awards are calculated by formula, (including Individuals, Pairs, Swiss Teams, and Board-a-Match Teams), excluding STaCs and events with arbitrary first place awards such as the Grand National Teams and excluding all events with a knockout phase, the masterpoint formula shall be modified to account for the strength of the field in that event by the method detailed below, and that such method be amended in the future to account for improvements in methods for estimation of players’ abilities and for other factors that have not yet been adequately accounted for.

**Effective date:** January 1, 2021, or when it can be implemented by management

**Estimated cost/savings:** zero

**Masterpoint Calculation Using Strength of Field**

**Discussion**

The conventional understanding of masterpoints is that they should to some extent represent achievement, and thus in principle the determination of such awards should depend on how difficult it was to achieve any given result. The currently used masterpoint formula does not capture achievement very well in all cases; this proposed method improves the fit between difficulty and masterpoints awarded in covered events. The proposed method also eliminates certain factors that unfairly penalize some events while unfairly rewarding others.

Specifically, the proposed method calculates masterpoints based only on the following factors:

* How many entrants (pairs, teams, or individuals) players competed against;
* How strong we believe these entrants were;
* How many deals (boards) the competition involved; and
* What sort of competition (e.g., regional or sectional; pairs or teams) the event was.

Perhaps more importantly, several factors that should not in principle affect masterpoint awards but are included in existing formulas have been eliminated. Factors that would no longer affect masterpoint awards are:

* What other events are taking place in the same tournament;
* What the masterpoint limits, if any, of the event are; and
* What restrictions, if any, apply to the event.

Note that each of the three factors listed above was meant to capture to some extent how difficult events are, but none actually does so. For example, the fact that a Gold Rush game is taking place at the same site as one regional open pairs while none occurs at an otherwise similar tournament does not make the first tournament’s open game any more difficult to win, unless the existence of the gold rush game changes the composition of the field actually entered in the pair game. Similarly, masterpoint limits and other restrictions do not change the difficulty of winning an event if they have no effect on who enters it. Restrictions and limits, and the presence of other games, *may* have such effects in some cases, but it would be much better to capture the effect directly if we could than to use proxies that sometimes work poorly. The proposed method does this.

It is worth considering the four factors that *are* used to calculate awards, to see what effect they have and why:

**First, number of entrants***.* It is easier to win first place (or second, or third, or whatever) in a larger field than in a smaller one; adding another entrant does not ever make winning easier. One problem with strength of field calculations that have been proposed in the past is that sometimes *adding* a low-strength entrant *reduced* masterpoint awards by lowering the average strength of field. The way our method handles strength of field, this can never happen; adding an entrant always raised the awards by at least some amount.

**Second, actual strength of field.** Regression analysis of results at many (about 30) regional tournaments revealed that while masterpoint holding is not a very good predictor of any single player’s results on any single day of bridge, over time masterpoint holding does help predict results. Accordingly, we used the current masterpoint holding of every player in an event (applying a simple exponential function) to calculate a single strength of field factor for that event. Events that include players with higher masterpoint totals pay more than those that are composed of presumptively weaker players.

**Third, how many deals are played.** Longer competitions are better at finding “true” winners than shorter ones; random variation can always occur but its effect drops as more boards are played. The proposed method captures this effect in a fair way, by awarding the same total masterpoints *per board* regardless how many events they are divided into. For example, a single, two-day event would pay as much in total as two one-day events with exactly the same entrants. However, the various places are modified to reflect the difficulty of winning, so that first place in the two-day event pays more than either single day event, but less than first in both single day event combined. In other words, it means more to win a longer event than a shorter one, but it would mean even more to win *both* of the one-day events, and the masterpoint awards reflect this ordering.

**Fourth, type of event.** Traditionally we vary masterpoint awards according to what type of tournament the event takes place in, and this proposal does not alter this practice in any way. Likewise, pigmentation is left unchanged.

The effect of event type (pairs versus teams) is twofold: On one hand, a team event in a sense captures better how well an entrant has performed because it reflects four players’ performance rather than just two; on the other hand, for an entrant to win, say, first place in a 100 player Swiss requires finishing first against 24 other entrants while first place in a 100 player pair game requires beating 49 other pairs. In principle these effects balance out, and the proposed method reflects this by awarding the same total number of points in each event, but the formula is slightly affected to account for the different number of places paid in the two events. (No measure of how “true” different types of events — e.g., board-a-match versus Swiss teams — run has been included, but if one were developed it could be added straightforwardly.)

