Visual Memory Index really means……?

by Clifton Neeley of www.baseballVMI.com

On www.baseballvmi.com we have recently introduced sortable stats so that you can query our database to see how your players and the top 50 have performed within the various ranges of air density and resulting VMI. You can go directly to the stats at http://www.baseballvmi.com/mlb-top-50 You do not need a membership to query the database. The database is current by noon the day after each game.

How can we identify where the hitter's swing is focused? There are two human physical movement concepts we are depending on to be true. The first is that Muscle Memory conforms to repetitive physical movement as physiologists have determined and observation and experience has verified. In other words, practice makes perfect, or permanent. The second is that purposeful physical reaction to visual stimulation is based on memory of most recent experience; which has been a long-held training concept. This concept is what pilot simulator training is based upon and as far as we know, it is the best training available where live experience is too costly or dangerous.

Hitting the four-seam fastball has long been held to be the most difficult task in sports. Since the upward and tail-off movement on the four-seamer is allowed by the air resistance, then if we track the air resistance to which a player has been most recently exposed, we can anticipate his probable reaction to today's movement by comparing the forecast air resistance.

Below is a chart which shows how the index identifies where the movement on a 95 mph four-seamer will be in relation to the player's recent experience. Although the movement is based on the air density, the index is based on the players' past exposure to todays or even tomorrows forecast. Forecasting has become better in recent years, but the VMI attempts to anticipate no more than two days.

WHAT Visual Memory Index MEANS TO 4-SEAM FASTBALL					
Plus VMI Range (Hitting Top Half of Ball)			**Minus** VMI Range (Hitting Bottom Half of Ball)		
0.00 thru 5.00	=	0" to 1/2" above center of ball	**- 0.00 thru - 5.00**	=	0" to 1/2" below center of ball
5.00 thru 10.00	=	1/2" to 1" above center of ball	**- 5.00 thru -10.00**	=	1/2" to 1" below center of ball
10.00 thru 15.00	=	1" to 2" above center of ball	**-10.00 thru -15.00**	=	1" to 2" below center of ball
15.00 thru 20.00	=	2" to 3" above center of ball	**-15.00 thru -20.00**	=	2" to 3" below center of ball
20.00 thru 25.00	=	3" to 3-1/2" above center of ball	**-20.00 thru -25.00**	=	3" to 3-1/2" below center of ball
25.00 thru 30.00	=	4" above center of ball	**-25.00 thru -30.00**	=	4" below center of ball

Teams tend to react similarly to each other to the exposure differentials. Why? Because the players are human. Through the end of June of 2015, below is a chart of how all the teams in MLB have reacted to the four-seam fastball at all the varied speeds. Yes, speed is important too; one inch of lift is created by

an additional 5 mph in speed at typical MLB speeds. Season after season, the general reaction to these VMI categories is extremely similar and the only thing we are tracking is what the air density does to the pitch.

Pitch vs. VMI

Date: 2015 (ex. *2014* or *2014-09* or *2014-09-05*)
Team: All
Venue: Both
Pitch: Four Seam Fastball
VMI Interval: 3.00

submit

(Hitter Above Center)

VMI Range	Pitches	Strikes	Hits	Percent
0.00 thru 2.99	42768	27731	2509	9.05
3.00 thru 5.99	13428	8731	836	9.58
6.00 thru 8.99	3566	2296	188	8.19
9.00 thru 11.99	951	621	55	8.86
12.00 thru 14.99	593	391	36	9.21
15.00 thru 17.99	482	320	41	12.81
18.00 thru 20.99	142	93	11	11.83
21.00 thru 23.99	289	183	27	14.75
24.00 thru 26.99	76	53	7	13.21
27.00 thru 29.99				
Total	62295	40419	3710	9.18

(Hitter Below Center)

VMI Range	Pitches	Strikes	Hits	Percent
- 0.00 thru - 2.99	35624	23278	2030	8.72
- 3.00 thru - 5.99	13255	8714	693	7.95
- 6.00 thru - 8.99	4308	2878	234	8.13
- 9.00 thru -11.99	1113	749	66	8.81
-12.00 thru -14.99	667	465	32	6.88
-15.00 thru -17.99	306	196	15	7.65
-18.00 thru -20.99	266	177	19	10.73
-21.00 thru -23.99	112	74	4	5.41
-24.00 thru -26.99				
-27.00 thru -29.99	22	19	2	10.53
Total	55673	36550	3095	8.47

Total Pitches: 117530 Total Strikes: 76688 Total Hits: 6772 Total Percent: 8.83

NOTE: 438 pitches of exactly 0.00 VMI are shown in both + and - VMI columns.

Colorado is the only MLB franchise which has substantial exposure to all or most of these VMI ranges. Below is that teams' production within those ranges by mid-season in 2015.

