

Behind The Numbers Curl Coach Formula Reference

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Introduction

This document describes the formula's and algorithms that Curl Coach uses in generating the numbers in its various reports. These explanations are provided for transparency purposes only, but may allow coaches to understand any discrepancies between manually calculated values and those provided by Curl Coach.

Scope of Data

Curl Coach provides 3 primary "levels" of report – **Competition**, **Team** and **Player**. Each of these reports uses a different approach to scoping the data included in the report.

The **Competition** report sources data from all of the games included in a single competition. The **Game** report is the same as the Competition report, but includes only a single game.

The **Team** report sources data from every Game that a team has been to regardless of changes to the player line-up.

The **Player** report sources data from every shot in the database attributed to that player irrespective of what team they were playing on at the time. This report is intended to capture a player's entire career, or portions of it. This includes any shots where the player was charted as on the competition team.

Team and Player reports may also be filtered by dates based on user options (See Options/Reports in Curl Coach). Reports may only include shots from games after a specified date, before a specified date, or between two dates. In all cases the gameDate, which is set as the time of the first stone is used to determine whether a game's shots should be included.

Shot Scores

All shots for which a score has been recorded are included in the calculations, with the exception of "Throw Through" and "Not Thrown" shots which are excluded. Shot scores are taken "as is" without modification by shot difficulty, and have a range of 0 – 125 in 25% increments.

Game Performance Analysis

Game Performance includes a number of objective metrics culled from in game situations. The values are computed are based on the included games as follows:

- Shots For / Against is the total of points scored divided by the number of games.
- Ends Played is the count of all ends recorded.
- Successful forced ends is the
- Big ends is the count of ends where the team scored 3 or more stones.
- A forced end is any end where the opposition has hammer and scored only 1 stone.
- A stolen end is any end where the opposition has hammer and the team scored.
- Defending against steals is any end where the team has hammer and the opposition team did not score. This includes blanked ends.
- Hammer success is any end where the team has hammer and scores at least 1 stone.
- A team is “in control” of the game when it is leading by at least 1 stone with hammer, or leading by at least 2 stones without. In all other situations neither team is deemed to be “in control”. Shot Misses

Shots are considered misses (for various miss analysis) if a score was recorded and the recorded score is less than or equal to the “Record Miss For” value set in options at the time the report is generated. If this value is changed, the included shots for miss analysis will also change.

Bill’s Benchmarks

Bill’s Benchmarks are a set of 3 performance metrics that Bill Tschirhart, (<http://truenorthbill.blogspot.com/>) espouses. The three indicators are as follows:

Made After Miss

This metric counts the number of opposition misses for which your team has a follow on shot, and counts the number of times your team makes their shot. Miss and Make are defined using the “Miss for” stat that drives other aspects of miss analysis. Only shots with a score equal to or less than the “Miss for” value count as opposition misses. Only shots with a score greater than the “Miss for” value count as made shots. This metric can only be calculated if you are charting both your team and the opposition team.

Key Shot Average

This metric counts the key shots (by your team only) and sums the charted score for each shot, then presents the average. This metric can only be computed if you are tagging key shots while charting

In Tolerance

This metric counts the total number of shots for which Tolerance information was charted as well as the number of shots which were delivered inside the tolerance area, and shows it as a percentage. This metric is only shown if “Chart Tolerance” is enabled.

Shot Percentage Data

In all cases where Curl Coach displays shot making data (percentage data), Curl Coach categories the shots into Draws, Guards and Hits based on the same types used while charting, and accumulates the total score and number of shots recorded in each category. This is then presented as a simple percentage value (cumulative score divided by number of shots).

Shot Selection Data

For both Shot Selection all shots are analyzed and those with a recorded score are counted. The number of shots of each type as well and the cumulative shot scores of all shots are recorded and presented using simple percentage calculations.

Miss Response & Miss Analysis

The Miss Response analysis includes shots where the opposition shot has a recorded score and that score is equal to or less than the “Record Miss For” value set in options. Further there must be a responding shot (i.e. opposition hammer shots are never included as there is miss response possible).

For Miss Analysis the selection of applicable shots is the same, however a shot must also have recorded miss reason information in order to be included. The number for each miss type as well as each miss sub-type is counted and used to generate simple percentage results. Each miss type (i.e. Weight) is shown as a percentage of all shots that had a recorded miss, whereas the miss sub-type is shown as a percentage of all shots for the corresponding type.

Summing the reported percentages for miss type will not, in general add up to 100% as there may be more than one miss reason recorded for a shot (i.e. Outside and Heavy). The Miss sub-types should always add up to 100%.

Pace of Play Graphs

The Pace of Play report, current available only in the dashboard, is intended to help coaches analyze where their team is spending time and compare it to other teams that they have played against. Curl Coach captures the start time of each end based on when you record either the shot target or broom. It then captures the duration of each shot based on when you tap next. This timing is

approximate, but **on the average** a correct indication of the time spent for each stone. The analysis includes 4 charts.

The first chart is a pie chart that shows the proportion of time spent by your team vs. your opposition teams. Values for a single game should be treated with care, however, averaged over a number of games this will indicate how your teams overall pace compares to other teams. If the number is 50% or less, then you likely have no pace of play issues to address. Numbers over 50% are a concern as they indicate that your team is, on average, slower than the teams they play against.

The next two pie charts show the teams time budget position by position. It is not expected that this be split evenly between each position, but this will give you an idea of where your team is spending its time. When compared to the same chart for the opposition, you can get a sense of whether your team is typical in this regard. An concrete (hypothetical) example of this might be if your team is spending 15% of its time with lead stones, while the average opposition is spending only 10%, your team might need to spend some time defining their “opening moves”, the automatic response to specific game situations. Saving time here will give you skip more time on those more “thinky” late in the end shots.

The final graph is a bar chart that shows the average time broken down by shot number, here you can see a higher detail version of the team’s time budget to isolate if you are spending a lot of time on (for example) your 3rd’s second stone vs. their first.

All of this report uses relative times and comparisons to averages in order to “smooth out” any charting irregularities. Please keep in mind that this is intended to show trends, and as such the more games you average over, the more accurate the information will be.

In-Out and Out-In Analysis

The Inside-out, outside in analysis uses the broom position and rock motion to determine whether a specific shot is being thrown from the center out, or from the outside towards the center. In cases of negative ice, or incorrect handle it is possible for Curl Coach to mis-categorize a shot, however the occurrence of this should be rare.

Curl Coach treats any shot where the broom is placed within 2 ft of the center line (broom is in the 4 ft) is being thrown “Inside-Out”. When the broom is outside the 2-ft, if the stone finishes further out and on the same side as the broom, that is also an “Inside-Out” shot. If however the stone finishes closer to the center line or

on the other side of center from the broom, then the shot is “Outside-In”. Only the initial path of the stone is considered, any subsequent motion due to a hop and roll is ignored.

Tolerance Analysis

Tolerance Analysis includes all shots thrown by the team (not the opposition) that include a Tolerance area as part of the charted information.