

**HITTING DIFFERENTIAL:
PURE STATISTIC FOR PURE HITTING**

by Barry F. Codell

The term "pure hitter" has been bandied about by baseball's bards ever since Shoeless Joe Jackson broke the .400 barrier in his rookie year of 1911.

The snapping wrists of Henry Aaron and Ernie Banks, the "world as strike zone" forays of Yogi Berra and Roberto Clemente, the sweet swings of Ted Williams and Billy Williams, and the "hitting out of the catcher's glove" approach of Joe DiMaggio and Tony Oliva show differing styles of natural "pure hitting" with similar successful results.

Perhaps more than by example or definition, "pure hitting" may now use one statistic to identify those players who were "born to hit"--an inescapable number that accounts for all that earnest swinging stemming from the batter's box.

Our aspiring figure is called the Hitting Differential (HD), and its stark simplicity surprises and informs at once. It combines the strengths and eliminates the weaknesses of the two traditional measurements, the batting and slugging averages, and creates an ultimate index of pure hitting.

The explanation for its existence is elementary. The batting average tells how often a player hits, but neglects total bases hitting. The slugging average notes how many

total bases hitting but neglects how often a player hits! And there they have stood, seemingly irreconcilable, while diamond watchers have tried to rate their favorite batsmen. If only the two could be logically combined....

The Hitting Differential declares they can be, indeed they should be! The key in the alchemy is the simple step of using the reciprocal of the batting average, the out average. A .300 hitter, as a Mr. Musial was fond of reminding himself, is making 7 outs per 10 at bats. His reversed batting average, i.e., out average, is obviously .700. When placed next to a slugging average of .600, a .300 batting average would produce a -.100 Hitting Differential. (No need for even a calculator here, fans!) The HD is saying in this case that each at bat creates .7 of an out and .6 of a base, or 700 outs and 600 bases per 1,000 at bats; quite an acceptable pace, as our survey will show.

Since with each swing of the bat a hitter tries to avoid outs while accumulating bases (the sole alternatives that bat-swinging encounters), the HD may be the essence of hitting statistics, speaking purely to hitting, and not to the walking and running which complete offensive production.

Baseball's history shows that the one and only Babe Ruth is indeed the one and only batter who has ever had a career HD on the positive side, accumulating therefore a higher slugging average than out average. The facts show why the beloved Babe stands alone:

$$\frac{\text{OA}}{.658} \quad \frac{\text{SA}}{.690} \quad = \quad \frac{\text{HD}}{+.032}$$

Ruth also holds the regular season high of +.224 in 1921 (+.222 in 1920) and compiled a positive HD 11 times during his singular career. All-time recordbreakers in many departments, such as Rose, Cobb and Aaron, have never accomplished this feat once! And, in this toughest of tests, only George Brett has registered positive for a full campaign during the past two decades!

Following are the charts for star-gazers. So easily derived yet so complete, the Hitting Differential may be, among all the numbers, the biggest hit of all!

Single Season Highs of
Players with at Least One +.050 HD Season

<u>Player</u>	<u>Year</u>	<u>OA</u>	<u>SA</u>	<u>HD</u>	<u>Career</u>		
					<u>OA</u>	<u>SA</u>	<u>HD</u>
B. Ruth	1921	.622	.846	+.224	.658	.690	+.032
R. Hornsby	1925	.597	.756	+.159	.642	.577	-.065
T. Williams	1941	.594	.735	+.141	.656	.634	-.022
L. Gehrig	1927	.627	.765	+.138	.660	.632	-.028
J. Foxx	1932	.636	.749	+.113	.675	.609	-.066
A. Simmons	1930	.619	.708	+.089	.666	.535	-.131
H. Wilson	1930	.644	.723	+.079	.693	.545	-.148
S. Musial	1948	.624	.702	+.078	.669	.559	-.110
C. Klein	1930	.614	.687	+.073	.680	.543	-.137
B. Herman	1930	.607	.678	+.071	.676	.532	-.144
M. Mantle	1956	.647	.705	+.058	.702	.557	-.145
N. Lajoie	1901	.578	.635	+.057	.661	.467	-.194
J. Dimaggio	1939	.619	.671	+.053	.675	.579	-.096

1985 Leaders

<u>Player</u>	<u>Team</u>	<u>OA</u>	<u>SA</u>	<u>HD</u>	<u>Career</u>		
					<u>OA</u>	<u>SA</u>	<u>HD</u>
B. Brett	K.C.	.635	.585	-.050	.684	.507	-.177
P. Guerrero	L.A.	.680	.577	-.103	.694	.513	-.181
D. Mattingly	N.Y. (A)	.676	.567	-.109	.677	.524	-.153
D. Parker	Cin.	.688	.551	-.137	.696	.492	-.204
W. McGee	St. L.	.647	.503	-.144	.692	.418	-.274
W. Boggs	Bos.	.632	.472	-.160	.649	.457	-.182
D. Murphy	Atl.	.700	.539	-.161	.722	.493	-.229
R. Henderson	N.Y. (A)	.686	.516	-.170	.705	.425	-.280
E. Murray	Balt.	.703	.523	-.180	.702	.509	-.193
J. Barfield	Tor.	.721	.536	-.185	.733	.483	-.250
R. Sandberg	Chi. (A)	.695	.504	-.191	.713	.435	-.278
M. Marshall	L.A.	.707	.515	-.192	.725	.460	-.265
K. Gibson	Det.	.713	.518	-.195	.723	.478	-.245

Copyright 1986 by Barry Codell

From Costas, NBC Sports, 1986:

"Dear Barry,
 Your Hitting Differential
 is another excellent statistic.
 It recaptures your discovery
 of baseball's essential offensive
 relationship (bases to outs) in
 a new light. Great, and original, work!
 Thanks again,
 Bob "