**The Effect**

Every player will want to know: What effect will this have on me? What will happen to masterpoint awards in the events I enter?

In many cases the answer is “not very much”; in most others the answer will be “your points will increase somewhat.”

The method was calculated to keep top awards in open events largely unchanged. Of course, some events will pay more and some will pay less. In general, events that feature strong fields, and those that are large, will pay more, while small events with relatively weak fields will pay less. The average, in flight A, is approximately unchanged, because that is how the method was designed, and deviations from this average will not often be large (on the order of 10% for “normal” events).

The two larger effects on open fields are:

* Events that take place without qualifying concurrent lower-level events (i.e., open pairs with no concurrent gold rush) have been unfairly penalized, by 30% or more, under the old system; this penalty has been eliminated; and
* Lower strats that nevertheless feature strong players — quintessentially, the X strat in a strong A/X pairs event— also pay a fair amount more than they did.

The effect on lower-level events tends to be much smaller, as they vary less in strength, and tends to be to increase awards somewhat. Many lower level events, particularly gold rush events, pay “too little” under the current system relative to what strength of field seems to dictate, and the proposal increases average gold rush awards by an average of about 20%. Whether this is appropriate from marketing or other perspectives has not been assessed; it does seem to be correct from a mathematical perspective.

Midflight events, when they are held, seem not to show the underpayment effect and in effect may pay a bit “too much” under the current system, but the effect is smaller than with gold rush.

One other effect that may surprise some people is that not all fields that seem strong actually are. In particular, fields with many unbalanced pairs (e.g., pro-client pairs with wildly different masterpoint totals) may appear to be strong when considering average masterpoint totals, but because increasing masterpoint totals give diminishing returns the effect of the stronger player on strength of field calculations is not as great as one might expect. For example, a hypothetical pair composed of one player with 19,500 masterpoints and one with 500 (a total of 20,000) has about the same effect on the calculations as that of a pair with about 5,750 points apiece (11,500 total).

Internet events would also be covered when they are played under the tournament formulas. In general internet events are not greatly affected except when they become very large; the current formula does not handle extremely large fields (of several hundred or more entrants) fairly. On the other hand, current practice in internet events is to play of only 18 boards, just 75% of the minimum that has long been considered normal in open games.

The proposed method corrects the average masterpoint award in very large games, while keeping first place awards somewhat limited. It includes a correction for number of boards played per session, but discounts awards in such events by only half as much as would be expected based on a simple ratio of boards played. It also does not include a separate discount factor, which has been proposed, of 80% for all internet play. The net of all of these effects is a moderate increase in the amounts paid for very large internet events, and a small increase for smaller events.

Application of the formula to some actual tournaments files from 2019 can be found in the appendix.

**Disadvantages**

No method is perfect, and the proposal has some disadvantages that should be considered.

First, the strength of field measure employed is far from perfect. Masterpoints are not the best possible predictor of performance and a more sophisticated measure, perhaps based on points that “decay”, on pigmentation ratios (platinum is better…), or even on some carefully calculated “power rating” using players’ actual results would be a more accurate measure. If future analysis reveals that some measure is both more accurate and also feasible to implement, it could be incorporated straightforwardly.

Relatedly, calculating masterpoints differently does nothing to solve a different problem, namely that players’ masterpoint holdings sometimes cause them to play in the “wrong” events for their skill levels. Newer but skilled players may not always be permitted to “play up” to their skill levels, and players who by virtue of long experience have accumulated masterpoint totals that are now out of proportion to their current skill do not ever have the option to “play down”. A true, individually calculated strength measure could be used to address this issue; the proposed strength of field measure cannot be.

One problem that could be addressed but has not yet been is masterpoint inflation. Initially this proposal would cause some inflation: Awards in top-flight events are not greatly affected overall (because the method was designed around them) but lower strata and lower flights have been systematically “underpaid” in the past relative to what the math suggests is appropriate, and paying them their true value would tend to increase total awards. But after the initial affect there would also be a slight further upward trend: as players continue to earn masterpoints, their “strength” for calculation purposes would increase and so would the awards based on them. In effect, inflation would beget more inflation. It would be straightforward to apply a fix based on, for example, the average masterpoint holding among all ACBL players, but we have not done so. Note that any such inflation effect will be small: for example, if average masterpoint holding were to increase 10% over the next several years, the average award calculated under the proposed method would increase by less than 4% as a result.

**Appendix — The Math**

**Definitions:**

N = The number of entrants (individuals, pairs, or teams) in the event. Flighted events are considered separate events.

