# USBGF Master Points System

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## Quick Reference

**Master Points are awarded in two types:**

- **Match Win Master Points**

- **Placement Master Points**

**Match Win Master Points = Event Weight * Division Weight * Match Win Points**

**Placement Master Points = Event Weight * Division Weight * Rank Points**

**Event Weight = Normalized to 1.0 for ABT Main Event (See Appendix A: Event Weight Table)**

**Division Weight**

| Div. Rank | Div. Weight | Typical Div. Names |
|-----------|-------------|-------------------------------|
| 1 | 1.0 | Open, Championship, Masters |
| 2 | 0.7 | Advanced, Intermediate, Limited |
| >= 3 | 0.5 | Novice, Beginner |

**Match Win Points = SQRT( Match Length )  / 3**

**Rank Points = 0.6 * Event Size Factor * Player's Rank Factor**

**Event Size Factor = Log2( Number of Players )**

**Player's Rank Factor**

| Rank points | Rank Factor |
|---|---|
| 1 | 1.000 |
| 2 | 0.700 |
| 3 | 0.500 |
| 4 | 0.333 |
| 5 | 0.250 |
| 6 | 0.200 |
| 3 or more | $1 / (R - 1)$ |

## What are Master Points?

Master Points are awarded to players based upon their achievements in designated events in which they play.  Once Master Points are earned, they are never lost.  Master Points enable players to achieve personal goals and to be recognized for their accumulated achievements over various timeframes.   A goal of this Master Points system is to encourage regular participation and create additional excitement by giving players goals to achieve and extending the spirit of competition beyond the current event.

## Scope

The USBGF Master Points System is based upon a framework intended to be flexible and extensible. This document contains only those aspects of the framework that have been proposed for implementation as of this document's publication date.  The goal is to start simple and add more features over time, based upon capabilities, results and feedback from the backgammon community.

## Recognition

Recognition based on Master Points should be of two types: Competitive and Personal.

Competitive recognition implies some form of ranking amongst the players, such that players seek to outperform others in order to move to the top of the list.  These rankings can be limited to a specific timeframe (like the annual ABT points race), or can be open-ended (similar to Elo).

Personal recognition implies that there are recognition levels that people can achieve on their own, through active participation and results, but they are not competing with others for a single award.  A Life Master level that someone can work towards by reaching published lifetime point thresholds is an example.

# Eligibility

Only players who are USBGF Basic members (or higher) at the time an event is played shall be awarded USBGF Master Points from that event; all unawarded Master Points are forfeited.

# Master Point Awards

Events that award Master Points must be documented so that it is clear to everyone whether an event will award points and if so how the number of points will be computed.  The classes of events that award Master Points: "Master Points Eligible Events", shall be defined by the Event Weight Table (see below).  If an event class is not listed in the Event Weight Table, that class of event is not Master Points Eligible.

Players receive Master Points for the eligible events in which they participate.

**Master Points are awarded in two types:**

- **Match Win Master Points**

- **Placement Master Points**

Match Win Master Points are awarded to players each time they win a match in an eligible event. Placement Master Points are awarded to the small subset of participants in an eligible event that advance sufficiently far to claim one of the designated placement ranks.  For example: the event winner.

The following values combine to determine the number of points a player is awarded.

**Match Win Master Points = Event Weight \* Division Weight \* Match Win Points**

**Placement Master Points = Event Weight \* Division Weight \* Rank Points**

Event Weight = A measure of the relative value of this event as compared with other events.

Division Weight = If the entrants are segregated into separate skill divisions, a skill level factor is applied so that more points are awarded for events having stronger fields of players.

Match Win Points = Points awarded to players each time they win a tournament match.

Rank Points = The number of points awarded based upon a person's rank of finish in the tournament. Only a small percentage of participants finish in ranked positions as determined by the event organizers.  Other participants do not receive Rank Points regardless of how far they progressed.

# Event Weight

Every USBGF Event and other designated Master Points Eligible non-USBGF Events shall be assigned an Event Level. The Event Weight is determined from the Event Level. Level 0 events are not awarded Master Points, but may be included in certain stats such as Elo Ratings.

| Event Level | Event Weight |
|-------------|--------------|
| Level 6 | 1.2 |
| Level 5 | 1.0 |
| Level 4 | 0.8 |
| Level 3 | 0.6 |
| Level 2 | 0.4 |
| Level 1 | 0.2 |
| Level 0 | 0.0 |

See Appendix A (Event Weights) for more details on how Event Levels are assigned to various Event Types, and for the list of non-USBGF Events that are Master Points Eligible.

