# A Century of Modern Baseball: 1920 to 2019 

The Best Players of the Era

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"Mike, ... I appreciate your using Win Shares for the purpose for which it was intended. ...thanks ... Bill (James)"

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## Introduction

The year 2019 marks 100 years of "the live-ball era" (that is, modern baseball) - 1920 to 2019. This monograph will examine those individuals who played the majority of their careers during this era and it will indicate who were the best players.

As a secondary goal, it will seek to identify "Hall of Fame benchmarks" for position players and pitchers - to indicate whether a particular player appeared to post "HOF numbers" during his on-field career.

There have been three distinct eras in baseball history:

1. $19^{\text {th }}$ Century Baseball
2. The "Deadball Era" $=1901$ to 1919
3. The "Live-Ball Era" = Modern Baseball = 1920 to 2019

These pages will examine only those players who played the majority of their careers after 1920. So, players from the $19^{\text {th }}$ century and the deadball era will not be considered.

This is NOT an attempt to detract in any way from the legends of such baseball greats as Cy Young or Honus Wagner or Ty Cobb. Rather it is a recognition of the fact that the game that has been played since 1920 is quite different in many aspects from that which preceded it.

And now, in the 100th year of "modern baseball," it is time to begin to make that distinction in a more formal manner - and to focus our attention on the modern game.

I am not suggesting that we should "forget" about the glorious history of baseball prior to 1920 - but rather that when we "compare" players to see how good are the recent players - that we confine ourselves to the modern era. So, for example, Willie Mays, Mickey Mantle and Joe DiMaggio are
the best center fielders (not Ty Cobb or Tris Speaker), Rogers Hornsby and Joe Morgan the best second basemen ( not Eddie Collins or Nap Lajoie) and Alex Rodriguez the best shortstop (not Honus Wagner). (Yes, I did say that ARod is the shortstop with the best numbers in the modern era).

So, this monograph is essentially identifying who were the best players of the modern era. At the same time (as a secondary goal), it attempts to identify what "could be" seen as "Hall of Fame numbers" for baseball players. So, for example, in the lists at the end of this monograph, Rusty Staub's on-field numbers identify him as one of the top 100 position players of the modern era - but those numbers are judged to be just short of "Hall of Fame worthy."

The monograph represents many years of research on the part of the author who is a member of SABR (Society for American Baseball Research) - and who is also Professor Emeritus (mathematics) of the City University of NY (and a baseball fan for more than seventy years).

I grew up in the Washington Heights section of New York City and could walk to both Yankee Stadium and to the Polo Grounds. I saw all the greats from both leagues in person during the post World War II era. In 1951, I saw Willie Mays play his first game in the Polo Grounds (I was 15 years old). He was then and is now my favorite player of all time.

I am the author of five books on baseball and have been quoted in the NEW YORK TIMES as an "expert" on the Hall of Fame (see the end of this introduction).

I think it is fair to say that there is some disagreement as to what should be the exact credentials that a player should possess in order to be elected to the Hall of Fame.

According to the guidelines set forth for the BBWAA election process, "Voting shall be based upon the player's record, playing ability, integrity, sportsmanship, character, and contributions to the team(s) on which the player played."

This statement clearly suggests that the player's record and playing ability should be the two primary considerations for election to the Hall. It then mentions "integrity, sportsmanship, character, and contributions to the team" as additional points to be considered.

I would suggest then that a certain minimum level of career numbers should be present before any player is considered for enshrinement at Cooperstown (as a player).

## And I suggest that the CAWS CAREER GAUGE (CCG) tells us what those Hall of Fame numbers might be.

Most observers would agree that that there are some questionable players enshrined in Cooperstown at the present time. And I am referring here only to the major league players who have been inducted and to the numbers they put into the record books. (I am not concerned here with managers, umpires, executives, etc.)

I am suggesting that the player's record on the field should be the primary consideration for induction into the Hall of Fame. Only after it has been determined that the player's record is "Hall-worthy" would the other points come into play.

So, using Pete Rose as an example, I would say that there is no question that he has Hall of Fame numbers based on his playing career. Unfortunately, his gambling habits called into question his integrity and sportsmanship and he has been banned from consideration for this reason. Similarly, the "steroids issue" has called into question the candidacy of Barry Bonds and Roger Clemens (and a number of others) on the grounds of integrity and sportsmanship.

The point, of course, is that integrity and sportsmanship do have a role to play - but only after it has been determined that the player has career Hall of Fame numbers.

It is my belief that no major league player should be in the Hall unless his performance on the field has earned him the right to be there. In other words, the fact that he may have been a "great sportsman" or an "outstanding role model" may be important in some other context. But if he does not have the career numbers to justify his induction into the Hall (with some few exceptions), then he should not be there. The numbers should be the \#1 consideration.

To use a recent case as an example, Harold Baines was elected to the Hall of Fame by the Veterans Committee in 2018. His supporters seemed to emphasize his integrity and sportsmanship as his primary qualifications. Unfortunately, as we will see in this monograph, his performance on the field came nowhere near representing "Hall of Fame numbers."

This monograph has only one goal. It is meant to serve as a handy resource for any fan who wishes to address the dual question: How good was John Doe as a player compared to others - and does he have the career numbers to justify consideration for the Hall of Fame? That is, does a certain major league player (either a position player or a pitcher) have the playing credentials to deserve induction into the sport's ultimate shrine in Cooperstown, NY?

As with all baseball records, this monograph looks only at a player's numbers posted during the regular season. No post-season results are considered (in an effort to keep the playing field level for all). Of course, this affects some players more than others. But we will focus on the question: Which players appear to have posted HOF numbers based exclusively on their regular-season on-field performance alone?

## WIN SHARES Changed the Player Assessment Landscape

In 2002, baseball guru Bill James (considered by many to be the "father" of sabermetrics) changed the baseball landscape forever with the publication of his book, WIN SHARES. We will have more to say about this later in this monograph but it is important to mention this here at this time.

From the point of view of this author (a mathematician), the concept of Win Shares made it possible (perhaps for the first time) to fairly assess a player's entire career - including hitting, fielding and pitching. That is why it is now possible to compare players much more efficiently than in the past. And the "old ways" of judging whether a player belongs in the Hall of Fame are all but obsolete.

Other valuable metrics have been introduced since 2002 - but WIN SHARES remains the most comprehensive metric (and the most mathematically sound) to judge how well a player performed each season.

This monograph analyses the numbers of baseball using the concept of the CAWS CAREER GAUGE (CAWS is an acronym for Career Assessment/Win Shares). The CAWS Gauge is based on Bill James' Win Shares system.

The CCG is intended to be used as a helpful tool to judge a player's entire career. I am not suggesting that it is the ultimate measure or that it is "better than" any other metric. What I am suggesting is that it can be useful as one tool in an effort to answer the question: How good was John Doe as a player and did he post Hall of Fame numbers during his career?

## Some Conclusions from the CAWS CAREER GAUGE

1. At the end of the 2018 season, there were $\mathbf{1 0 4}$ position players and $\mathbf{4 8}$ pitchers ( 152 players) who had achieved Hall of Fame numbers in the major leagues since 1920.
2. Of these players, $\mathbf{2 4}$ position players are not yet in the Hall of Fame. Likewise, 6 pitchers are not yet in Cooperstown. Of course, a number of these players (like Derek Jeter) have not yet been eligible.
3. A CAWS career score of $\mathbf{2 8 0}$ signifies that a position player (at any position) posted HOF numbers during his career. There are 76 players who have achieved this score since 1920. In addition, as we will see, there are $\mathbf{2 8}$ other position players who have also posted HOF numbers during this time frame - by virtue of a defensive adjustment made
necessary by win shares and its credit for defensive skills.
4. A CAWS career score of $\mathbf{2 2 0}$ signifies that a pitcher definitely posted HOF numbers during his career. There are 35 pitchers who have done this since 1920. In addition, there are $\mathbf{1 3}$ other pitchers who have also posted HOF numbers during this time frame (through other benchmarks).

The win shares numbers found in this book are taken (almost exclusively) from Bill James' book, WIN SHARES and the various editions of THE BILL JAMES HANDBOOK.

The Hall of Famers discussed in this monograph are those who have been elected through the 2019 Hall of Fame elections.

When I first began to work on what would become the CAWS CAREER GAUGE, I sent an early article to Bill James (the creator of Win Shares) for his consideration. Mr. James responded to the article as follows (12/2/2004):

## "Mike-- I read and enjoyed the article, and I appreciate your using Win Shares for the purpose for which it was intended. . . thanks. ... Bill"

Thus encouraged, I have spent some time during the past fifteen years (since my retirement from teaching) developing and refining the CAWS approach.

## The Author

1. I have been a member of SABR (Society for American Baseball Research) and involved in baseball analysis since 1998. I am the author of five books on baseball dealing with using the players' numbers to analyze their careers. My latest book is DEFINING GREATNESS: A Hall of Fame Handbook (Booklocker, 2012).
2. On the CBS NEW YORK website on January 12, 2011, SABR member Gabe Costa wrote an article entitled BY THE NUMBERS: SOME PIONEERS IN SABERMETRICS suggesting that I am
considered to be a "pioneer in sabermetrics." In the article, he wrote about my CAWS CAREER GAUGE in relation to pitcher Bert Blyleven's election the the Hall of Fame. He also said the following: "(John) Thorn, (Pete) Palmer, (Bill) James and (Mike) Hoban are just a few of the recent "pioneers" with regard to sabermetrics. They, and many others, have only enhanced the appreciation of the game of baseball; a gripping, addictive, intoxicating, wonderful game!"
3. In the NEW YORK TIMES sports section of November 19, 2011, writer Richard Sandomir referred to my CAWS CAREER GAUGE when writing about Hall of Fame qualifications. In an article about the Yankees’ Allie Reynolds being on the Veterans Committee Hall of Fame ballot at that time, Sandomir interviewed Rob Neyer and myself and wrote as follows: "Dr. Michael Hoban, a professor emeritus of mathematics at City University of New York, said that Reynolds's career "wasn't long enough, and he simply didn't contribute enough in those years." Hoban, who writes for the Seamheads.com blog, has adapted the sabermetrician Bill James's Win Shares formula to examine the full careers of major leaguers. He said that a starting pitcher must score at least 220 in his Career Assessment/Win Shares calculation, or CAWS, to deserve enshrinement. With a 157 score, Reynolds falls well below Hoban's benchmark, as do Luis Tiant (213) and Jim Kaat (203), neither of whom have made it to Cooperstown."

I sent a copy of this article to Bill James and received the following response (11/20/2011):
> "Mike,
> Good to see you getting the chance to promote solid research. Reynolds was a good pitcher and I have some sympathy for those who admire him, but. . . you're right; he just does not have the credentials to have any legitimate case.
> Bill"

I hope that you will enjoy reading these pages as much as I have enjoyed writing them.