N’ = The number of entrants used for calculating the first place award, defined for individual and pair events as

* For N ≤ 100, the number of entrants; and
* For N > 100, 100 × (entrants/100)2/3

… and for team events as

* For N ≤ 50, the number of entrants; and
* For N > 50, 50 × (entrants/50)2/3

S = the number of sessions or session equivalents. Each session of between 24 and 28 deals is considered one session. Each session of d < 24 deals is considered (d + 24)/48 sessions, except that in events with an upper masterpoint limit of 300 masterpoints or less (in any stratum), sessions of at least 16 deals will be considered full sessions. Each session of d > 28 deals is considered d/28 sessions.

P = the number of places receiving overall masterpoint awards according to the existing depth of field tables; it is generally equal to N/4, rounded to the nearest integer with numbers ending in 0.5 rounded up.

R = the rating factorof the event, as follows:

|  |  |
| --- | --- |
| **CLASSIFICATION** | **R FACTOR** |
| StaC | 9.00 |
| Sectional | 11.00 |
| Regional | 14.00 |
| Regional event at NABC | 16.00 |
| National | 22.50 |

A(x) = is the calculated masterpoint award for xth place, for all x = 1 to P. A(1) is calculated according to the formula below, and other values of A(x) are calculated recursively using A(1) and D(x).

MP = each player’s total masterpoint holding, or as near an approximation as is known, including any eligibility points.

MPc = each player’s corrected masterpoint holding, where in events with an upper masterpoint limit, MPc = MP, and in events with no upper masterpoint limit or a limit of more than 3000 masterpoints, MPc = MP or 300, whichever is greater.

F = the strength of field factor, calculated as the average, for all players entered, of MPc0.4.

D = the raw decay factor used to calculate the relationship between one award and the next. D is calculated as described below and is specific to each event. The actual decay from place to place, D(x) varies based on D, x, and P.

D(x) = the decay factor used to calculate the decay from place D(n – 1) to place D(x), so A(x) = A(x – 1) × D(x).

T = the approximate total masterpoints to be awarded in the event, calculated according to the formula below.

**Overall awards in Regional and Sectional Pair and Individual events shall be calculated as follows:**

A(1) = 2 × R/14 × F/30 × (N’ × S)0.6 × (S/2)1/3

T = 0.07 × R/14 × N × S × F

D = 1 – (A(1)/T) × (P/(P+2))

D(x) = D2 × (1 – ((x – 2)/P)), but D(2) ≤ 0.8

**Overall awards in Regional and Sectional Swiss and Board-a-Match events shall be calculated as follows:**

A(1) = 2 × R/14 × F/30 × (2 × N’)0.6 × S0.6 × (S/2)1/3

T = 0.07 × R/14 × N × S × F

D = 1 – (A(1)/T) × (P/(P+2))

D(x) = D2 × (1 – ((x – 2)/P)), but D(2) ≤ 0.8

Factors employed in the above equations may be adjusted to reflect new findings regarding the determinants of performance in various events.

**Methodology**

The above calculations produce approximately the same total masterpoint awards as were found over a sample of all open, midflight, and gold rush two-session events at 30 regional tournaments played in 2019. Regression analysis was used to calculate the best fit of masterpoints won to masterpoint holding, and the relationship was found to be approximately

e(MP) = 0.14 × MP0.4

Note that the intercept was not forced to be 0, i.e., the best fit exponential curve suggests that the expected value for someone with 0 masterpoints is very close to 0. (It was actually 0.04 in the regression.) Very little rounding was performed: the best exponent was 0.40, not 0.39 nor 0.41, and the slope coefficient was calculated as 0.1393 and rounded to 0.14.

Fit was improved when a masterpoint floor of 300 masterpoints was used in open games, but the “bottom” of the curve is still messy as the performance of players with fewer than 300 masterpoints is much harder to predict than at higher masterpoint totals. Also, performance in gold rush games is much less well predicted by masterpoint totals: the natural exponent for such games would be approximately 1/6, meaning that higher masterpoint players don’t perform much better than those with fewer points. This unpredictability complicates application of formulae to such games.

The curve for midflight games appeared to be very similar to that in open games in terms of the effect of masterpoints on expected winnings, but with an “intercept” of 0.4, which in effect means a midflight event now pays about 0.4 masterpoints more per player than would be expected in a similar open game. The sample for midflight events was much smaller than that for open and gold rush games so confidence in the magnitude of this effect is lower.

