

Putting a Microscope on MLB Pitchers Using the ADI and the VMI

by Clifton Neeley www.baseballvmi.com

Since we can divide MLB data into performance categories that show how much ball movement the pitcher had purely from the makeup of the air, we can see the pitcher's performance against the ADI. We can also see the hitter's performance when the ball is moving more and when the hitter is not used to the movement vs when he is comfortable in the climate. It gets very intriguing when we include different types of pitches within that same grid. You can do a similar study on the pitcher and hitter stats on our website, but you may glean some good information from our study on the "Pitch-Mix."

"Reverse Pitcher"

If you note that the pitcher your hitting team or player is matched up against (in today's or tomorrow's game) is prone to throwing a high number of two-seamers, then he will be more successful against a High Plus VMI team than a High Minus VMI team with that pitch. We, at Baseball VMI, have identified a pitcher who throws more 2-seamers than 20% of his pitches as a "Reverse" pitcher. A Reverse pitcher is one who throws a downward breaking Two-Seamer, Sinker, or Cut Fastball above 90 mph as one of his primary two pitches. So, a High Plus team will be more successful against a Tight Pitcher and a High Minus team will be more successful against a Reverse Pitcher.

While a manager cannot change starting pitchers due to a VMI match-up, a "Reverse Pitcher" should not be called upon as a reliever for a team that sports a High Minus VMI. "When" is crucial to a pitcher's success. If you look at the production rate of pitchers when the VMI is high negative in our database, you will see the hit percent elevated on both the two-seamer and the sinker. This is a direct result of the distance a hitter must reach as he adjusts to hit the downward angling two-seam and sinker (both reverse pitches) in the high velocity ranges when he has set up for the four-seamer. If the hitter happened to guess right and was expecting a sinker, for example, then he would have a higher hit rate, but that is an inconsistent way to play baseball and players know better than to try to out-guess the pitcher very often.

Change-Up - Used (10%) League Wide

Average Hit/Strike Rate for 2016 = 9.98%

The change-up is obviously an off-speed pitch which is a timing nightmare for the hitter. It is generally more effective when the high velocity pitches are being hit hardest. However, the air resistance on such a slow pitch does not appear to be a factor in its effectiveness, except that which makes the fastball more or less effective.

Curveball - Used (11%) League Wide

Average Hit/Strike Rate for 2016 = 8.08%

In heavier air qualities in the MLB, the curveball gets a lot of movement and the slower speeds tend to get greater movement yet. This is because the air can push the baseball in the direction of the curve more quickly in its path toward the plate. Once the air begins the push, each segment of distance adds additional push, ending with a greater angle off its straight path. In lighter air qualities, such as Colorado in Coors Field, or Kansas City in the heat of the summer, the curveball will travel further before the air begins pushing the ball in the direction of the spin. This creates a later breaking and lesser breaking curveball, and the data shows it is overall less effective than in heavier air.

Knuckle Curve (Included in Curve Data - used about 1%)

The knuckle curve is a pitch which essentially is designed to cause the hitter to mis-identify it in the first few feet of travel. It is thrown overhand like the other pitches and, of course, in the same arm angle as are the other pitches. However, the pitch is thrown with the fingertips pushing over the top of the ball to create forward spin in a four-seam configuration as opposed to the backward spin of the four-seamer. It is difficult to identify early, because the spinning four seams create a similar visual to the 4-seamer. Its action is a late breaking dropping action at the end of the travel near the strike zone. Although late breaking, the hitter must use a similar form to hit it as he uses in hitting the downward breaking curveball. Therefore, we have not created a separate data category for the knuckle curve within our air density categories as of this time.

The next article will focus on the Sinker and the Cutter which can be part of the "Loose Pitcher's" repertoire.

Visual Memory by Clifton Neeley, creator of the Visual Memory Index© and author of the web-site www.baseballvmi.com. Clifton pitched and played baseball and fast-pitch softball in the mountainous southwest Colorado area from 4,000 feet in Grand Junction to 6,000 feet in Durango to 9,000 feet in Telluride prior to his college experience in baseball.