Thank you.

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Lakewood, NJ,
February, 2019

## Part 1

## Career Assessment

## The Win Shares System

## The "Best Players"

Fans of any sport are usually interested in knowing who are (or were) the best players in the game. For example, many basketball fans debate the question: Who was the better player - Michael Jordan or LeBron James?

At the end of the playing season, many fans enjoy looking back and being able to say that player A had a better season than player B. And when a player's career is ending, we like to conclude that " C was better than D and almost as good as E." Comparing athletes in this way is almost a national pastime in itself.

Baseball fans are particularly fortunate in that no other sport rivals baseball for the sheer number of statistics available for comparing the players. In fact, there are so many numbers available, that it often leads to confusion as to what to look at in order to judge how good a player really is (or was). For many years, a player's batting average (BA) was used to suggest who were the best hitters. But, careful analysis over a number of years has now convinced us that a combination of on-base-percentage (OBP) and slugging average (SLG) is a better indicator of who were the most effective batters.

Of course, in baseball, batting alone does not tell us who is a "better player." Fielding must also enter into the equation. And judging fielding has always been more difficult than judging hitting. The skills required of a good shortstop or catcher are much different than those required of a left fielder or a first baseman. And attempting to judge who was the best "all-around" player has always been difficult.

But not to worry. Over the years, there have been a number of dedicated people who have devoted a considerable amount of time into researching these questions. Many of these analysts are members of an organization known as SABR (Society for American Baseball Research). As a baseball fan and a mathematician, I have spent considerable time over the past twenty years studying the various approaches that have been taken regarding the comparison of baseball players. And I am happy to report that (in my view) the most highly respected of all of these analysts, Bill James, has developed
a system that I believe is a quantum leap ahead of all such systems in this regard.

Bill James is a dedicated researcher and a prolific and enjoyable writer. For more than forty years he has been considered the guru of baseball analysis. In fact, in 2004, as a special advisor to the Boston Red Sox front office, he contributed to that team's first World Series triumph in more than eighty years.

In 2002, Bill James published his book called WIN SHARES in which he introduced a new system that was the product of more than twenty-five years of research. And it is this system that I am convinced is far better than any other that has been developed. The method is so revolutionary that I believe that it is fair to say that since 2002 (for the first time ever), we are able to validly look at and compare players (including hitting and fielding and pitching) no matter when they played or who they played for. The key to the value of Win Shares is that it tells us how valuable a player was to his team each season. And, of course, a player's value to his team is what the game is all about.

Win Shares is a very complex system (the book is 728 pages long). But it is not really necessary to understand every nuance of the system in order to appreciate its value. The true genius of the approach seems to be two-fold. First, like any valid evaluation system, it measures a player's value relative to the era in which he played and to the playing conditions under which he performed. That is, adjustments are made to account for such things as playing in the "dead-ball era" or playing in a "pitcher's ballpark." But the second (and more remarkable achievement) is that it appears to be able to measure a player's value regardless of whether he played on a winning or a losing team. And it is not necessary to completely understand how the system works in order to enjoy the results that it produces.

Put as simply as possible, here is what the Win Shares system does - it tells us how good a season a player had. It awards a team a certain number of win shares for the season - depending on the number of games that the team won during the season. It then takes those win shares and distributes them among the players on the team depending on each player's contribution to the team during the season. And, as a rule of thumb, here is how the number of win shares in a season can be interpreted for an individual position player:

1. 30-40 win shares $=$ MVP-type Season
2. 20-30 win shares $=$ All-Star Season
3. $10-20$ win shares $=$ Solid Regular Player
4. $0-10$ win shares $=$ Bench Player

It is worth noting for example that the average MVP winner through 2004 had 33.4 win shares for the season.

As an example of win shares results, here is the best season by some of the greatest players in baseball history:

| Honus Wagner | 1908 | 59 win shares |
| :--- | :--- | :--- |
| Babe Ruth | 1923 | 55 |
| Walter Johnson | 1913 | 54 |
| Barry Bonds | 2001 | 54 |
| Mickey Mantle | 1957 | 51 |
| Ted Williams | 1946 | 49 |
| Ty Cobb | 1915 | 48 |
| Stan Musial | 1948 | 46 |
| Cy Young | 1892 | 44 |
| Willie Mays | 1965 | 43 |
| Hank Aaron | 1963 | 41 |

Here is how the Win Shares system is described in The Bill James Handbook 2005 (ACTA Sports) - p. 361
"Bill James devised Win Shares to reduce a player's statistics to a single number related to the number of wins he contributed to his team. It includes offensive, pitching and defensive accomplishments. The quality of the team does not affect an individual player's Win Shares. A great player on a bad team will rate as well as a great player on a good team. ...
A Win Share is one-third of a team's win, credited to an individual player. The Win Shares credited to the players on a team always total up to exactly three times the team's win total. If the team wins 100 games, the players on the team will be credited with 300 Win Shares - 300 thirds of a win. If the team wins 80 games, the players on the team will be credited with 240 Win Shares, always and without exception.

Win Shares are a great tool for evaluating trades, award voting and Hall of Fame credentials."

I certainly agree with this last statement and that is why I feel that Win Shares (when used appropriately) can tell us which players definitely have Hall of Fame numbers.

To get a little more flavor of what Win Shares are all about, consider the following statements from Bill James himself in the Introduction to the book WIN SHARES (STATS, Inc., 2002).
"For many years, I have wanted to have a system to summarize each player's value each season into a simple integer. Willie Mays' value in 1954 is 40, in 1955, 40, in 1956, 27, while Mickey Mantle in the same three years is 36,41,49. If we had an analytical system in which we had confidence, and which delivered results in that simple a form, it would open the door to researching thousands of questions which are virtually inaccessible without such a method. It would reduce enormously the time and effort required to research such questions, which can be accessed by other methods, but only with great difficulty. (p.3)

We have dozens of methods to compare players. We have piecemeal ways to put those together. What we lack is a way of tying them all into a coherent analysis. We need a comprehensive system, in which we have confidence, which has a place for all of the things we must think about when trying to assess value - productivity, park illusions, defense, playing time, contributions to winning teams. Everything. (p. 5)

This is the only analytical system I am aware of which is team-based, rather than derived from individual stats. Most analysis builds up from the performance of individuals. This analysis breaks down the performance of the team. (p.9)

This last point is crucial to understanding the uniqueness of the Win Shares approach and to appreciating the system. Besides being comprehensive, it looks first at the team's accomplishments and then determines each player's contribution to the team's success.

## Win Shares - Comprehensive Yet Simple

As long as the game has been played, fans have attempted to compare players using the many statistics available to do so. How many hits or home runs or runs-batted-in or runs scored or stolen bases did the player have? What was his batting average or on-base percentage or slugging average or OPS? And these numbers do not tell us anything about his fielding ability.

The true genius of Win Shares is that it includes ALL of a player's contributions to his team and represents them in a single number. So that if we want to know who had the best season, we can simply list those players who had the most win shares for that particular season. As an example of the beauty and simplicity of the system, here are lists of the top ten players in each league in 2006 (data from hardballtimes.com).

American League

|  | Batting | Fielding | Win Shares |
| :--- | :---: | :---: | :---: |
| 1. Derek Jeter | 28.0 | 4.6 |  |
| 2. Joe Mauer | 21.3 | 9.5 | 33 |
| 3. David Ortiz | 29.3 | 0.1 | 31 |
| 4. Manny Ramirez | 26.9 | 2.1 | 29 |
| 5. Justin Morneau | 25.5 | 2.0 | 29 |
| 6. Jermaine Dye | 23.7 | 2.8 | 28 |
| 7. Raul Ibanez | 24.0 | 3.1 | 27 |
| 8. Jim Thome | 25.9 | 0.0 | 27 |
| 9. Carlos Guillen | 21.5 | 4.3 | 26 |
| 10. Michael Young | 18.5 | 7.7 | 26 |
|  |  |  | 26 |

## National League

| 1. Albert Pujols | 36.3 | 2.4 | 39 |
| :--- | :--- | :--- | :--- |
| 2. Carlos Beltran | 30.0 | 8.3 | 38 |
| 3. Lance Berkman | 31.7 | 2.0 | 34 |
| 4. Miguel Cabrera | 30.9 | 2.8 | 34 |
| 5. David Wright | 27.4 | 4.3 | 32 |
| 6. Ryan Howard | 29.8 | 1.2 | 31 |
| 7. Alfonso Soriano | 25.9 | 3.6 | 30 |


| 8. Jose Reyes | 26.3 | 3.1 | 29 |
| :--- | :--- | :--- | :--- |
| 9. Mike Cameron | 21.2 | 7.2 | 28 |
| 10. Chase Utley | 23.2 | 4.9 | 28 |

As you can see, Derek Jeter had the best overall season in the American League in 2006 with 33 win shares although David Ortiz had the best hitting season with 29.3 win shares.

And in the National League, Albert Pujols had both the best overall season with 39 win shares and the best hitting season with 36.3 win shares.

Does this mean that Derek Jeter and Albert Pujols were the most valuable players in their leagues during the 2006 season? Yes, it does. But does that mean that they were chosen to receive the Most Valuable Player Awards (MVP) for 2006? No, it does not.

As it turns out, Justin Morneau (\#5 on our list above) was chosen the American League MVP and Ryan Howard (\#6 on the list above) was chosen National League MVP. Which simply goes to illustrate why a more comprehensive measure (like Win Shares) is needed.

## How to Judge a Career - Total Win Shares is Not Enough

The Win Shares system does a wonderful job of telling us how good a season a player had. For example, in 2006, Albert Pujols of the Cardinals contributed more to his team than any other National Leaguer. He had 39 win shares that year - 36.3 from the offensive side and 2.4 for his defense. Similarly, Derek Jeter of the Yankees contributed more to his team than any other American Leaguer. He had 33 total win shares -28.0 for offense and 4.6 for defense (data from hardballtimes.com.) As a rule of thumb, 30 win shares for a position player is considered to represent an MVP (Most Valuable Player) type of season.

But how do you go from the examination of a player's individual seasons to a conclusion about his career? This is the essential question that I wished to answer. And, of course, a simplistic answer might be: just add up the win shares from all his seasons and that will tell you. That is, if you know the total of a player's career win shares, you can judge how good he was. But, I think it is not quite as easy as that.

It is true to say that the total career win shares may tell us a lot about a player. For example, any position player who has 400 career win shares has had a great career - no question about it. Likewise, for any pitcher who has 300 career win shares.

But the evaluation of many players' careers is more complicated than that. Hall of Famer Dave Winfield had 415 career win shares while Hall of Famer Joe DiMaggio had 387. Does that mean that Winfield had a better career than DiMaggio or that Dave belongs in the Hall of Fame but Joe does not? Of course not.