The R2 of the regression used was 0.21, meaning that about 21% of performance is predicted by the equation; the remaining 79% represents other factors including individual skill that is not reflected in masterpoint total and especially random, day to day variation. (An R2 of 1, the highest possible value, would indicate that every event is completely predictable — no one ever performs well or poorly relative to his or her expectation, and such expectation can be known with certainty and never varies for any reason. Obviously this is not a good description of bridge, a game with considerable variance over the event lengths that are normally played, so the R2 was expected to be low.

The terms’ meanings are as follows:

* The initial factor of 2 in the calculation of A(1) arises because calculations are normalized for two-session events.
* R/14 is used because calculations were based on regional pair games, which currently (and under the proposal), use a value of R = 14.
* F/30 arises from the strength of field in a theoretical field in which every participant has 3000 masterpoints; in such a field F ≈ 30.
* F is calculated on a per-player basis. For team events it would theoretically be preferable to calculate a team average for each team, and then average those team averages, to reflect the fact that members of six-player teams do not all play the entire event. The effect of this simplification is probably not large, and it is probably almost nonexistent except in events with many six-player teams, but these assumptions have not been checked.
* Both N’ and S are raised to a power of 0.6 in the calculation of A(1), but are raised to the power of 1 in the calculation of T. The latter power means that the expected total award goes up as a factor of the number of entrants and the number of sessions. The power of 0.6 means that a little more than half of the increase when entrants or sessions are increased will be seen in the first place award; for example, doubling the number of entrants, or the number of deals played, will each increase the first place award by a factor of approximately 1.52. This factor can be changed without significantly affecting the average award, because the decay factors are calculated to award approximately the correct total amount regardless what the first place award is.
* For pair and individual games, N is simply the number of pairs or individuals in the event, for events of up to 100 entrants. To prevent first place awards from growing uncomfortably large in very large events, while retaining the ideal that event size should not significantly change the total award per player, an adjustment was made to the N used (called N’) for calculation of A(1) but not for T. Specifically, increases in field size beyond 100 pairs show up in the first place award only to the extent of the two-thirds root of such increases; the remainder shows up in T. This effectively means that the curve for payouts is substantially flattened in very large events, while it is unaffected in events of up to 100 pairs and affected very little in events that are slightly over 100 pairs.
* To retain the ideal that an identical field playing a pair and a team game should receive the same awards, the calculation of N’ for team games pivots at 50 teams (equivalent to 100 pairs).
* The number of sessions S is calculated as a function of number of deals, but variation between 24 and 28 deals per session never affects the calculation. Below this range, masterpoints are discounted relative to a “full” session of at least 24 deals, but by only half of the difference; there is no theoretical reason that the full discount should not be employed; rather, it is a reflection of current custom. The discount does not apply to low-level (no more than 300 masterpoint) events that play at least 16 deals, so as to avoid appearing to penalize newer players.
* The leading factor of 0.07 in the formula for T is a product of 0.14 (the regression factor), 0.5 (dividing by the number of sessions, as the regression factor was calculated for two-session events).
* The factor of (S/2)1/3 is added to place additional value on first place in longer events; as with the previous point about the exponents on N and S, this facture is in effect recaptured in the decay factor to ensure that total awards are not significantly affected..
* The factor of P/(P+2) is an approximation designed to account for the absence of awards that could be calculated but are not awarded because of depth of field limitations. It has a substantial affect when the field is small (and without it the calculations would be incorrect for such events), but very little effect for large fields.
* The calculation of D(x), for x > 1, produces a curve that is fairly steep at the top and flattens at the low end (i.e., farther from first place). The curve is slightly different from that currently employed because varying D among events is necessary to achieve the correct relationship between first place and total awards for different event sizes. Specifically, a value of D is calculated, and to calculate D(x), D is raised to a power that begins at 2 for D(2) and declines linearly toward 0 as x increases from 2 to P (the number of places paid, based on table count). The adjustment for D(2), constraining it from being greater than 0.8, ensures that first place always pays at least 25% more than second; this constraint affects only very large (typically over 100 entrants) events.
* P used for calculation purposes is the theoretical number of places paid; in very large events a few lower awards will be calculated as less than 1.00 and will therefore not be awarded (unless this floor is changed).
* For calculation of awards in team events, the calculation of T is identical to that used with pair events while the calculation of the first place award A(1) is based on twice the number of teams entered. The effect of the change to A(1) is to make first place in a team event worth what it would be worth if the same field played a pair game (abstracting from the existence of teams of more than four players), while the effect of leaving the calculation of T unchanged is to ensure that the total masterpoints awarded remains the same.

