

What's Wrong With the Save?

In order to explain our statistic, the Save 2.0, the save and blown save must first be explained. According to the Official MLB Rules,

“A save is awarded to the relief pitcher who finishes a game for the winning team, under certain circumstances. A pitcher cannot receive a save and a win in the same game. A relief pitcher recording a save must preserve his team's lead while doing one of the following:

1. Enter the game with a lead of no more than three runs and pitch at least one inning.
2. Enter the game with the tying run in the on-deck circle, at the plate or on the bases.
3. Pitch at least three innings.”¹

Essentially, a pitcher must come into a save situation and finish the game where his team won. We felt that this statistic does not accurately represent a player's ability to actually complete a save. This is simply because there are thousands of different save situations, all with varying difficulty. For example, with the current system (a save), a pitcher who comes into the game in the ninth inning up three runs gets the same reward as a pitcher who enters the game in the seventh inning when he is only winning by one run. Clearly the pitcher who was brought in during the ninth inning completed a much easier save. We wanted to create a statistic that accurately awarded a pitcher based on the difficulty of the save he completed or blew, which now brings us to the blown save.

According to the MLB rules, “A blown save occurs when a relief pitcher enters a game in a save situation, but allows the tying run to score. The run does not have to be charged to that pitcher. If a reliever enters with a man already on third base, and he allows that runner to score the tying run, he is charged with a blown save.”¹ The same problem occurs with this statistic. A player who blows a difficult save is penalized just as much as someone who blew an easier save. The solution to both of these problems is the Save 2.0 statistic.

The Save 2.0

The Save 2.0 solves the problems described above by incorporating a point system that directly corresponds to the difficulty of the save. Simply put, pitchers are awarded points for making a save and deducted points for blowing a save. This creates a system where pitchers are awarded heavily for difficult saves and awarded only slightly for easy saves. We decided that since so many pitchers were making saves in the ninth inning with no runners on base (95% and above success rate) that those were saves professional baseball players should be heavily rewarded for. However, once the inning number dropped to seven and 8 the made percentage went below 50%, even all the way down to 8%. The Save 2.0 point values are decided based on

¹ "What Is a Save (SV)? | Glossary." Major League Baseball. Accessed May 06, 2018.
<http://m.mlb.com/glossary/standard-stats/save>.

the save situation and the difficulty of that save situation. In our statistic, a save situation has four attributes: inning, runs up, baserunners, and innings pitched. We identified every single save situation between the years of 2010 and 2014. For each save situation, we calculated what percent of the time that save was made. For a good deal of the situations there were only 1 or 2 data points, so in order to assign a point value to these we found the closes save situation with a point value and gave it that point value.

To determine the point values we used the equation:

$$\frac{1}{SaveMadePercentage}$$

We derived this equation from the fact that our hardest save situation had a success rate of 8% and our easiest save situation had a success rate of 99%, which is a about 10 times easier. We therefore decided on a point scale of 1 to 10. To account for a blown save we subtract:

$$- \frac{.25}{1 - SaveMadePercentage}$$

This equation comes from the idea that a pitcher should be deducted points based on the probability that the save is blown, hence $1 - SavePercentage$. At this point, each relief pitcher now has a yearly Save 2.0 total point value that represents how effective he was at saving the game in a given year.

We designed this statistic so that blowing an easy save will really cost a pitcher and making a difficult save will greatly reward a pitcher. If a team wants to evaluate a relief pitcher, instead of simply looking at how many saves they have made or blown, they can look at a total point value alongside made and blown saves to determine their actual save effectiveness.

What Is the Save 2.0 Similar To?

Our statistic is not similar to any other known statistics except the save. There don't seem to be any other statistics that are based directly on a point system. Our statistic is obviously similar to the save because it uses the definition of a save to calculate its point values. However, there seem to be a few disadvantages to using a point system. One of those disadvantages is the fact that our statistic does not provide a way to evaluate a pitcher's performance in a specific save situation. This would be extremely helpful for teams because they could decide who to put in the game based on the situation and their pitcher's respective performances. Another disadvantage of our statistic, which relates to the previous disadvantage, is the fact that one cannot see the spread of situations that a pitcher had to deal with in a season. A point value does not necessarily tell much about what situations the player dealt with. For example, our statistic begs the question, who is better, a pitcher who makes a great deal of easy saves or a pitcher who makes a great deal of hard saves and blows a great deal of easy saves?

Conclusion

All in all, we think our Save 2.0 statistic accurately solves the problems of the save and blown save statistic. It adds a needed specificity to the statistic that will allow MLB teams to

more accurately evaluate their relief pitchers. The save and blown save statistics lacked the situational aspect. They both needed to be taken a step further to make sure pitchers were being accurately rewarded or penalized.