Hall of Fame pitcher Don Sutton had 319 career win shares while Hall of Famer Juan Marichal had 263. Does that mean that Sutton was a better pitcher than Marichal? I think that very few fans would reach that conclusion.

The point here is that total career win shares alone does not tell us enough about a player's career.

And that is where the CAWS CAREER GAUGE adds to the value of the Win Shares system. The CCG suggests that a better (and fairer) way to judge a player's career is to combine the win shares from a player's ten best seasons plus an appropriate amount of credit for the player's longevity.

And, as we shall see, the CCG suggests that Joe DiMaggio and Juan Marichal had better careers than Dave Winfield and Don Sutton, respectively.

You may say that this conclusion is a "no-brainer" - and you may be right. But how about this one?

Is there some way to demonstrate empirically that some players who had relatively shorter careers like Hank Greenberg (267 career win shares) and Sandy Koufax (194 career win shares) actually did post Hall of Fame numbers?

Well, the CCG has in fact created benchmarks to determine whether a position player or a pitcher had a shorter but great career and did post HOF numbers. And, as it turns out, Greenberg and Koufax are two of a very small group of players who did indeed post HOF numbers in a relatively brief period of time. As we will see later in this monograph, only ten position players and eight pitchers qualify for this distinction.

So, Win Shares alone tells you how good a SEASON a player had.

And the CAWS CAREER GAUGE tells you how good a CAREER a player had.

## The CAWS Formula

Here is the CAWS formula: $\mathbf{C A W S}=\mathbf{C V}+\boldsymbol{2 5 ( C W S}-\mathbf{C V})$
Where
CAWS = Career Assessment/Win Shares
$\mathrm{CV}=$ Core Value $=$ sum of win shares for a player's ten best seasons
CWS = total career win shares
$.25($ CWS -CV$)=$ longevity factor $=$ credit for a longer career

Even when you have found a system like Win Shares which seems to be completely fair and unbiased in judging the value of a player for each season, there are still some questions to answer as to how to use the system most effectively when you are trying to decide which players had the best careers.

Perhaps the most important question in this regard is how to judge a player's longevity as compared to his core performance (his best seasons).

How, for example, do you compare a player like Al Kaline, who played for twenty-two years to a player like Joe DiMaggio, who played for only thirteen? Both were great players and both are in the Hall of Fame. During his career, Kaline accumulated 443 total win shares compared to 387 for DiMaggio. But, do you think that anyone would be inclined to claim that Kaline was a better player than DiMaggio? I do not think so. My point is that one must look at something other than total career win shares in order to better distinguish among the truly great players.

It is my contention that it is helpful to examine a player's ten best seasons (what I am calling his "core value") in order to get a better idea of how good he really is (or was). But, at the same time, one must give some appropriate credit to a player's career achievements. It is this balancing of career accomplishments and core value that will tell us who had the best careers of all time.

During his ten best seasons, Joe DiMaggio accumulated 325 win shares meaning that he averaged 32.5 win shares per season for those ten seasons a truly impressive achievement. As we saw above, only nine players in the
major leagues (two in the American League and seven in the National League) managed to earn 30 win shares in 2006. Imagine how difficult it is to average over 30 win shares for your ten best seasons. Al Kaline earned 268 win shares over his ten best seasons. This represents a very good core value but nowhere near DiMaggio's accomplishment. And so we can begin to see that Joe D was a substantially better player.

## Core Value

The Hall of Fame requires that a player must have at least ten years of major league service to be considered for induction into the Hall. And, if we are going to speak of a player's "core value" for the purpose of evaluating his career, then it seems appropriate to use this "ten year" measure - since, indeed, we wish to recognize the "best." That is, I will define a player's core value ( CV ) as the sum of the win shares that he earned during his ten best seasons.

## $C V($ Core Value $)=$ sum of win shares for a player's ten best seasons.

This core value tells us a great deal about the true value of a player's career.

## Why 10 Seasons?

No doubt there will be those who will advocate looking at a player's "peak value" and suggest that three or five or seven seasons should be used to define a player's "peak years." And, of course, doing that could be helpful as well. But that is why I have coined the term "core value" - so as not to confuse this concept with that of a player's peak years. Different players will have a different number of peak years. But I am suggesting that regardless of how many peak years a player may have had - the player's ten best seasons may be considered the core of his career.

It is my belief that if we are looking for the players with the absolute best careers (befitting those in the Hall of Fame), then we want to make our criteria as tough as is reasonable. And considering a player's core value to be his ten best seasons (rather than seven or five) seems to do that. (And, as noted earlier, the Hall of Fame requires ten seasons in the major leagues for consideration.)

Now, how will we give adequate credit for a player's total career win shares? Consider the following. The CV already includes at least $55 \%$ of a player's career win shares for all of the great position players - even those with the longest careers. For example, Hank Aaron played for twenty-three seasons and accumulated 643 career win shares. During his ten best seasons, he earned 356 win shares. This represents $55 \%$ of his total win shares. In fact, this is one of the lowest CV percentages for any of the truly great position players. So, this means that if we add an additional $25 \%$ of the career win shares not already included in the CV, then it would seem that we are certainly giving appropriate recognition to those players who had exceptionally long careers. That is, we are not allowing the quantity of a career to overwhelm its quality.

Therefore, I will define Career Assessment/Win Shares (CAWS) as follows:

$$
C A W S=C V+.25(C W S-C V)
$$

One additional note would seem to be appropriate at this point. There are certain players such as Sandy Koufax and Jackie Robinson who had brief but outstanding careers. We will see that defining core value in this way does not automatically put these players at a disadvantage. It is simply necessary to include within the CAWS Career Gauge some logical way of assessing these shorter but great careers. Actually, we will see that both of these players have HOF numbers.

## Why 25\%?

CAWS is all about using the Win Shares system in trying to create an appropriate balance between CWS (career win shares) and CV (core value) in order to judge who had the best baseball careers. In trying to create this balance, I wanted to give a fair value to a player's longevity so that his core value (ten best seasons) did not overwhelm his career numbers. This required me to make an educated judgment call.

In examining the numbers, I made the decision that the CAWS should represent at least two-thirds of a player's career win shares. The $25 \%$ evolved from this decision. That is, every player's CAWS score represents
at least $67 \%$ of his career win shares. For most players, it represents a much higher percentage than that.

I should add that I did experiment with using other percentages such as $15 \%$ and $33 \%$ and $50 \%$. For example, if we use $33 \%$ in the formula instead of $25 \%$, a few relatively small changes would take place - obviously benefitting those players like Hank Aaron and Pete Rose who had particularly long careers. But, after much deliberation, I finally decided that $25 \%$ of the non-core win shares seemed to address the value of a player's longevity in the fairest manner - strictly a judgment call.

Players with longer careers and more career win shares obviously end up with a smaller percentage of their win shares reflected in their CAWS score. And the opposite is true for players who had shorter but still outstanding careers. But, of course, that is one of the points behind CAWS - to give appropriate credit to a player's core performance (his ten best years).

In creating a career gauge using Win Shares, it is important to note that it is NOT the players with the longest careers who are sometimes at a disadvantage for the Hall of Fame - but rather those with a somewhat shorter career. For example, every player who has 400 career win shares and who has been eligible has been elected to the Hall of Fame. Players like Joe DiMaggio, Hank Greenberg and Joe Jackson (all with shorter careers) had much better careers than their career win shares might suggest.

Consider the following examples which show the CAWS score divided by career win shares for selected Hall of Famers (and Joe Jackson).

| Hank Aaron | $67 \%$ | Lou Gehrig | $84 \%$ |
| :--- | :--- | :--- | :--- |
| Babe Ruth | $71 \%$ | Joe DiMaggio | $88 \%$ |
| Honus Wagner | $73 \%$ | Hank Greenberg | $99 \%$ |
| George Brett | $76 \%$ | Joe Jackson | $99 \%$ |
| Rogers Hornsby | $82 \%$ | Ralph Kiner | $100 \%$ |
| Johnny Bench | $83 \%$ | Jackie Robinson | $100 \%$ |

Hank Aaron had 643 career win shares compared to 387 for Joe DiMaggio because Hank played for many more seasons. This does not really give a fair picture of how good each player really was. Aaron's CAWS score of 428 compared to Joe's score of 341 is a much better indicator of their
relative careers. Hank had the better career - but not by as much as the career win shares might suggest.

## Arky Vaughan and Brooks Robinson

Arky Vaughan and Brooks Robinson were both outstanding infielders who are in the Hall of Fame. The numbers that they accumulated during their careers illustrate rather well what the CAWS is designed to demonstrate. Both of these players accumulated 356 win shares during their careers. But that does not mean that their careers were similar in any way. Vaughan played for fourteen seasons and Robinson for twenty-three. Arky's core value was 308 meaning that he averaged almost 31 win shares for his ten best seasons - a truly great performance. Brooks' CV was 247 indicating that he averaged almost 25 win shares for his ten best - a very good career but not nearly as good as Vaughan. Arky's CAWS score of 320 places him among the top 35 position players of the $20^{\text {th }}$ century. Brooks' score of 274 is respectable but cannot compare to that of Vaughan.

Now, returning to the questions posed earlier, we see that Joe DiMaggio had a CAWS score of 341 while Dave Winfield had a score of 298 (mainly because Joe's core value was much higher than Dave's, 325 versus 259). So, the Yankee Clipper had a better career.

And Juan Marichal's CAWS score of 238 is superior to that of Don Sutton's 220 (a core value of 229 versus 187). So, the Dominican Dandy had the better career.

## The Modern Era (1920 to 2019)

This monograph deals only with those players who played the majority of their careers since 1920 - the beginning of the modern era in baseball.

For example, Cy Young (1890-1911) is a $19^{\text {th }}$ century player and will not appear in this monograph at all. He pitched more games and got more wins
before 1901 than he did after the turn of the century. He had 286 of his 511 wins before 1901 and he pitched in 505 of his 906 games before that date.

Ty Cobb (1905-1928) is considered to be a deadball era player (1901-1919) since he played 15 of his 24 seasons in the deadball era. He also will not appear in this study.

Babe Ruth (1914-1935) is considered to have played in the modern era since he only played 6 of his 22 seasons in the deadball era.

The CCG has concluded that there are only 104 position players and 48 pitchers (a total of 152 players) who posted Hall of Fame numbers during the time frame from 1920 to 2018. A player must have completed ten major league seasons in order to be considered for the ranking.

Please see the lists at the end of this monograph for the names of the players.

## Defensive Adjustment

Given how win shares grants credit for fielding skills, the CAWS CAREER GAUGE employs a defensive adjustment (for some positions) in order to create an appropriate benchmark to determine whether a position player has Hall of Fame numbers. The benchmark for each position is as follows:

1. CAWS score of 280 for right fielders, left fielders, first basemen and designated hitters;
2. 270 for center fielders and third basemen;
3. 260 for second basemen and
4. 250 for shortstops and catchers.