It would be straightforward to add other factors to reward participation in certain events over others: Simply multiply both A(1) and T by the desired factor. For example, a factor of 0.8 has been suggested for internet events; if such a factor is used it is important to apply it to both A(1) and T.

The following table shows expected masterpoint awards that result from applying the formula to various masterpoint holdings.

|  |  |
| --- | --- |
| **MP Holding** | **Formula win/day** |
| 0 | 0.00 |
| 50 | 0.67 |
| 100 | 0.88 |
| 300 | 1.36 |
| 500 | 1.67 |
| 750 | 1.97 |
| 1000 | 2.21 |
| 1500 | 2.60 |
| 2000 | 2.91 |
| 3000 | 3.43 |
| 5000 | 4.20 |
| 10000 | 5.55 |
| 20000 | 7.32 |
| 50000 | 10.56 |

This table shows the actual masterpoints received, versus what would be expected based on the formula, for various ranges of masterpoint holdings:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Range Averages** |  |  |  |  |
| **Lower MP** | **Upper MP** | **Actual** | **Formula** | **(sample)** |
| 0 | 49.99 | 0.80 | 0.46 | 2,158 |
| 50 | 99.99 | 1.04 | 0.79 | 2,623 |
| 100 | 299.99 | 1.23 | 1.16 | 13,610 |
| 300 | 499.99 | 1.35 | 1.52 | 11,085 |
| 500 | 749.99 | 1.55 | 1.82 | 7,546 |
| 750 | 999.99 | 2.00 | 2.09 | 3,495 |
| 1,000 | 1,499.99 | 2.52 | 2.41 | 4,634 |
| 1,500 | 1,999.99 | 2.76 | 2.77 | 3,277 |
| 2,000 | 2,999.99 | 3.19 | 3.18 | 5,055 |
| 3,000 | 4,999.99 | 3.56 | 3.81 | 5,828 |
| 5,000 | 9,999.99 | 4.75 | 4.78 | 5,223 |
| 10,000 | all | 6.90 | 6.82 | 3,603 |

The fit is excellent except below 100 masterpoints. This former effect may result from experienced players who have substantial non-ACBL bridge experience.

This table includes shows the calculated awards in a hypothetical two section (52 pairs), two session event, given certain masterpoint “averages” (using the exponential averaging function employed in the formula):

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Award Based on Field with Uniform Masterpoints** | | | |  |
| **Place** | **100** | **300** | **1000** | **2500** | **7500** |
| **1** | 6.83 | 10.59 | 17.14 | 24.73 | 38.38 |
| **2** | 5.18 | 8.04 | 13.01 | 18.77 | 29.13 |
| **3** | 4.02 | 6.23 | 10.09 | 14.56 | 22.59 |
| **4** | 3.18 | 4.94 | 7.99 | 11.53 | 17.89 |
| **5** | 2.57 | 3.99 | 6.46 | 9.32 | 14.47 |
| **6** | 2.13 | 3.30 | 5.34 | 7.70 | 11.95 |
| **7** | 1.79 | 2.78 | 4.51 | 6.50 | 10.09 |
| **8** | 1.55 | 2.40 | 3.88 | 5.60 | 8.70 |
| **9** | 1.36 | 2.11 | 3.42 | 4.93 | 7.66 |
| **10** | 1.22 | 1.90 | 3.08 | 4.44 | 6.89 |
| **11** | 1.13 | 1.75 | 2.83 | 4.08 | 6.33 |
| **12** | 1.06 | 1.64 | 2.65 | 3.83 | 5.94 |
| **13** | 1.01 | 1.57 | 2.54 | 3.67 | 5.69 |

Note that 7,500 weighted-average masterpoints would be an extremely strong field, stronger than even the strongest regional A/X field. The top stratum in regional open events we have studied have ranged from about 1,650 to about 5,700. Flight B in open pairs tends to range from about 800 to about 1500. Gold Rush flight A averages a little more than 300.

**Real-World Examples**

Here are some sample award charts that illustrate the effects of using the proposed method. First, we compare two events with similar structures: A flight A event that took place at the Gatlinburg Regional with 71 entrants, and a flight A event from the Warwick Regional with 70 entrants. Each was concurrent with a lower level event, but the Gatlinburg event featured much more experienced players: The masterpoint average in flight A was 8,094 in Gatlinburg versus 3,432 in Warwick. The corresponding weighted averages (weighted by exponential as in the method used) were 5,673 and 2,380 respectively, for F values of 31.7 and 22.4.