Pitch vs. VMI

Date: 2015 (ex. *2014* or *2014-09* or *2014-09-05*)
Team: Colorado
Venue: Both
Pitch: Four Seam Fastball
VMI Interval: 3.00

submit

(Hitter Above Center)

VMI Range	Pitches	Strikes	Hits	Percent
0.00 thru 2.99	831	542	44	8.12
3.00 thru 5.99	287	181	17	9.39
6.00 thru 8.99	181	126	11	8.73
9.00 thru 11.99	151	102	10	9.80
12.00 thru 14.99	309	201	15	7.46
15.00 thru 17.99	141	99	12	12.12
18.00 thru 20.99				
21.00 thru 23.99	107	70	14	20.00
24.00 thru 26.99				
27.00 thru 29.99				
Total	2007	1321	123	9.31

(Hitter Below Center)

VMI Range	Pitches	Strikes	Hits	Percent
- 0.00 thru - 2.99	653	427	34	7.96
- 3.00 thru - 5.99	605	412	31	7.52
- 6.00 thru - 8.99	198	131	11	8.40
- 9.00 thru -11.99	198	135	6	4.44
-12.00 thru -14.99	127	94	9	9.57
-15.00 thru -17.99	82	41	2	4.88
-18.00 thru -20.99	93	64	4	6.25
-21.00 thru -23.99	2	2	0	0.00
-24.00 thru -26.99				
-27.00 thru -29.99	22	19	2	10.53
Total	1980	1325	99	7.47

Total Pitches: 3915 Total Strikes: 2603 Total Hits: 220 Total Percent: 8.45

NOTE: 72 pitches of exactly 0.00 VMI are shown in both + and - VMI columns.

The San Francisco Giants is another team which has played within many of these ranges of VMI, just not as often as Colorado. Below is how that team has performed within each, half way into the 2015 season.

Pitch vs. VMI

Date: 2015 (ex. *2014* or *2014-09* or *2014-09-05*)
Team: San Francisco
Venue: Both
Pitch: Four Seam Fastball
VMI Interval: 3.00

submit

(Hitter Above Center)

VMI Range	Pitches	Strikes	Hits	Percent
0.00 thru 2.99	921	582	65	11.17
3.00 thru 5.99	503	317	38	11.99
6.00 thru 8.99	116	79	5	6.33
9.00 thru 11.99				
12.00 thru 14.99	46	35	4	11.43
15.00 thru 17.99	64	39	3	7.69
18.00 thru 20.99				
21.00 thru 23.99				
24.00 thru 26.99	76	53	7	13.21
27.00 thru 29.99				
Total	1726	1105	122	11.04

(Hitter Below Center)

VMI Range	Pitches	Strikes	Hits	Percent
- 0.00 thru - 2.99	1110	733	67	9.14
- 3.00 thru - 5.99	472	321	25	7.79
- 6.00 thru - 8.99	222	151	9	5.96
- 9.00 thru -11.99	63	39	7	17.95
-12.00 thru -14.99	83	52	3	5.77
-15.00 thru -17.99				
-18.00 thru -20.99				
-21.00 thru -23.99				
-24.00 thru -26.99				
-27.00 thru -29.99				
Total	1950	1296	111	8.56

Total Pitches: 3676 Total Strikes: 2401 Total Hits: 233 Total Percent: 9.70

WHAT Visual Memory Index MEANS TO THE 4-SEAM FASTBALL

Plus VMI Range (Hitting Top Half of Ball)			**Minus** VMI Range (Hitting Bottom Half of Ball)		
0.00 thru 5.00	=	0" to 1/2" above center of ball = Where Parity Resides	**- 0.00 thru - 5.00**	=	0" to 1/2" below center of ball= Hitters at Full Focus
5.00 thru 10.00	=	1/2" to 1" above center of ball = Lots of Scoring/Pitcher Beware	**- 5.00 thru -10.00**	=	1/2" to 1" below center of ball= Better Be Good at Small-Ball
10.00 thru 15.00	=	1" to 2" above center of ball = Ground Ball Mecca	**-10.00 thru -15.00**	=	1" to 2" below center of ball = Pitchers Love Four-Seamers
15.00 thru 20.00	=	2" to 3" above center of ball = Effective Two Seamers	**-15.00 thru -20.00**	=	2" to 3" below center of ball = Popups Galore / Dangerous Sinker
20.00 thru 25.00	=	3" to 3-1/2" above center of ball= Coors Field Game 2	**-20.00 thru -25.00**	=	3" to 3-1/2" below center of ball = Visitors Say Goodbye to Coors
25.00 thru 30.00	=	4" above center of ball = Coors Field Game 1	**-25.00 thru -30.00**	=	4" below center of ball = Colorado Rockies Hit Road

DOWNWARD ACTION ON PITCHES IS MORE OR LESS EXTREME AS WELL

Most of MLB plays in the 0.00 to 10.00 ranges of both the Plus and the Minus VMI. Atlanta, Arizona, Texas, Kansas City and Colorado plus the visitors to these venues, venture into and out of the higher ranges of the VMI. Parity in MLB exists only below 10.00 plus and minus VMI.

The VMI is only an ad on to the traditional analysis of MLB players. As you attempt to figure out how the air resistance affects your selected players and teams, please feel free to contact us at baseballvmi.com

Many thanks to Dave Hall at Daily Baseball Data who has allowed us to share this topic with his viewers.

Visual Memory by Clifton Neeley, creator of the Visual Memory Index© and author of ***Baseball Unraveled*** and the web-site www.baseballvmi.com. Clifton pitched and played baseball and also men's 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.