Various factors will influence how much weight a particular tournament should have in the awarding of master points. Event Weight may be a multiple or fraction of 1 and are subject to change. Some of the factors that will be considered when assigning Event Weight are:

Importance: Events like the National Championships might warrant a higher master points multiple. National events are more important than regional, sectional or local events. National Events that require people to earn spots (qualify) may warrant a higher weight because there are fewer players, but they have already achieved something by being there.

Type of Event: Main events may warrant a higher (or lower) multiple than various side events. Any kind of event in which the USBGF believes participation does more to further its mission might warrant a premium.

Restrictions: Events whose entry criteria restrict or otherwise impose general barriers to participation for reasons other than skill level, or USBGF membership status.

# Division Weight

When a tournament's criteria for entry categorizes the player population based on skill level, providing independent event brackets for each skill division, a Division Weight factor will be applied.

The top skill division shall have a Division Weight of 1.0. The second skill division shall have a Division Weight of 0.7, and the third shall have a Division Weight of 0.5. If there are more than 3 skill divisions, the division with rank R shall have a Division Weight of 1/(R-1). Only the rank of skill division matters, not the descriptive name given to it, so an "Intermediate" division could be the second ranked skill division in one event, while being the third ranked skill division in another event.

If an event organizer defines multiple skill divisions, but decides at the time of the event to combine two or more skill divisions into a single event bracket, the Division Weight of that combined event shall be the Division Weight that would have been assigned to the highest of the combined skill divisions.

Division Weight is based on the number of skill levels defined, not the number of skill divisions actually run. So if an event was run that defined top level players to be ineligible, but no separate division was run for those top level players, this event would still have a Division Factor of 0.7.

Some common examples of tournaments having multiple skill levels are: Main events having Open, intermediate and Beginner skill divisions; and Major jackpots having Masters and Limited skill divisions.

| Div. Rank | Div. Weight | Typical  Div. Names |
|-----------|-------------|---------------------|
| 1 | 1.0 | Open, Championship, Masters |
| 2 | 0.7 | Advanced, Intermediate, Limited |
| 3 | 0.5 | Novice, Beginner |
| 4 or more | 1 / (R − 1) | |

# Match Win Points

A player receives Match Win Points for each match that he wins in the tournament as follows:

**Match Win Points = SQRT( Match Length )  / 3**

Thus, a 9-point match win earns 1 point.

Skill in backgammon dominates as the square root of the match length increases. This relationship forms the basis of the Elo rating formula commonly used for backgammon. Longer matches also require more time and energy. Thus, longer matches are awarded more points than shorter matches.

Since Match Win Points vary with match length, main flight matches will typically be worth more than Consolation matches, which are typically worth more than Last Chance matches.

Some events may have two players face off in a best W of S series of L-point matches. Match Win points are awarded for each individual match won in the series. Thus, both players can receive points in such a contest. However, if the records of the contest only note the winner, but do not clearly indicate how many matches were won by each player in the series, then only the winner of the series will receive Match Win points by equating the series to a single match of length: $(L+1)*W$

For team events, players will receive match win points entirely based upon their match wins against other players, without regard to whether or not their team advanced in the tournament.

Mathematical analysis:

> Because the number of matches in an elimination tournament of size N is (N-1), the total number of Match Win Points awarded in an event is proportional to the number of players. Furthermore, the expected number of match win points per player will typically be proportional to the number of times a player must lose in order to be eliminated from the event.

# Rank Points

Players who win the event or advance far enough to finish in a position designated by the event organizer as a ranked finish position, whether ranked by number or by name (e.g. Consolation Semifinalist) receive bonus master points for their accomplishment.

For events where the event organizer has not specified which finish positions are ranked, the top 1/8 of the players who advanced the furthest in the event shall be considered as ranked finishers. In standard elimination brackets, these positions shall comprise all players advancing to whatever round that leaves the number of players remaining closest to 1/8 of the total number of players in the event. For example, a 110-player single elimination online event may produce a winner without specifically designating any other players as top finishers; in such an event, 110/8 = 13.75, so the 16 players who advanced to the round of 16 and beyond will receive rank points (13.75 being closer to 16 than to 8).

Ranks are numbered from 1..R, where R is the number of players that finish in ranked positions as designated by the director for the event. If players are exclusively assigned a final rank, they will receive the points for that rank. If players finish tied for rank with one or more other players, then those players will equally split the total points for the set of ranks that they have tied. For event formats having multiple flights such that elimination from a flight places a player into the next flight down, distance from first place is used to determine equivalence between finishers in different flights of the same event. Finishing within the same flight one round behind the flight winner has a distance of 1. Winning the next flight down also has a distance of 1 from the winner of the flight above. For example, a

3-flight event that awards ranks to the top 4 in the main flight, 2 in the Consolation flight and 1 in the Last Chance flight will rank the finishers as follows:

(1) Main winner

(2,3 split) Main finalist; Consolation winner

(4,5,6,7 split) Main semifinalists (2); Consolation finalist; Last Chance Winner

The number of Rank Points awarded is calculated as follows:

**Rank Points = 0.6 * Event Size Factor * Player's Rank Factor**

The formula has the property that the same number of Rank Points are awarded to the first-place finisher (or any other specific rank) in any two events of the same size.