Using these benchmarks, the CCG suggests that (as mentioned earlier) there have been 104 position players since 1920 who have posted Hall of Fame numbers during their playing career. Seventy-six (76) of these players have a CAWS score of 280 or better while twenty-eight (28) qualify with the defensive adjustment. They are distributed as follows:

| First base | 16 |
| :--- | ---: |
| Second base | 14 |
| Third base | 10 |
| Shortstop | 13 |
| Left Field | 14 |
| Center Field | 11 |
| Right Field | 12 |
| Catcher | 12 |
| Designated hitter | 2 |

A player is assigned (with very few exceptions) to the position where he played the most games during his career. So, for example, Paul Molitor and Frank Thomas are considered to be designated hitters because they played more games as a DH than at any one position.

One of the few exceptions to this rule, for example, is Ernie Banks. He played more games at first base (1259) than at shortstop (1125). But in everything I have read (and in the Hall of Fame), Banks is always referred to as a shortstop. So, I regard him as such.

## The 250/1800 Benchmark - Jackie Robinson

The CAWS Career Gauge suggests that any position player who has achieved a CAWS career score of 280 has Hall of Fame numbers. There have been 76 such players since 1920 (see the lists later in the monograph).

Likewise, any pitcher who has achieved a CAWS career score of 220 also has HOF numbers. There have been 35 such pitchers since 1920.

The question then arises: What about a player who has not achieved these benchmarks but who appears to have had a great career over a span of fewer games?

These next two chapters will deal with these players.

If there is anyone who believes that Jackie Robinson does not belong in the Hall of Fame, I have yet to meet him or her. Jackie's contributions to the game and to the social consciousness of the country have left an indelible mark on all true baseball fans.

But, as most fans know, Robinson had a rather short career - only ten seasons. This was due, in large part, to the color barrier that had existed for so long in baseball. And it is certainly true to say that a player who has such a short career usually will not have sufficient time to post the numbers that most fans would look for in a Hall of Fame career. And so, most fans may believe that Robinson is in Cooperstown solely on the basis of his other accomplishments. Consequently, it may come as a surprise to some when I state that Jackie actually did post HOF numbers during his brief career.

In creating the CAWS CAREER GAUGE, I have examined the careers of all the great position players and pitchers since 1920 and I have identified benchmarks to determine who does and who does not have HOF numbers.

It will come as no surprise to most fans to learn that there are some players who are in the Hall of Fame who do not have the numbers to be there.

Players such as Chick Hafey and Rick Ferrell come readily to mind. And there are other players such as Dick Allen and Darrell Evans who do have HOF numbers but who have not been elected to the Hall for one reason or another.

In examining the credentials of the players for the Hall of Fame, I discovered a small group of position players who played in relatively fewer games but still were able to post impressive numbers.

## Only 10 Players - All are in the Hall of Fame

Since 1920, I have found only ten position players who attained a CAWS score of 250 while playing in fewer than 1800 games. Which would imply that these ten players must be rather special. And indeed they were.

Every one of the ten has been elected to the Hall of Fame despite playing in relatively fewer games than their contemporaries. Here are the ten players.

|  | Games | CWS | CV | CAWS |
| :--- | :--- | :--- | :--- | :--- |
|  |  |  |  |  |
| Joe DiMaggio | $\mathbf{1 7 3 6}$ | $\mathbf{3 8 7}$ | $\mathbf{3 2 5}$ | $\mathbf{3 4 1}$ |
| Earl Averill | $\mathbf{1 6 6 8}$ | $\mathbf{2 8 0}$ | $\mathbf{2 6 8}$ | $\mathbf{2 7 1}$ |
| Hank Greenberg | $\mathbf{1 3 9 4}$ | $\mathbf{2 6 7}$ | $\mathbf{2 6 2}$ | $\mathbf{2 6 3}$ |
| Lou Boudreau | $\mathbf{1 6 4 6}$ | $\mathbf{2 7 7}$ | $\mathbf{2 5 5}$ | $\mathbf{2 6 1}$ |
| Bill Terry | $\mathbf{1 7 2 1}$ | $\mathbf{2 6 8}$ | $\mathbf{2 5 5}$ | $\mathbf{2 6 1}$ |
| Larry Doby | $\mathbf{1 5 3 3}$ | $\mathbf{2 5 7}$ | $\mathbf{2 6 0}$ |  |
| Jackie Robinson | $\mathbf{1 3 8 2}$ | $\mathbf{2 5 7}$ | $\mathbf{2 5 7}$ | $\mathbf{2 5 7}$ |
| Mickey Cochrane | $\mathbf{1 4 8 2}$ | $\mathbf{2 8 1}$ | $\mathbf{2 4 7}$ | $\mathbf{2 5 6}$ |
| Kirby Puckett | $\mathbf{1 7 8 3}$ | $\mathbf{3 1 4}$ | $\mathbf{2 3 5}$ | $\mathbf{2 5 6}$ |
| Bill Dickey | $\mathbf{1 7 8 9}$ |  |  |  |

Of course, Joe DiMaggio stands out among the players in this group as the one who achieved the most in a relatively short career. But note that Jackie Robinson played the fewest games among this elite group - and yet he was still able to achieve the CAWS benchmark.

As an interesting aside, note how close the numbers place Jackie Robinson and Larry Doby - the two players credited with integrating the National League and the American League, respectively. Each of these players had a core value (CV) of 257 meaning that each averaged almost 26 win shares over his ten best seasons - an outstanding accomplishment. So, aside from being the integration pioneers, both Jackie Robinson and Larry Doby were terrific ballplayers.

Keep in mind that there have been other outstanding players such as Ralph Kiner and Don Mattingly who also played in fewer than 1800 games in their careers - but who did NOT achieve the 250 CAWS benchmark. Kiner is in the Hall of Fame (even though he does not have HOF numbers) but Mattingly is not.

| Games | CWS | CV | CAWS |
| :--- | :--- | :--- | :---: |
| 1785 | 263 | 241 | 247 |
| $\mathbf{1 4 7 2}$ | $\mathbf{2 4 2}$ | $\mathbf{2 4 2}$ | $\mathbf{2 4 2}$ |

Consequently, if someone should suggest that Jackie Robinson is in the Hall of Fame ONLY because of his unique role in baseball history, we now know that he would deserve to be there based ONLY on his on-the-field numbers.

## The 180/2400 Benchmark - Pedro and Sandy

As I pointed out in the previous chapter, any pitcher who has achieved a CAWS career score of 220 has HOF numbers. And there have been just 35 such pitchers since 1920.

The question then arises: What about a pitcher who has not achieved this benchmark but who appears to have had a great career but with fewer innings pitched?

One of the most significant contributions of the CAWS Career Gauge is that it has established an empirical method for determining which pitchers who have not earned a 220 CAWS score still have Hall of Fame numbers.

Pedro Martinez was elected to the Hall of Fame by the BBWAA in 2015. But does he have HOF numbers? Many fans would argue this question in different ways. That is, they would use different numbers and different metrics to make their case - either pro or con.

But this is one of those times when it is sometimes helpful to have a single metric that helps you decide whether someone has Hall of Fame numbers. Something like having the exact tool needed to do a job. And, in this case, the CAWS GAUGE appears to be an appropriate tool.

Look at the following five pitchers. The first number is innings pitched during their entire careers, the second is career win shares, the third is the win shares for their ten best seasons and the fourth is their CAWS Career Score. Note that each has fewer than 2400 innings pitched but a CAWS score of 180 or better.

|  | IP | CWS | CV | CAWS |
| :--- | :---: | :--- | :--- | :---: |
|  |  |  |  |  |
| Mariano Rivera | 1283 | 272 | 175 | 199 |
| Sandy Koufax | 2324 | 194 | 190 | 191 |
| Hoyt Wilhelm | 2254 | 256 | 168 | 190 |
| Goose Gossage | 1809 | 223 | 173 | 186 |
| Dizzy Dean | 1967 | 181 | 180 | 180 |

All five of these pitchers are in the Hall of Fame and deservedly so since this is quite an accomplishment. In fact, these are the ONLY PITCHERS since 1920 that I have found who have accomplished this during their entire career - a CAWS score of 180 with fewer than 2400 innings pitched.

## THE CCG SUGGESTS THAT ANY PITCHER WHO HAS DONE THIS HAS HOF NUMBERS.

For these five pitchers the numbers represent their career totals. But what if a pitcher had achieved this benchmark at some earlier point in his career? Logic would dictate that the pitcher in question had accumulated Hall of Fame numbers at that point in his career irrespective of what happened subsequently. And, of course, this would be correct.

OK, so what about Pedro Martinez? Would his career up to a certain point reflect these sort of numbers? If you examine Pedro's career through 2004 (through thirteen seasons), you will find the following.

|  | IP | CWS | CV | CAWS |
| :---: | :---: | :---: | :---: | :---: |
| Pedro Martinez | 2297 | 224 | 200 | 206 |

This means, of course, that Pedro's career through his first thirteen seasons would put him at the top of this short list of great pitchers.

Therefore, we can conclude that Pedro Martinez already had Hall of Fame numbers after just thirteen seasons. And that would put him into the same special category as Sandy Koufax whose career ended after just twelve seasons and Dizzy Dean who really pitched for only ten seasons. In fact, given the numbers above, a fan might argue that Pedro had a "better career" at that point than either Sandy or Dizzy.

I should note that Roy Halladay became only the seventh pitcher to achieve this distinction in 2010 (after just thirteen seasons) - (among those pitchers who did not achieve a CAWS score of 220) . Here are his numbers at that point.

$$
\begin{array}{lllll}
\text { Roy Halladay } & 2297 & 194 & 183 & 186
\end{array}
$$

Finally, Clayton Kershaw became the eighth pitcher since 1920 to achieve this distinction at the end of 2018 with the following numbers.

|  | IP | CWS | CV | CAWS |
| :---: | :---: | :---: | :---: | :---: |
| Clayton Kershaw | 2096 | 188 | 182 | 184 |

There is no reason to be too surprised that some players achieve HOF numbers well before their career ends. A good example is Albert Pujols who was still playing in 2018 - but who achieved HOF numbers in just his first ten seasons.

Therefore, in the modern era, only eight pitchers (who did not reach a 220 CAWS career score) achieved a score of 180 in fewer than 2400 innings and seven of them are now in the Hall of Fame.

So, for a pitcher, 180/2400 becomes a Hall of Fame benchmark.

## The 160/1500 Benchmark - Mariano Rivera

"Mariano Rivera is the best reliever in baseball history." If I were to make such a claim, there would surely be fans who would agree with me and many who would not. And, of course, all would want to know on what basis I made such a claim.

As we saw in the previous chapter, Mariano has HOF numbers because he is one of just eight pitchers who have earned a CAWS score of at least 180 in fewer than 2400 innings pitched. But Mariano is the extraordinary exception, not the rule.