These values of F indicate that the Gatlinburg event “should” have paid about 44% more than the event in Warwick, because the aggregated expected value for all players in the event, for a day of bridge each, was 44% more. But the formulas currently employed yield masterpoint awards that are only 14% higher in Gatlinburg.

Here are the awards under the current system, and the proposed awards, for these two events:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Gatlinburg** | **Gatlinburg** | **Warwick** | **Warwick** |
| **Place** | **Now** | **Proposed** | **Now** | **Proposed** |
| 1 | 38.29 | 41.38 | 33.57 | 28.99 |
| 2 | 28.72 | 32.19 | 25.18 | 22.51 |
| 3 | 21.54 | 25.39 | 18.88 | 17.73 |
| 4 | 16.15 | 20.31 | 14.16 | 14.16 |
| 5 | 12.76 | 16.47 | 11.19 | 11.47 |
| 6 | 10.94 | 13.55 | 9.59 | 9.42 |
| 7 | 9.57 | 11.30 | 8.39 | 7.85 |
| 8 | 8.51 | 9.55 | 7.46 | 6.63 |
| 9 | 7.66 | 8.19 | 6.71 | 5.68 |
| 10 | 6.96 | 7.13 | 6.10 | 4.94 |
| 11 | 6.38 | 6.29 | 5.60 | 4.35 |
| 12 | 5.89 | 5.62 | 5.16 | 3.89 |
| 13 | 5.47 | 5.10 | 4.80 | 3.53 |
| 14 | 5.11 | 4.69 | 4.48 | 3.24 |
| 15 | 4.79 | 4.37 | 4.20 | 3.02 |
| 16 | 4.50 | 4.13 | 3.95 | 2.86 |
| 17 | 4.25 | 3.97 | 3.73 | 2.74 |
| 18 | 4.03 | 3.86 | 3.53 | 2.66 |
| **Total** | **201.53** | **223.47** | **176.69** | **155.68** |

The current formula is particularly hard on open events that take place with no concurrent lower event to boost their awards. A real-world example, from a regional in Quebec:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Quebec A** | **Quebec A** | **Quebec B** | **Quebec B** | **Quebec C** | **Quebec C** |
| **Place** | **Now** | **Proposed** | **Now** | **Proposed** | **Now** | **Proposed** |
| 1 | 15.75 | 20.41 | 7.68 | 12.02 | 3.50 | 4.85 |
| 2 | 11.81 | 15.45 | 5.76 | 8.80 | 2.63 | 3.42 |
| 3 | 8.86 | 11.95 | 4.32 | 6.68 | 1.97 | 2.63 |
| 4 | 6.64 | 9.45 | 3.24 | 5.24 | 1.48 | 2.21 |
| 5 | 5.25 | 7.63 | 2.56 | 4.26 |  |  |
| 6 | 4.50 | 6.29 | 2.19 | 3.58 |  |  |
| 7 | 3.94 | 5.30 | 1.92 | 3.12 |  |  |
| 8 | 3.50 | 4.57 | 1.71 | 2.81 |  |  |
| 9 | 3.15 | 4.02 | 1.54 | 2.62 |  |  |
| 10 | 2.86 | 3.61 |  |  |  |  |
| 11 | 2.63 | 3.31 |  |  |  |  |
| 12 | 2.42 | 3.11 |  |  |  |  |
| 13 | 2.25 | 2.98 |  |  |  |  |
| **Total** | **73.57** | **98.08** | **30.92** | **49.14** | **9.57** | **13.12** |

Had there been a gold rush event running concurrently with this open pairs event, awards would have been at least 30% greater than was actually awarded; the proposed method increases total awards appropriately, by 33% in the A stratum, 59% in B (which was relatively strong at only about 25% weaker than A), and 37% in C.

As seen in the Quebec example, the formula also applies to stratum awards below the top stratum; in such cases the “event” constitutes all the pairs or teams eligible for awards in the stratum. We see similar disparities between theoretical and actual awards using the current system when examining stratum awards.