The 0.6 factor is a fixed weight applied to Rank Points so that they may be added to Match Points to produce an overall total or aggregate having the desired balance between the two kinds of points.

For team events in which the entire team advances as a unit, no rank points will be awarded. For group events that are run as normal individual events, but with a separate score kept for the entire group, individuals will receive rank points based upon their own performance; the group result will not factor into the awarding of points.

## *Event Size Factor*

The Event Size Factor is the number of Rank Points awarded to the winner of the highest skill division. It is based upon the number of unique players that entered the event.

**Event Size Factor = Log2( Number of Players )**

| # Players (P) | Event Size Factor (Log2(P)) |
|---|---|
| 16 | 4 |
| 32 | 5 |
| 64 | 6 |
| 128 | 7 |
| 256 | 8 |

Mathematical analysis:

The expected number of rounds through which a player must advance to prevail over a field of size P in a standard elimination event is Log2(P). Thus, a tournament winner is awarded a bonus in proportion to the distance travelled. Since the Match Win Points earned by the winner grow at the same rate with number of players, this formula for Event Size Factor ensures that

neither Master Point type dominates over the other in any hybrid statistic that may be developed.

## *Rank Factor*

All players that finish in a ranked position receive bonus master points according to the rank of their finish, splitting the points for tied ranks as described above.   The Player's Rank Factor for the 1st place finisher = 1.  All other ranks are awarded points as a fraction of the points awarded to first place.

| Rank | Rank Factor |
|------|-------------|
| 1 | 1.0 |
| 2 | 0.7 |
| 3 or more | $1 / (R - 1)$ |

Alternatively:

| Rank | Rank Factor |
|------|-------------|
| 1 | 1.000 |
| 2 | 0.700 |
| 3 | 0.500 |
| 4 | 0.333 |
| 5 | 0.250 |
| 6 | 0.200 |
| 7 | 0.167 |
| 8 | 0.143 |
| 9 | 0.125 |
| 10 | 0.111 |

## Effective Dates for Master Points

For USBGF Online Circuit events: Match Points take effect immediately upon the recording of each match result; Rank points take effect upon the completion of the event (when the last match result is recorded). Any special recognition program that is based upon a calendar period may include partial results from some events; those matches that finished before the end of that calendar period will be included for that recognition program and those matches that finished after the end of that calendar period will be reflected in the next period's recognition program.

For live tournament events: Each event has a date of record.  All Master Points from a given event will take effect as of the date of record for that event regardless of when the results were entered into the system.

## Separation and Aggregation of Master Points

Separate Master Points statistics shall be maintained for Live and USBGF Online events.

Separate Master Points statistics shall be maintained for Match Points and Rank Points.  When it is necessary to aggregate these two types of points, the aggregate shall be calculated as:
**Match Points + Rank Points**

# Appendix A

## *Event Weights*

### USBGF National Live Events

Event types reflect Level assignments as of this writing.  Levels assignments may be changed and new event types will be assigned a Level as they are created from time to time.

| Event Level | Event Weight | Example Event Types |
|---|---|---|
| **Level 6** | 1.2 | USBGF National Championship |
| **Level 3** | 0.6 | USBGF Blitz |

### Non-USBGF National Live Events - Master Points Eligible

The following are the only non-USBGF National Live Events that are Master Points Eligible Events.  Level assignments are subject to change.  Additional Event Types may be designated as Master Points Eligible from time to time with advance notice.  This document contains the definitive list at any point in time.

| Event Level | Event Weight | Example Event Types |
|---|---|---|
| **Level 6** | 1.2 | ABT Major Jackpot (e.g. Masters, Limited) |
| **Level 5** | 1.0 | ABT Main Event |

### USBGF Online Events

Event types reflect Level assignments as of this writing.  Levels assignments may be changed and new event types will be assigned a Level as they are created from time to time.

| Event Level | Event Weight | Example Event Types |
|---|---|---|
| **Level 6** | 1.2 | National Championship; Federation Cup |
| **Level 5** | 1.0 | Nations Cup |
| **Level 4** | 0.8 | Team Tournaments; Tournament of Champions |
| **Level 3** | 0.6 | Circuit Monthly; Director's Cup; |
| **Level 2** | 0.4 | Divisional |
| **Level 1** | 0.2 | Collegiate; Membership Jackpot |
| **Level 0** | 0.0 | |