In trying to establish reasonable benchmarks for Hall of Fame numbers, I naturally came up against the question: Since a relief pitcher who has never been a starter will normally pitch many fewer innings than a starting pitcher, how are you going to determine whether a "true relief pitcher" has HOF numbers? Obviously, the same standards cannot apply for a starting pitcher and a relief pitcher.

In wrestling with this question, I looked at the careers of all the great relief pitchers to try to establish a benchmark that would recognize the best - but would not be "too easy." And I believe that I have accomplished this task.

Consider the following statement. I have found only three pitchers since 1920 who have achieved a CAWS score of 160 while pitching fewer than 1500 innings. Here are those pitchers. (I should note that Billy Wagner came very close - with a CAWS score of 159 in 903 innings.)

|  | IP | CWS | CV | CAWS |
| :--- | :---: | :--- | :--- | :---: |
| Mariano Rivera | 1283 | 272 | 175 | 199 |
| Lee Smith | 1289 | 198 | 152 | 164 |
| Bruce Sutter | 1042 | 168 | 163 | 164 |

With Mariano's election in 2019, all three pitchers are now in the Hall fo Fame.

So, I have established the $160 / 1500$ benchmark as the standard for relief pitchers to have HOF numbers. As you can see, neither of these other two
pitchers comes anywhere close to what Mariano achieved in his career even though both are in the Hall of Fame.

Notice that both Smith and Sutter had a CAWS score of 164. Then note that Mariano has a CAWS score of 199 - a full thirty-five points ahead of both of them - an amazing achievement.

And, in case you are wondering about some other "true relievers," here are the numbers for some of the best ever. Note that none of them achieved the 160 CAWS benchmark - even though Trevor Hoffman is in the Hall of Fame.

|  | IP | CWS | CV | CAWS |
| :--- | :---: | :--- | :--- | :---: |
| Billy Wagner | 903 | 182 | 151 | 159 |
| Dan Quisenberry | 1043 | 157 | 155 | 156 |
| Trevor Hoffman | $\mathbf{1 0 8 9}$ | $\mathbf{1 8 8}$ | $\mathbf{1 3 5}$ | $\mathbf{1 4 8}$ |
| John Franco | 1246 | 183 | 128 | 142 |
| Mike Marshall | 1387 | 146 | 139 | 141 |
| Kent Tekulve | 1436 | 159 | 135 | 141 |
| John Hiller | 1242 | 146 | 136 | 139 |
| Sparky Lyle | 1390 | 161 | 132 | 139 |
| Tom Henke | 790 | 140 | 130 | 133 |
| Doug Jones | 1128 | 146 | 128 | 133 |
| Jeff Riordan | 1132 | 157 | 121 | 130 |
| Jeff Montgomery | 869 | 134 | 127 | 129 |
| John Wetteland | 765 | 127 | 125 | 126 |

I should note that Rollie Fingers is in the Hall of Fame and is generally considered by many to be a "reliever" (as are Hoyt Wilhelm and Goose Gossage who were discussed in the previous chapter). I feel that a pitcher should be considered a "true reliever" only if he pitches fewer than 1500 innings in his career. In any case, Fingers does not have HOF numbers by the CCG.

| Rollie Fingers | 1701 | 188 | 154 | 155 |
| :--- | :--- | :--- | :--- | :--- |

So, you can see why I feel very comfortable in saying that Mariano Rivera appears to be the best "true reliever" in baseball history.

Trevor Hoffman was elected to the Hall of Fame by the BBWAA in 2018 even though he does not have the numbers according to the CAWS Career Gauge. The number of "saves" that he accumulated in his career seemed to impress a sufficient number of voters. He joins Rollie Fingers and the other fifty (50) players (since 1920) who are in the Hall of Fame but who apparently do not have the numbers to be there. See the list of these players later in this monograph.

## 300 Win Shares - A New "Rule of Thumb"

In the past, when fans talked about who belonged in the Hall of Fame, mention was often made of the three "rules of thumb" that have been around for some time. That is, a player "deserved to be in the Hall of Fame" if he

1. Had 3000 hits or
2. Had 500 home runs or
3. Had 300 wins as a pitcher.

Of course, in reality, there are no such "rules." But this had become a standard belief among many fans because, in fact, virtually all players who had attained any of these distinctions were in fact in the Hall of Fame - and so, in some sense of the term, these were "guarantees for admission to the Hall."

Unfortunately, it appears that the steroids era may put an end to the two batting achievements as "rules of thumb" since, for example, Mark McGwire (500 home runs) and Rafael Palmeiro (500 home runs and 3000 hits) do not appear to be headed to Cooperstown any time soon. Each of these players, despite having obvious Hall of Fame numbers, has received very little support from the writers in the HOF elections. And Roger Clemens may be putting an end to the 300 wins "rule" also.

But we must not allow those players who are considered "PEDS tainted" to confuse the issue.

## 300 Win Shares for a Pitcher = Hall of Fame Numbers

If we look carefully at the third "rule" - that is, pitchers who attain 300 wins, we find something very interesting. And that is: given what has actually happened in the voting for the Hall of Fame, this particular concept should be replaced at this point in time with the new "rule of thumb" = Any pitcher who earns 300 win shares in his career deserves to be in the Hall of Fame.

In doing the research involved in creating the CAWS CAREER GAUGE, it has become obvious to me that 300 win shares for a pitcher denotes a very special milestone. And it is important to note I am not so much advocating
what should happen - as I am pointing out what has in fact already happened.

Consider the following: In the modern era (1920 to present), there have been only thirteen (13) pitchers who have recorded 300 wins - and every one of them (except Clemens) is in the Hall of Fame. Of course, this is not really surprising since winning 300 games is quite an achievement. Here are those pitchers and the number of wins each recorded. (For the purposes of this essay, Pete Alexander is not considered to be a modern era pitcher.) The first number is games won and the number in parentheses is career win shares.

## Pitchers with 300 Wins in the Modern Era (13)

| Warren Spahn | 363 | $(412)$ |
| :--- | :--- | :--- |
| Greg Maddux | 355 | $(398)$ |
| Roger Clemens | 354 | $(432)$ |
| Steve Carlton | 329 | $(366)$ |
| Nolan Ryan | 324 | $(334)$ |
| Don Sutton | 324 | $(319)$ |
| Phil Niekro | 318 | $(374)$ |
| Gaylord Perry | 314 | $(369)$ |
| Tom Seaver | 311 | $(388)$ |
| Tom Glavine | 305 | $(314)$ |
| Randy Johnson | 303 | $(326)$ |
| Lefty Grove | 300 | $(391)$ |
| Early Wynn | 300 | $(309)$ |

It is interesting to note that each of these pitchers has also earned 300 career win shares. Of course, that is not too surprising either since one might expect that any starting pitcher who pitched long enough and well enough to win 300 games should have accumulated at least 300 win shares.

What is surprising however is the following: During the modern era, besides the thirteen pitchers above, there have been only ten (10) other pitchers who have earned 300 career win shares - and every one of them is in the Hall of Fame.

Therefore, what I am saying is that BY THEIR VOTES, the voters are saying that any pitcher who has 300 career win shares DESERVES to be in the Hall of Fame.

Pitchers with 300 Win Shares but not 300 Wins (all are in the Hall of Fame):
Bert Blyleven 339

Robin Roberts 339
Fergie Jenkins 323
Red Ruffing 322
Bob Gibson 317
Eppa Rixey 315
Jim Palmer 312
Ted Lyons 312
Carl Hubbell 305
Dennis Eckersley 301

What we see is that there have been only 23 pitchers who have earned 300 career win shares (in the modern era) and every one of them who has been eligible is in the Hall of Fame except for Roger Clemens. Of course, Clemens would now be in the Hall were it not for the steroids question.

Therefore, what can we conclude from these facts?
Actually, something that is quite significant. What this means is that the voters for the Hall of Fame have already decreed by their votes (whether they know it or not) that 300 win shares for a pitcher virtually guarantees induction into Cooperstown.

So, we have our new "rule of thumb:"
A pitcher who earns 300 career win shares is a virtual lock for the Hall of Fame.

If you do not agree with this conclusion, that is fine. But your argument would be with the voters - not with me. I am just the messenger delivering the news.

## Hall of Fame Numbers Without 300 Wins or 300 Win Shares

In pointing out this new "rule of thumb," it is not my intention to suggest that in order to achieve HOF numbers during a career that a pitcher must earn 300 win shares.

In fact, there are a number of pitchers in the modern era (25) who have not earned that many win shares but who do in fact have career HOF numbers according to the benchmarks created by the CAWS CAREER GAUGE. That is, they fit into one or more different groups that also define pitching greatness as explained elsewhere in this monograph.

Here are the other modern era starting pitchers who have put up HOF numbers but who do not have 300 career win shares.

A CAWS Score of At Least 220 (13 pitchers)

Bob Feller<br>Burleigh Grimes<br>Hal Newhouser<br>Juan Marichal<br>Carl Mays<br>Stan Covaleski<br>Jim Bunning<br>Don Drysdale<br>Wes Ferrell<br>Bucky Walters<br>\section*{Red Faber}<br>Bob Lemon<br>Dazzy Vance

All of these pitchers except for Mays, Ferrell and Walters are already in Cooperstown. Hopefully, the Veterans Committee will vote each of them in one of these days.

## A CV Score of 200 but CAWS < 220 (3 pitchers)

Pedro Martinez<br>Whitey Ford<br>Urban Shocker

Martinez and Ford are in the Hall but Shocker is not.
There are a few other pitchers from the modern era who achieved pitching greatness while pitching relatively fewer innings. Here they are

A CAWS Score of 180 with Fewer Than 2400 Innings Pitched (8 pitchers)

Mariano Rivera<br>Pedro Martinez<br>Sandy Koufax<br>Hoyt Wilhelm<br>Goose Gossage<br>Roy Halladay<br>Dizzy Dean<br>Clayton Kershaw

All of these pitchers who have been eligible are in the Hall of Fame. Pedro Martinez also appears in the list above (CV > 200).

Finally, there are three relief pitchers who have achieved greatness with still fewer innings pitched. Mariano, of course, is already included in the list above.

A CAWS Score of 160 with Fewer Than 1500 Innings Pitched (3 pitchers)

Mariano Rivera
Lee Smith
Bruce Sutter
All three of these pitchers are in the Hall of Fame. So, it would appear that the CAWS Gauge is "right on the money."

## Hall of Fame Elections in the $21{ }^{\text {st }}$ Century

The CAWS Career Gauge (CCG) has ranked all of the outstanding players of the modern era (since 1920) according to the numbers that they produced on the field (see the lists at the end of this monograph). In addition, the CCG has also created a series of benchmarks to determine whether a player seems to have the numbers to suggest he belongs in the Hall of Fame.