For example, consider the C strat of the same Warwick event as above, and contrasted with the C strat of an open event that was held in New York City. The C strat in Warwick had an average MP holding of 937 and an F of 14.97; the corresponding values for the C strat of the New York event were 775 and 13.23 respectively. The C strats were nearly identical in size (26 and 25 respectively), and the Warwick C strat’s awards should have been about 18% higher (4% because of the slightly larger field and 13% for the somewhat stronger field), but the current formula produced awards that were higher in the New York City tournament:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Warwick C** | **Warwick C** | **NYC C** | **NYC C** |
| **Place** | **Now** | **Proposed** | **Now** | **Proposed** |
| 1 | 7.27 | 10.68 | 8.48 | 9.22 |
| 2 | 5.45 | 7.67 | 6.36 | 6.59 |
| 3 | 4.09 | 5.78 | 4.77 | 4.94 |
| 4 | 3.07 | 4.56 | 3.58 | 3.88 |
| 5 | 2.42 | 3.78 | 2.83 | 3.20 |
| 6 | 2.08 | 3.28 | 2.42 | 2.77 |
| 7 | 1.82 | 2.98 | 2.12 | 2.52 |
| **Total** | **26.20** | **38.73** | **30.56** | **33.12** |

Note that the proposed formula produces higher awards for both events, albeit by different amounts. Increased awards for lower strata is a common, though not universal, effect of the proposed method; the current formula effectively awards less for stratum awards than it would if the identical stratum were its own flight. Assuming one does not want to discourage “playing up”, it is appropriate to eliminate this effect as the proposal does.

Of the open events studied in detail, half would have paid increased awards in their top strata had the proposed formula been used while half would have paid less. A substantial majority of lower stratum awards studied would have increased under the new formula.

An example of a small event with a weaker field, in which awards decrease under the proposal:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **W-B A** | **W-B A** | **W-B B** | **W-B B** | **W-B C** | **W-B C** |
| **Place** | **Now** | **Proposed** | **Now** | **Proposed** | **Now** | **Proposed** |
| 1 | 16.19 | 12.70 | 5.04 | 4.99 | 4.32 | 4.30 |
| 2 | 12.14 | 8.99 | 3.78 | 3.47 | 3.24 | 2.92 |
| 3 | 9.11 | 6.82 | 2.84 | 2.73 | 2.43 | 2.25 |
| 4 | 6.83 | 5.54 |  |  |  |  |
| 5 | 5.40 | 4.82 |  |  |  |  |
| **Total** | **49.67** | **38.86** | **11.66** | **11.18** | **9.99** | **9.47** |

This event, which occurred at a regional tournament in Wilkes-Barre, PA, featured only 16 pairs total and the field was not particularly strong. (The strength of field factor was about 6% greater than in the Warwick event discussed earlier, 24% greater than the Quebec open pairs, and 25% less than the Gatlinburg A/X pairs.) In general the current formula awards too much to small events and the proposal lowers the award for A in this event by about 22%.

**Limited Events**

The formula applies to limited events as well. Several gold rush events were studied in detail but the effect of the strength of field measure was not large, as the fields did not vary much in strength. (The difference in F between the strongest and the weakest fields was just 14%.) The formula consistently generated greater awards than are now awarded, typically about 20 to 25% higher in strat A, with more variability in lower strats but a similar average effect.

This is not necessarily a problem: the strength of field measure does capture what the award “should” be if the field as a whole is to be ambivalent about “playing up” versus playing in a limited game. If, however, we wish to encourage “playing up” to some extent, while limited masterpoint inflation among those who are more comfortable in limited games, then it would be appropriate to incorporate a multiplicative factor (to be applied to both A(1) and T) of perhaps 0.8 to be applicable to games with masterpoint-limited events that are concurrent with open or higher-limit events. Note that this could be accomplished by modifying R.

**Online Events**

Events held online have been subject to a “deflator” of 0.8 across the board, but this deflator is not yet part of any masterpoint formula and it has therefore not been included in calculations accompanying this proposal.

It is now normal for internet sessions to constitute 18 deals instead of the more customary 24–28 employed in most face -to-face events. The proposed formula does incorporate this reduced number of boards played, in effect discounting awards relative to what would have been awarded for “full” (at least 24 boards) sessions; However, the discount is only half of what it theoretically should be, in order to increase palatability.

Some regional events conducted online feature very strong fields. For example, an A/X event conducted during the recent online regional featured an average masterpoint holding of 6,014 and an F of 26.7, less than the values for the A strat in the Gatlinburg A/X event discussed above but substantially above every other face-to-face tournament event that was considered.

