

## FRC Standard District Points Ranking System Summary - 2015

### Summary

FRC Teams will accumulate points at the first two District events they attend (chronologically) within their District, as well as at the District Championship. Teams will not earn any points at subsequent or out-of-District events, nor at any Regional events they attend during the 2015 season.

With the exception of the Michigan District Championship, points earned at District Championships will be multiplied by three and then added to points earned at District events, to determine the final season points total for the Team. Because of the size of the Michigan District Championship in 2015, a modified points system, not yet finalized, will be used to award points there. However, the points earned there will still be added to the points earned at District events to determine the season total.

Points will be awarded to Teams as follows:

Point Category	Points
<b>Qualifying Rounds</b>	
Qualification Round Performance	$\text{QualificationPoints}(R, N, \alpha) = \left\lceil \text{InvERF}\left(\frac{N - 2R + 2}{\alpha N}\right) \left( \frac{10}{\text{InvERF}\left(\frac{1}{\alpha}\right)} \right) + 12 \right\rceil$ <p>(For typically-sized district events, this will result in a minimum of 4 points being awarded for qualification round performance. For events of all sizes, a maximum of 22 points will be awarded)</p>
<b>Alliance Selection Results After Alliance Selection is Complete</b>	
Alliance Captains	Equal to 17 minus the Alliance Captain Number [e.g. 14 points for Alliance #3 Captain]
Draft Order Acceptance	Equal to 17 minus the Draft Order Acceptance Number [e.g. 12 points for the Team that is 5 <sup>th</sup> to accept an offer of Alliance]
<b>Playoff Round Performance</b>	
Teams on Alliances Advancing Playoff Level [e.g. An Alliance advancing from Quarterfinals to Semifinals]	Points awarded based on team participation in individual playoff rounds, and whether or not the alliance advances. See details below.
<b>Awards</b>	
Judged Team Awards	10 Points for Chairman's Award 8 Points each for Engineering Inspiration and Rookie All Star Awards 5 Points each for all other judged Team awards

<b>Team Age</b>	
Team Age	10 Points for Rookie Teams 5 Points for second-year Teams

### **Notes on Points Categories**

#### **Qualification Round Performance**

*This attribute measures the individual match performance of a Team.*

Because the 2015 game is not a “win, loss, tie” game, the calculation of Qualification performance points is done using the equation (an inverse error function) on the previous page. The equation utilizes the following variables:

R – the qualification rank of the team at the event (as reported by FMS)

N – the number of FRC Teams participating in the Qualification rounds at the event

Alpha ( $\alpha$ ) – a static value (1.07) used to standardize the distribution of points at events

#### **Alliance Selection Results**

*This attribute measures both individual Team qualification round seeding performance and recognition by peers.*

Alliance Captains are recognized based on their qualification round seeding rank. This rank is a result of the rules for each game, which incorporate more attributes than simply the average score. There may be several Teams with identical or similar average scores at an event, but FRC games are typically set up to eliminate the chance of ties with regards to Team ranking.

Non-Alliance Captains are rewarded based on peer recognition. To be invited to join an Alliance, a Team’s peers have decided that the Team has attributes that are desirable. Giving points for Alliance selection also supports come-from-behind Teams. A Team taking several matches to optimize their performance may be recognized as a late bloomer by a top seeded Team, even if that performance isn’t reflected in the rankings because of poor performance in early matches. These points also have the potential to recognize Teams employing a minority strategy with their robot. Teams with unique or divergent robot capabilities that complement the strengths of other alliance members may be selected to fill a strategic niche.

Note also that Alliance Captains are given the same number of points as the Team drafted in the same sequence. For example, the third Alliance Captain gets the same number of points as the third draft. Numerical analysis supports the idea that Alliance Captains are about as strong in robot performance as equivalently drafted Teams. As an additional minor benefit, awarding the same points for Alliance Captains and equivalent drafts lubricates the acceptance of draft offers between Alliance Captains, which gives Teams out of the top eight the chance to experience being Alliance Captains themselves.

#### **Playoff Round Performance**

*This attribute measures Team performance as part of an Alliance.*

In Quarterfinals, with 2 matches being played by each alliance in Recycle Rush, each team on an alliance earns 5 points for each match they participated in, and only if the alliance advances. In the unlikely event that more than 2 matches need to be played, each team can still only earn a maximum of 10 points, regardless of the number of

matches they participated in.