The question arises: What is the correlation between the benchmarks established by the CAWS Gauge and those players actually elected to the Hall by the BBWAA? And the answer is - quite good.

Through the 2018 ballot, the BBWAA had elected thirty-five (35) major league players to the Hall of Fame since 2001. And, of course, there is sometimes a difference of opinion as to whether a particular player really "belongs in the Hall."

And, according to the CCG, the BBWAA had done a rather good job of electing players to the Hall in the 21st century through 2018. That is, 31 of the 35 players that were elected do indeed seem to have "HOF numbers." And one other player (John Smoltz) came so close that he can hardly be called a "mistake." Which means that the CCG and the voting results agreed about $91 \%$ of the time (a grade of A for the BBWAA).

I find this "level of agreement" between the CAWS Gauge and the actual voting results of the BBWAA to be significant.

Here are the sixteen (16) players elected between 2001 and 2010. Fourteen (14) of these players appear to have HOF numbers. Some of these are "no brainers" as far as HOF credentials are concerned. I will comment on some of these choices.

## 2001 - Dave Winfield and Kirby Puckett

Kirby Puckett's election was a bit controversial because he did not have the "obvious HOF numbers" of someone like Dave Winfield. But the CCG suggests he did meet the benchmark for a "shorter but great career" = a CAWS score of 250 in fewer than 1800 games.
I have found only 10 position players in the modern era who satisfy this benchmark and ALL ARE IN THE HALL OF FAME. Here they are: Joe DiMaggio, Earl Averill, Hank Greenberg, Lou Boudreau, Bill Terry, Larry Doby, Jackie Robinson, Mickey Cochrane, Kirby Puckett and Bill Dickey.

## 2002 - Ozzie Smith

Perhaps the greatest fielding shortstop of all time. He has HOF numbers when given the defensive adjustment for shortstops built into the CCG.

## 2003 - Eddie Murray and Gary Carter

Two easy choices. Gary Carter is ranked as the \#4 catcher of the modern era (behind only Yogi Berra, Johnny Bench and Mike Piazza) while Eddie Murray is ranked as the \#7 first baseman.

## 2004 - Paul Molitor and Dennis Eckersley

Paul Molitor is one of only two DHs who have HOF numbers (Frank Thomas is the other).
Dennis Eckersley may have been a somewhat controversial choice. But the CCG suggests he does have HOF numbers because he meets a CAWS benchmark $=300$ career win shares for a pitcher. Consider that in the modern era only 23 pitchers have earned 300 career win shares and ALL ARE IN THE HALL OF FAME (except Roger Clemens).

## 2005 - Wade Boggs and Ryne Sandberg

Again, two easy choices. Wade Boggs has the \#4 best numbers for a third baseman (behind Mike Schmidt, Eddie Mathews and George Brett) while Ryne Sandberg is the \#7 second baseman of the era.

## 2006 - Bruce Sutter

Bruce Sutter's election was controversial because he had pitched only 1042 innings and was the first "true reliever" (fewer than 1500 innings) ever elected.
The CCG suggests that he did meet the benchmark for true relievers $=\mathrm{a}$ CAWS score of 160 with fewer than 1500 innings. Only three pitchers have done this and ALL THREE ARE IN THE HALL OF FAME: Mariano Rivers, Lee Smith and Bruce Sutter.

## 2007-Cal Ripken Jr. and Tony Gwynn

Both have obvious HOF numbers. Cal Ripken is the \#3 shortstop of the modern era (behind only ARod and Arky Vaughan). And Tony Gwynn checks in as the \#10 right fielder.

## 2008 - Rich Gossage

I do not know if Gossage's election to the Hall could be considered controversial. But the CCG suggests that he does have HOF numbers. He meets the HOF benchmark for a pitcher = a CAWS score of 180 with fewer than 2400 innings pitched.
I have found only eight pitchers who have not reached a score of 220 but have met this benchmark at some point in their careers. Here they are: Pedro Martinez, Mariano Rivera, Sandy Koufax, Hoyt Wilhelm, Rich Gossage, Roy Halladay, Clayton Kershaw and Dizzy Dean. With the election of Mariano and Halladay in 2019, seven of the eight are now in the Hall of Fame. The CAWS Gauge suggests all eight have HOF numbers.

## 2009 - Rickey Henderson and Jim Rice

From 2001 through 2009, the CCG suggests that the BBWAA elected fourteen (14) players in a row (including Rickey) who had HOF numbers $=100 \%$ accuracy for the BBWAA. (Rickey Henderson is the \#5 left fielder of the era).
Unfortunately, with the election of Jim Rice in 2009, the BBWAA dropped the ball. According to the CCG, Rice was a solid player but did not even come close to HOF numbers during his career. His CAWS score is 245 (where 280 is the benchmark).

Here are a few players who also did not achieve HOF numbers but whose career numbers are superior to those of Jim Rice: Rusty Staub, Bobby Bonds, Ken Singleton, Frank Howard, Vada Pinson, Reggie Smith, Dave Parker and Minnie Minoso ( and there are many others).

## 2010 - Andre Dawson

Andre Dawson is quite similar to Jim Rice in that he did not come close to posting HOF numbers according to the CCG - although his numbers are somewhat better than those of Rice. His CAWS score is 261 - well short of the 280 benchmark. The group of players mentioned above also all had better numbers than Dawson.

So, from 2001 to 2009, the BBWAA elected 14 players in a row - all of whom had legitimate HOF numbers according to the CCG. However, also in 2009, they stumbled when they elected Jim Rice and again in 2010 when they elected Andre Dawson.

OK, so what about 2011 to 2018 ? Nineteen players were elected in this time frame - seventeen of whom had HOF numbers according to the CCG (and both John Smoltz and Trevor Hoffman came quite close).

Here are those 19 players.

## 2011 - Bert Blyleven and Roberto Alomar

Roberto Alomar has obvious HOF numbers. He is the 5th best second baseman of the modern era. But Bert Blyleven's election in his final year of eligibility represented a triumph for sabermetrics. With 339 career win shares and a core value of 218 , he is the 16th best starting pitcher of the modern era - ahead of such Hall of Famers as Early Wynn, Juan Marichal, Tom Glavine, Jim Bunning and Don Drysdale.

2012 - Barry Larkin - An easy choice - the 8th best shortstop of the era.

2014 - Frank Thomas, Greg Maddux and Tom Glavine
All three have obvious HOF numbers. Frank Thomas is ranked \#27 among all position players, Greg Maddux is the \#5 best starting pitcher while Tom Glavine is \#26.

2015 - Randy Johnson, Pedro Martinez, John Smoltz and Craig Biggio
Johnson, Martinez and Biggio are "no-brainers" for the Hall. According to the CCG, Smoltz fell just short of HOF numbers but came closer than just about any other pitcher - so it is hard to fault the voters here.

## 2016 - Ken Griffey Jr. and Mike Piazza

Griffey, of course, was an easy choice - the \#4 center fielder of the era behind only Mays, Mantle and DiMaggio. And Piazza has the 3rd best numbers of any catcher of the era - behind only Yogi Berra and Johnny Bench.

## 2017 - Jeff Bagwell, Tim Raines and Ivan Rodriguez

All three have HOF numbers. Bagwell has the \#37 best numbers of the era and the under-appreciated Tim Raines is not far behind at \#45. Pudge Rodriguez (like Ozzie Smith mentioned above) has HOF numbers according to the CCG when granted the defensive adjustment for his position.

2018 - Chipper Jones, Vladimir Guerrero, Jim Thome and Trevor Hoffman
Jones, Guerrero and Thome were all easy choices since all have a CAWS score above the 280 benchmark. But Trevor Hoffman does not have the numbers according to the CCG. Only three "true relievers" (fewer than 1500 innings) have HOF numbers: Mariano Rivera, Lee Smith and Bruce Sutter.

As mentioned earlier, the CAWS Gauge suggests that the BBWAA had done a good job of electing players to the Hall of Fame in the 21st century through 2018.

So, what happened in 2019? Four players were elected to the Hall: Mariano Rivera (unanimously), Roy Halladay, Edgar Martinez and Mike Mussina.

As mentioned above (under Rich Gossage), both Mariano and Halladay have obvious HOF numbers and were elected in their first year on the ballot.

Mike Mussina can best be described as a very solid pitcher who just fell short of HOF numbers according to the CAWS Gauge. And, so, his election is somewhat "understandable" - since he was so close.

Edgar Martinez is a somewhat different story. His CAWS score of 269 is well below the 280 benchmark. Here are a few other players with numbers comparable to his but who also do not have HOF numbers.

|  | CWS | CV | CAWS |
| :--- | :--- | :--- | :---: |
| Ken Singleton | 302 | 260 | 271 |
| Frank Howard | 297 | 260 | 270 |
| Will Clark | 321 | 252 | 269 |
| Edgar Martinez | $\mathbf{3 1 4}$ | $\mathbf{2 5 4}$ | $\mathbf{2 6 9}$ |
| Vada Pinson | 321 | 252 | 269 |
| Reggie Smith | 325 | 250 | 269 |

Edgar Martinez joins Harold Baines as one of the "least deserving" players to be inducted into the Hall of Fame in recent memory.

## PART 2

## THE LISTS

## The $21^{\text {st }}$ Century Hall of Famers (36)

Here is an interesting question. How many of the "great baseball players" of modern times (those with Hall of Fame numbers) have played during the $21^{\text {st }}$ century (since 2001)? Let's first take a look at this question for position players and then for pitchers.

## The Position Players (28)

At the end of the 2018 season, there were one hundred and four (104) position players from the modern era (since 1920) who had posted Hall of Fame numbers during their playing careers. That is the conclusion of the CAWS CAREER GAUGE.

Of those one hundred and four position players with HOF numbers, only six were still active during the 2018 season.

And twenty-two other players (with HOF numbers) were still playing in 2001 or later. That means a total of twenty-eight (28) players or $27 \%$ of the "great" position players of modern times were still active in the $21^{\text {st }}$ century.

Here are the six position players who were active during 2018 and who have HOF numbers. The first number is career win shares, the second is core value (the win shares for the ten best seasons) and the third is the CAWS score.

|  |  | CWS | CV | CAWS |
| :--- | :---: | :--- | :--- | :---: |
| Albert Pujols | 1B | 476 | 347 | 379 |
| Miguel Cabrera | 1B | 390 | 295 | 319 |
| Robinson Cano | 2B | 350 | 285 | 301 |
| Adrian Beltre | 3B | 390 | 248 | 284 |
| Chase Utley | 2B | 292 | 249 | 260 |
| Joe Mauer | C | 293 | 241 | 254 |

CAWS $=250$ is the benchmark for HOF numbers for a catcher and 260 for a second baseman. Both Chase Utley and Joe Mauer "just made" the benchmarks in 2018.

