It's Called Baseball, Not Hitball

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Ever since Henry Chadwick invented the box score in 1859, baseball fanatics have interpreted hundreds of statistics to evaluate ballplayers' offensive value. Most hitters are evaluated by the number of hits they get. But batting average, slugging percentage, and other hit-based statistics are not the best way to evaluate a batter's offensive value.

The best way to evaluate a baseball hitter's offensive value is through Barry Codell's statistic BPO (bases per outs). BPO is calculated by dividing the number bases a hitter achieves by the number of outs he contributes to. The more bases a player contributes (with the fewest outs), the higher the BPO-- and the more the he has done to increase the chances of a win.

A winning team needs to score more runs than its opponent, so it needs to obtain more bases. The team with the most bases has an 81.8 percent chance of a win, so a hitter's job is to obtain the maximum number of bases with the least number of outs.

A hitter can get on base by getting a hit, by walking, by getting hit with a pitch, or by reaching base on an error. Any one of these circumstances is favorable to the hitting team, because it moves the team one (or more) bases along. With every base gained, a team's chances of scoring a run increases by .398 percent.

Other ways a hitter can add to his base total are: getting an extra-base hit, stealing a base, and producing a sacrifice hit. A home run accounts for four bases; a triple, three; a double, two. A stolen base moves the runner one base. Although a sacrifice produces an out, it also advances the baserunner(s), and therefore is a positive offensive event.

A player's number of bases is then divided by his number of outs. Every at-bat in which the batter does not reach base is an out. Other ways a player can make outs are by hitting into a double play (two outs are charged to the hitter), or by being caught stealing (one out).

Batting average is a very misleading stat because it judges the batter's pure hitting skill, not his real offensive value to the team. It does not matter whether a player reaches base on a hit or on an error. All that matters to a team is that it scores more runs than its opponent. Batting average only credits hits. It does not credit walks or hit-by-pitches as at-bats, and it even deducts points if a hitter reaches base on an error.

Other popular stats do not display a hitter's true value either. Slugging percentage divides a player's total bases by his at-bats. It has the same flaw that batting average has-- it does not credit base on balls or hit-by-pitches, and it deducts points for reaching base on errors. On-base percentage has the opposite defects that slugging percentage has. While it does credit walks and hit-by-pitches, it only gives one point for extra-base hits.

One of the first people to value bases and not just hits was Billy Beane. As the General Manager of the Oakland Athletics, Beane had a small budget. When three of his star players left on free agency, he needed to replace them inexpensively. Instead of the traditionally-used batting average, he used on-base percentage as the basis of his new lineup. His theory worked and that year, 2002, the Athletics set a new all-time record for consecutive wins.

Beane's success became a turning point in baseball. A popular book and later movie, *Moneyball,* explained his approach. Soon other professional clubs, including the 2004 World Series-winning Red Sox, started applying Beane's principles to their teams.

Although Beane's tactic was successful, it did not capture the hitter's complete value. It did not take into account how many bases a player obtained, only whether or not he reached base. He invested in Miguel Tejada who won the American League MVP that year. However, Tejada

only had an .816 BPO, while sixteen other players had BPO's over 1.000. Beane could have found more value in a player like Brian Giles.

Giles played for the Pirates in the early 2000's. He didn't make the all-star game in 2002, but he came in second in BPO with a remarkable 1.273 only behind Barry Bonds, whose 2.061 BPO was the second best in the modern era of baseball. Giles was overlooked because his team went 72-89 in the midst of a 20-year losing streak. Giles's BPO of 1.273 easily surpassed Tejada's .816. Beane could have probably acquired Giles for a few prospects during the Pirates' rebuilding phase.

Another person who focuses on bases and not hits is G. Scott Thomas. Thomas invented a series of stats centered around bases. Arguably his most influential stat is base value (BV), which takes the bases-per-outs statistic to a whole other level. He compares the hitter's total bases-per-outs with his home field's and league's average bases-per-outs. He gives the following equation to calculate his BV statistic: BV= Bases – (League bases-per-out x outs x Ball park factor).

This stat is extremely influential, because it gives a true representation of a hitter's value. A player in a hitter-friendly ballpark such as the Colorado Rockies' Coors Field will naturally hit better than if he played in a pitcher-friendly park such as the San Diego Padres' Petco Park. BV takes this into consideration. In 2016, while playing for Colorado, DJ LeMahieu had the eleventh best BPO in the league, but his BV was 21st in the league when it stripped him of his home-field advantage.

BPO ties directly with a statement made by Doug Melvin, the former General Manager of the Brewers and Rangers: "You can't win the game without moving the pieces on the board. It's all

about capturing bases." Melvin's observation was correct; the team with the most bases has an 81.8 percent chance of winning. In contrast, the team with the most hits has only a 71.1 percent chance.

Why is it, then, that baseball fans focus on hits so much? After all, it's called baseball, not hitball.

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