Total awards for that flight A event would have been approximately 40% higher under the proposed formula than under existing rules:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Internet A** | **Internet A** | **Internet X** | **Internet X** |
| **Place** | **Now** | **Proposed** | **Now** | **Proposed** |
| 1 | 37.45 | 45.13 | 21.37 | 32.18 |
| 2 | 28.09 | 36.11 | 16.03 | 25.74 |
| 3 | 21.07 | 31.58 | 12.02 | 21.21 |
| 4 | 15.80 | 27.69 | 9.02 | 17.59 |
| 5 | 12.48 | 24.35 | 7.12 | 14.68 |
| 6 | 10.70 | 21.46 | 6.11 | 12.33 |
| 7 | 9.36 | 18.97 | 5.34 | 10.42 |
| 8 | 8.32 | 16.80 | 4.75 | 8.86 |
| 9 | 7.49 | 14.93 | 4.27 | 7.58 |
| 10 | 6.81 | 13.29 | 3.89 | 6.53 |
| 11 | 6.24 | 11.87 | 3.56 | 5.65 |
| 12 | 5.76 | 10.62 | 3.29 | 4.93 |
| 13 | 5.35 | 9.54 | 3.05 | 4.32 |
| 14 | 4.99 | 8.58 | 2.85 | 3.82 |
| 15 | 4.68 | 7.74 | 2.67 | 3.39 |
| 16 | 4.41 | 7.00 | 2.51 | 3.03 |
| 17 | 4.16 | 6.35 | 2.37 | 2.73 |
| 18 | 3.94 | 5.77 | 2.25 | 2.47 |
| 19 | 3.75 | 5.26 | 2.14 | 2.25 |
| 20 | 3.57 | 4.81 | 2.04 | 2.06 |
| 21 | 3.40 | 4.40 | 1.94 | 1.90 |
| 22 | 3.26 | 4.04 | 1.86 | 1.76 |
| 23 | 3.12 | 3.72 | 1.78 | 1.64 |
| 24 | 3.00 | 3.44 | 1.71 | 1.55 |
| 25 | 2.88 | 3.19 | 1.64 | 1.47 |
| 26 | 2.77 | 2.96 | 1.58 | 1.41 |
| 27 | 2.68 | 2.76 | 1.53 | 1.36 |
| 28 | 2.58 | 2.58 | 1.47 | 1.31 |
| 29 | 2.50 | 2.42 | 1.42 | 1.28 |
| 30 | 2.42 | 2.26 | 1.38 | 1.25 |
| 31 | 2.34 | 2.13 | 1.34 | 1.24 |
| 32 | 2.27 | 2.01 |  |  |
| 33 | 2.20 | 1.90 |  |  |
| 34 | 2.14 | 1.80 |  |  |
| 35 | 2.08 | 1.72 |  |  |
| 36 | 2.02 | 1.64 |  |  |
| 37 | 1.97 | 1.57 |  |  |
| 38 | 1.92 | 1.50 |  |  |
| 39 | 1.87 | 1.44 |  |  |
| 40 | 1.83 | 1.39 |  |  |
| 41 | 1.78 | 1.34 |  |  |
| 42 | 1.74 | 1.30 |  |  |
| 43 | 1.70 | 1.26 |  |  |
| 44 | 1.66 | 1.23 |  |  |
| 45 | 1.63 | 1.20 |  |  |
| 46 | 1.59 | 1.17 |  |  |
| 47 | 1.56 |  |  |  |
| 48 | 1.53 |  |  |  |
| 49 | 1.50 |  |  |  |
| 50 | 1.47 |  |  |  |
| 51 | 1.44 |  |  |  |
| 52 | 1.41 |  |  |  |
| 53 | 1.39 |  |  |  |
| **Total** | **274.08** | **384.21** | **134.30** | **207.93** |

Observe that the first place award is increased by about 20%; the remaining increase under the proposed method comes primarily between 3rd and about 18th place. Some increase is mathematically appropriate (except in that this does not reflect a full discount for the fact that internet events typically do not involve “full” sessions of 24 or more deals), as the current formula punishes large, strong fields like this one, as well as lower strata; note that the increase is greater for strat X.

Current rules provide that overall awards less than 1.00 masterpoints are not awarded, but there seems to be little reason not to do so now when otherwise warranted now that their calculation is automatic. Including the sub-1.00 awards in stratum A in the would add only about 6 masterpoints, or 2%, to the total while increasing by seven the number of players receiving awards.

Concern has been expressed regarding the extremely large events that are possible on the internet, and this is the reason for the correction to N’ for numbers of entrants greater than 100. The effect of this correction on a hypothetical internet event with a normal field can be seen here:

Note that the correction affects only events that exceed 100 entrants. Without the correction, first place in a 1000 pair event with the strength of an average open pairs in a (face-to-face) regional would pay 125 masterpoints, versus 58 with the proposed method.