In Semifinals, with 3 matches being played by each alliance in Recycle Rush, each team on an alliance earns 3.3 points for every match they participated in, and only if the alliance advances to the final rounds. All points earned are rounded up to the next highest whole number. In the unlikely event that more than 3 matches need to be played, each team can still only earn a maximum of 10 points, regardless of the number of matches they participated in.

In Finals, as these are played in the traditional Win-Loss-Tie, best 2 out of 3 format, teams on the winning alliance receive 5 points for every match they participated in which they won.

## **Awards**

*This attribute measures Team performance with respect to judged Team awards.*

The points earned for Team awards in this system are not intended to capture the full value of the award to the Team winning the award, or to represent the full value of the award to *FIRST*. In many ways, the Team's experience in winning awards, especially the Chairman's Award, the Engineering Inspiration Award, and the Rookie All Star Award, is beyond measure, and could not be fully captured in its entirety by any points-based system. Points are being assigned to awards in this system only to help Teams recognize that *FIRST* continues to be more than 'just about the robot', with the emphasis on our cultural awards, and to assist in elevating award-winning Teams above non-award winning Teams in the ranking system.

Chairman's Award winning Teams at the District event level get automatic byes to the District Championship, where they will compete both with their robots and for the District Championship Chairman's Awards. Winning a District Championship Chairman's Award will earn the Team a slot at the *FIRST* Championship regardless of their final rank in their district.

Engineering Inspiration and Rookie All-Star Award winners at the District event level will compete at the District Championship level for those specific awards, even if they do not rank high enough to compete with their robots. Winning one of these awards at the District Championship will also earn them a slot at the *FIRST* Championship (with their Robot) regardless of their final rank in their Districts.

Note that Teams only get points for judged Team awards. If an award is not judged, for example, Rookie Highest Seed, or is not for a Team, for example, the Dean's List Award, no points are earned.

## **Team Age**

*This attribute recognizes the difficulty in being a Rookie or second year Team*

Extra points are awarded to Rookie and second year Teams in recognition of the special challenges Teams face in those early years, and to increase the chance that they will make it to the District Championship to compete with their robots. Like our dedicated Rookie awards, these additional points are intended to recognize and motivate newer participants in FRC. These points are awarded once at the beginning of the season. Rookie year is calculated off of the year in which *FIRST* recognizes the Team as a Rookie.

## **Additional Notes**

- **Third / Out-of District Event Participation**

District Teams participating in three or more home District events during the season, or at any events outside of their home District, do not earn points for their actions at those events. The first two events attended inside their home District, chronologically, will be used for District point calculations. Teams will still be eligible for awards at those later events, and any benefits that go along with winning those awards, if the event is in their home District.

- **Regional Participation**

District Teams do not earn points for their actions at any Regionals they may attend, but are still eligible for Team awards at those events, and any benefits that may go along with winning those awards, such as earning their way to the *FIRST* Championship. However, if a District Team does earn a slot at the *FIRST* Championship while attending a Regional event, that slot does count against the total Championship allocation the District is receiving for the season and does not generate a Wildcard position at the Regional.

- **Multiple Awards**

District Teams will only be able to win FRC's most prestigious awards – Chairman's Award, Engineering Inspiration Award, and Rookie All Star Award – once per season at the District level. This supports the broader distribution of those awards.

- **Ties**

Teams earning the same points in this system will be sorted in rank using this hierarchy:

- 1<sup>st</sup> Order Sort: Total Playoff Round Performance Points
- 2<sup>nd</sup> Order Sort: Best Playoff Round Finish at a single event
- 3<sup>rd</sup> Order Sort: Total Alliance Selection Results Points
- 4<sup>th</sup> Order Sort: Highest Qualification Round Seed or Draft Order Acceptance (i.e. Highest Alliance Selection points at a single event)
- 5<sup>th</sup> Order Sort: Total Qualification Round Performance Points
- 6<sup>th</sup> Order Sort: Highest Individual Match Score
- 7<sup>th</sup> Order Sort: Second Highest Individual Match Score
- 8<sup>th</sup> Order Sort: Third Highest Individual Match Score
- 9<sup>th</sup> Order Sort: Random Selection