Here are the twenty-two retired position players who according to the CCG have HOF numbers (and played during the 2001 season or later).
Bold print $=$ Hall of Famer.

|  |  | CWS | CV | CAWS |
| :--- | :---: | :---: | :---: | :---: |
| Barry Bonds | LF | 707 | 427 | 497 |
| Alex Rodriguez | SS | 498 | 330 | 372 |
| Gary Sheffield | LF | 430 | 305 | 336 |
| Craig Biggio | 2B | $\mathbf{4 2 8}$ | $\mathbf{2 9 4}$ | $\mathbf{3 2 8}$ |
| Frank Thomas | DH | $\mathbf{4 0 5}$ | $\mathbf{3 0 1}$ | $\mathbf{3 2 7}$ |
| Chipper Jones | 3B | $\mathbf{4 2 3}$ | $\mathbf{2 8 1}$ | $\mathbf{3 1 7}$ |
| Jeff Bagwell | 1B | $\mathbf{3 8 8}$ | $\mathbf{2 8 7}$ | $\mathbf{3 1 2}$ |
| Derek Jeter | SS | 415 | 275 | 310 |
| Ken Griffey Jr | CF | $\mathbf{4 0 3}$ | $\mathbf{2 7 8}$ | $\mathbf{3 0 9}$ |
| Tim Raines | LF | $\mathbf{3 9 0}$ | $\mathbf{2 7 5}$ | $\mathbf{3 0 4}$ |
| Roberto Alomar | 2B | $\mathbf{3 7 5}$ | $\mathbf{2 7 8}$ | $\mathbf{3 0 2}$ |
| Jim Thome | 1B | $\mathbf{3 9 2}$ | $\mathbf{2 7 0}$ | $\mathbf{3 0 1}$ |
| Mark McGwire | 1B | 342 | 283 | 298 |
| Manny Ramirez | LF | 394 | 263 | 296 |
| Rafael Palmeiro | 1B | 387 | 257 | 290 |
| Mike Piazza | C | $\mathbf{3 2 5}$ | $\mathbf{2 7 3}$ | $\mathbf{2 8 6}$ |
| Lance Berkman | 1B | 311 | 276 | 285 |
| Vladimir Guerrero | RF | $\mathbf{3 3 3}$ | $\mathbf{2 6 9}$ | $\mathbf{2 8 5}$ |
| Barry Larkin | SS | $\mathbf{3 4 7}$ | $\mathbf{2 5 8}$ | $\mathbf{2 8 0}$ |
| Jeff Kent | 2B | 339 | 252 | 274 |
| Carlos Beltran | CF | 370 | 240 | 273 |
| Ivan Rodriguez | C | $\mathbf{3 4 5}$ | $\mathbf{2 3 4}$ | $\mathbf{2 6 2}$ |

One might be inclined to argue about the appropriate playing position for Alex Rodriguez and Frank Thomas. But the fact of the matter is that through their respective careers ARod played more games at shortstop than anywhere else and Thomas played more games at DH than at first base.

The Pitchers (8)

Through the end of the 2018 season, the CAWS CAREER GAUGE suggests that there have been only forty-eight (48) pitchers since 1920 who have posted Hall of Fame numbers during their careers.

Of these forty-eight pitchers with HOF numbers, only one was active during the 2018 season.

## $\begin{array}{llll}\text { Clayton Kershaw } & 188 & 182\end{array}$

Another seven of these 48 pitchers had played in 2001 or later. So, eight pitchers or $17 \%$ of the "great" pitchers of modern times were still active in the $21^{\text {st }}$ century.

Here are those seven other pitchers. Bold print $=$ Hall of Famer.

|  | CWS | CV | CAWS |
| :--- | :--- | :--- | :---: |
| Roger Clemens | 432 | 260 | 303 |
| Greg Maddux | $\mathbf{3 9 8}$ | $\mathbf{2 4 6}$ | $\mathbf{2 8 4}$ |
| Randy Johnson | $\mathbf{3 2 6}$ | $\mathbf{2 3 0}$ | $\mathbf{2 5 4}$ |
| Tom Glavine | $\mathbf{3 1 4}$ | $\mathbf{2 0 3}$ | $\mathbf{2 3 1}$ |
| Pedro Martinez | $\mathbf{2 5 6}$ | $\mathbf{2 0 6}$ | $\mathbf{2 1 9}$ |
| Roy Halladay | $\mathbf{2 2 6}$ | $\mathbf{1 9 9}$ | $\mathbf{2 0 6}$ |
| Mariano Rivera | $\mathbf{2 7 2}$ | $\mathbf{1 7 5}$ | $\mathbf{1 9 9}$ |

So, the CAWS CAREER GAUGE has identified a total of $28+8=36$ players who have played in the $21^{\text {st }}$ century and who have HOF numbers. Of course, many of these players began their careers before 2001.

Since 1920, there have been a total of $104+48=152$ players who have posted such numbers during their careers.

The question could be asked: Is this number of Hall of Famers in this time frame "reasonable?" And the rough answer would be: Yes, it seems so.

1920 to 2018 is a 99 -year period. If we take any 20 -year time frame, it seems that approximately $20 / 99=.20=20 \%$ of the HOF players from the whole period should be playing during that time frame.

Well, $20 \%$ of 152 players $=30$ players. So, when the CAWS Gauge suggests that there have been 36 such players in this time frame, this certainly seems to be within the realm of "reasonableness."

Unfortunately, some of these thirty-six (36) $21^{\text {st }}$ century players who have put up HOF numbers during their careers may have been tainted by the PEDS scandal. Whether or not they will ever be elected to the Hall of Fame is at this point a matter of conjecture.

## Modern Players with HOF Numbers at Each Position

There are one hundred and four (104) position players in the modern era who have Hall of Fame numbers according to the CAWS CAREER GAUGE. Here is the distribution by position.

First Base 16
Second Base 14
Third Base 10
Shortstop 13
Left Field 14
Center Field 11
Right Field 12
Catcher 12
DH 2

These lists will show the names of those players who had HOF numbers at each position.

All numbers include the 2018 season.
Bold print $=$ Hall of Famer
Italic $=$ active player in 2018
CWS = Career Win Shares
CV = Core Value (sum of win shares for 10 best seasons)
CAWS $=$ Career Value $=\mathrm{CV}+.25(\mathrm{CWS}-\mathrm{CV})$

The 12 Right Fielders with HOF Numbers (CAWS = 280)

|  |  |  | CWS | CV |
| :--- | :--- | :--- | :--- | :--- | CAWS

Note that all have been elected to the Hall of Fame.

The 14 Left Fielders with HOF Numbers (CAWS = 280)

|  |  | CWS | CV | CAWS |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| 1. | Barry Bonds | $(1986-2007)$ | 707 | 427 | 497 |
| 2. | Stan Musial | $\mathbf{( 1 9 4 1 - 1 9 6 3 )}$ | $\mathbf{6 0 4}$ | $\mathbf{3 7 8}$ | $\mathbf{4 3 5}$ |
| 3. | Ted Williams | $\mathbf{( 1 9 3 9 - 1 9 6 0 )}$ | $\mathbf{5 5 5}$ | $\mathbf{3 9 4}$ | $\mathbf{4 3 4}$ |
| 4. | Pete Rose | $(1963-1986)$ | 547 | 307 | 367 |
| 5. | Rickey Henderson | $(\mathbf{1 9 7 9 - 2 0 0 3})$ | $\mathbf{5 3 5}$ | $\mathbf{3 0 8}$ | $\mathbf{3 6 5}$ |
| 6. | Carl Yastrzemski | $\mathbf{( 1 9 6 1 - 1 9 8 3 )}$ | $\mathbf{4 8 8}$ | $\mathbf{2 8 6}$ | $\mathbf{3 3 7}$ |
| 7. | Gary Sheffield | $(1988-2009)$ | 430 | 305 | 336 |
| 8. | Tim Raines | $\mathbf{( 1 9 7 9 - 2 0 0 2 )}$ | $\mathbf{3 9 0}$ | $\mathbf{2 7 5}$ | $\mathbf{3 0 4}$ |
| 9. | Billy Williams | $\mathbf{( 1 9 5 9 - 1 9 7 6 )}$ | $\mathbf{3 7 4}$ | $\mathbf{2 7 9}$ | $\mathbf{3 0 3}$ |
| 10. | Al Simmons | $\mathbf{( 1 9 2 4 - 1 9 4 4 )}$ | $\mathbf{3 7 5}$ | $\mathbf{2 7 6}$ | $\mathbf{3 0 1}$ |
| 11. Manny Ramirez | $(1993-2011)$ | 394 | 263 | 296 |  |
| 12. Willie Stargell | $\mathbf{( 1 9 6 2 - 1 9 8 2 )}$ | $\mathbf{3 7 0}$ | $\mathbf{2 6 3}$ | $\mathbf{2 9 0}$ |  |
| 13. Goose Goslin | $\mathbf{( 1 9 2 1 - 1 9 3 8 )}$ | $\mathbf{3 5 5}$ | $\mathbf{2 6 3}$ | $\mathbf{2 8 6}$ |  |
| 14. Lou Brock | $\mathbf{( 1 9 6 1 - 1 9 7 9 )}$ | $\mathbf{3 4 8}$ | $\mathbf{2 6 4}$ | $\mathbf{2 8 5}$ |  |

Note that all have been elected to the Hall of Fame except for Pete Rose who is banned and three others suspected of using PEDs.

The 11 Center Fielders with HOF Numbers (CAWS = 270)

|  |  | CWS | CV | CAWS |
| :--- | :---: | :--- | :---: | :---: |
| 1. Willie Mays | $(\mathbf{1 9 5 1 - 1 9 7 3 )}$ | $\mathbf{6 4 2}$ | $\mathbf{3 8 9}$ | $\mathbf{4 5 2}$ |
| 2. Mickey Mantle | $\mathbf{( 1 9 5 1 - 1 9 6 8 )}$ | $\mathbf{5 6 5}$ | $\mathbf{3 9 9}$ | $\mathbf{4 4 1}$ |
| 3. Joe DiMaggio | $\mathbf{( 1 9 3 6 - 1 9 5 1 )}$ | $\mathbf{3 8 7}$ | $\mathbf{3 2 5}$ | $\mathbf{3 4 1}$ |
| 4. Ken Griffey Jr | $\mathbf{( 1 9 8 9 - 2 0 1 0 )}$ | $\mathbf{4 0 3}$ | $\mathbf{2 7 8}$ | $\mathbf{3 0 9}$ |
| 5. Duke Snider | $(\mathbf{1 9 4 7 - 1 9 6 4 )}$ | $\mathbf{3 5 2}$ | $\mathbf{2 8 9}$ | $\mathbf{3 0 5}$ |
| 6. Jimmy Wynn | $(1963-1977)$ | 305 | 269 | 278 |
| 7. Richie Ashburn | $(\mathbf{1 9 4 8 - 1 9 6 2 )}$ | $\mathbf{3 2 9}$ | $\mathbf{2 5 7}$ | $\mathbf{2 7 5}$ |
| 8. Carlos Beltran | $(1998-2017)$ | 370 | 240 | 273 |
| 9. Earl Averill | $(\mathbf{1 9 2 9 - 1 9 4 1})$ | $\mathbf{2 8 0}$ | $\mathbf{2 6 8}$ | $\mathbf{2 7 1}$ |
|  |  |  |  |  |
| $\quad$ Larry Doby* | $(\mathbf{1 9 4 7 - 1 9 5 9})$ | $\mathbf{2 6 8}$ | $\mathbf{2 5 7}$ | $\mathbf{2 6 0}$ |
| Kirby Puckett* | $\mathbf{( 1 9 8 4 - 1 9 9 5 )}$ | $\mathbf{2 8 1}$ | $\mathbf{2 4 7}$ | $\mathbf{2 5 6}$ |

* $=$ Shorter but great career.

Note that only Jimmy Wynn has been passed over for election to the Hall. Carlos Beltran is not yet eligible.

The 16 First Basemen with HOF Numbers (CAWS = 280)

|  |  |  | CWS | CV | CAWS |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1. | Lou Gehrig | (1923-1939) | 489 | 384 | 410 |
| 2. | Albert Pujols | (2001- ) | 476 | 347 | 379 |
| 3. | Jimmie Foxx | (1925-1945) | 435 | 325 | 353 |
| 4. | Miguel Cabrera | (2003- ) | 390 | 295 | 319 |
| 5. | Willie McCovey | (1959-1980) | 408 | 285 | 316 |
| 6. | Dick Allen | (1963-1977) | 342 | 304 | 314 |
| 7. | Eddie Murray | (1977-1997) | 437 | 273 | 314 |
| 8. | Jeff Bagwell | (1991-2005) | 388 | 287 | 312 |
| 9. | Johnny Mize | (1936-1953) | 339 | 296 | 307 |
| 10. | Harmon Killebrew | (1954-1975) | 374 | 279 | 303 |
| 11. | Jim Thome | (1991-2012) | 392 | 270 | 301 |
| 12. | Mark McGwire | (1986-2001) | 342 | 283 | 298 |
| 13. | Rafael Palmeiro | (1986-2005) | 387 | 257 | 290 |
| 14. | Lance Berkman | (1999-2013) | 311 | 276 | 285 |
|  | Hank Greenberg* |  | 267 | 262 | 263 |
|  | Bill Terry* |  | 278 | 255 | 261 |

Note - If Frank Thomas were considered to be a first baseman, he would be \#4 on this list with a CAWS score of 327 . However, since he played more games as a designated hitter, that is where he is listed.

The 14 Second Basemen with Hall of Fame Numbers (CAWS = 260)

|  |  |  | CWS | CV | CAWS |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1. | Rogers Hornsby | (1915-1937) | 502 | 381 | 411 |
| 2. | Joe Morgan | (1963-1984) | 512 | 341 | 384 |
| 3. | Craig Biggio | (1988-2007) | 428 | 294 | 328 |
| 4. | Charlie Gehringer | (1924-1942) | 383 | 280 | 306 |
| 5. | Roberto Alomar | (1988-2004) | 375 | 278 | 302 |
| 6. | Robinson Cano | (2005- ) | 350 | 285 | 301 |
| 7. | Ryne Sandberg | (1981-1997) | 346 | 278 | 295 |
| 8. | Rod Carew | (1967-1985) | 384 | 257 | 289 |
| 9. | Frankie Frisch | (1919-1937) | 366 | 256 | 284 |
| 10. | Jeff Kent | (1992-2008) | 339 | 252 | 274 |
| 11. | Bobby Grich | (1970-1986) | 329 | 253 | 272 |
| 12. | Lou Whitaker | (1977-1995) | 351 | 232 | 262 |
| 13. | Chase Utley | (2003 ) | 292 | 249 | 260 |
|  | Jackie Robinson* | (1947-1956) | 257 | 257 | 257 |

* $=$ Shorter but great career.

Three second basemen who have been eligible (Kent, Grich and Whitaker) are not yet in the Hall of Fame.

The 10 Third Basemen with Hall of Fame Numbers (CAWS = 270)

|  |  | CWS | CV | CAWS |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| 1. | Mike Schmidt | $(\mathbf{( 1 9 7 2 - 1 9 8 9 )}$ | $\mathbf{4 6 7}$ | $\mathbf{3 3 8}$ | $\mathbf{3 7 0}$ |
| 2. | Eddie Mathews | $\mathbf{( 1 9 5 2 - 1 9 6 8 )}$ | $\mathbf{4 5 0}$ | $\mathbf{3 3 3}$ | $\mathbf{3 6 2}$ |
| 3. | George Brett | $(\mathbf{1 9 7 3 - 1 9 9 3 )}$ | $\mathbf{4 3 2}$ | $\mathbf{2 9 6}$ | $\mathbf{3 3 0}$ |
| 4. | Wade Boggs | $\mathbf{( 1 9 8 2 - 1 9 9 9 )}$ | $\mathbf{3 9 4}$ | $\mathbf{2 9 1}$ | $\mathbf{3 1 7}$ |
| 5. | Chipper Jones | $\mathbf{( 1 9 9 3 - 2 0 1 2 )}$ | $\mathbf{4 2 3}$ | $\mathbf{2 8 1}$ | $\mathbf{3 1 7}$ |
| 6. | Ron Santo | $\mathbf{( 1 9 6 0 - 1 9 7 4 )}$ | $\mathbf{3 2 4}$ | $\mathbf{2 7 5}$ | $\mathbf{2 8 7}$ |
| 7. | Adrian Beltre | $(1998-\mathbf{)}$ | 390 | 248 | 284 |
| 8. | Darrell Evans | $(1969-1989)$ | 363 | 253 | 281 |
| 9. | Brooks Robinson | $\mathbf{( 1 9 5 5 - 1 9 7 7 )}$ | $\mathbf{3 5 6}$ | $\mathbf{2 4 7}$ | $\mathbf{2 7 4}$ |
| 10. | Stan Hack | $(1932-1947)$ | 316 | 256 | 271 |

Only Darrell Evans and Stan Hack have been eligible and not yet elected to the Hall.

The 13 Shortstops with Hall of Fame Numbers (CAWS = 250)

|  |  |  | CWS | CV | CAWS |
| :--- | :--- | :--- | :--- | :--- | :--- |
| 1. | Alex Rodriguez | $(1994-2016)$ | 498 | 330 | 372 |
| 2. | Arky Vaughan | $(\mathbf{1 9 3 2 - 1 9 4 8})$ | $\mathbf{3 5 6}$ | $\mathbf{3 0 8}$ | $\mathbf{3 2 0}$ |
| 3. | Cal Ripken Jr | $(\mathbf{1 9 8 1 - 2 0 0 1 )}$ | $\mathbf{4 2 7}$ | $\mathbf{2 7 6}$ | $\mathbf{3 1 4}$ |
| 4. | Robin Yount | $(\mathbf{1 9 7 4 - 1 9 9 3})$ | $\mathbf{4 2 3}$ | $\mathbf{2 7 8}$ | $\mathbf{3 1 4}$ |
| 5. | Derek Jeter | $(1995-2014)$ | 415 | 275 | 310 |
| 6. | Luke Appling | $(\mathbf{1 9 3 0 - 1 9 5 0})$ | $\mathbf{3 7 8}$ | $\mathbf{2 7 5}$ | $\mathbf{3 0 1}$ |
| 7. | Joe Cronin | $(\mathbf{1 9 2 6 - 1 9 4 5 )}$ | $\mathbf{3 3 3}$ | $\mathbf{2 7 5}$ | $\mathbf{2 9 0}$ |
| 8. | Barry Larkin | $\mathbf{( 1 9 8 6 - 2 0 0 4 )}$ | $\mathbf{3 4 7}$ | $\mathbf{2 5 8}$ | $\mathbf{2 8 0}$ |
| 9. | Ernie Banks | $(\mathbf{1 9 5 3 - 1 9 7 1 )}$ | $\mathbf{3 3 2}$ | $\mathbf{2 4 7}$ | $\mathbf{2 6 8}$ |
| 10. | PeeWee Reese | $\mathbf{( 1 9 4 0 - 1 9 5 8 )}$ | $\mathbf{3 1 4}$ | $\mathbf{2 4 6}$ | $\mathbf{2 6 3}$ |
| 11. | Lou Boudreau | $\mathbf{( 1 9 3 8 - 1 9 5 2 )}$ | $\mathbf{2 7 7}$ | $\mathbf{2 5 5}$ | $\mathbf{2 6 1}$ |
| 12. | llan Trammell | $\mathbf{( 1 9 7 7 - 1 9 9 6 )}$ | $\mathbf{3 1 8}$ | $\mathbf{2 3 8}$ | $\mathbf{2 5 8}$ |
| 13. | Ozzie Smith | $(\mathbf{1 9 7 8 - 1 9 9 6})$ | $\mathbf{3 2 5}$ | $\mathbf{2 2 6}$ | $\mathbf{2 5 1}$ |

All these shortstops who have been eligible have been elected to the Hall.

The 12 Catchers with Hall of Fame Numbers (CAWS = 250)

|  |  | CWS | CV | CAWS |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| 1. | Yogi Berra | $(\mathbf{1 9 4 6 - 1 9 6 5 )}$ | $\mathbf{3 7 5}$ | $\mathbf{2 7 6}$ | $\mathbf{3 0 1}$ |
| 2. | Johnny Bench | $(\mathbf{1 9 6 7 - 1 9 8 3})$ | $\mathbf{3 5 6}$ | $\mathbf{2 7 7}$ | $\mathbf{2 9 7}$ |
| 3. | Mike Piazza | $(\mathbf{1 9 9 2 - 2 0 0 8 )}$ | $\mathbf{3 2 5}$ | $\mathbf{2 7 3}$ | $\mathbf{2 8 6}$ |
| 4. | Gary Carter | $(\mathbf{1 9 7 4 - 1 9 9 2 )}$ | $\mathbf{3 3 7}$ | $\mathbf{2 6 3}$ | $\mathbf{2 8 2}$ |
| 5. | Carlton Fisk | $\mathbf{( 1 9 6 9 - 1 9 9 3 )}$ | $\mathbf{3 6 8}$ | $\mathbf{2 4 0}$ | $\mathbf{2 7 2}$ |
| 6. | Ivan Rodriguez | $\mathbf{( 1 9 9 1 - 2 0 1 1 )}$ | $\mathbf{3 4 5}$ | $\mathbf{2 3 4}$ | $\mathbf{2 6 2}$ |
| 7. | Joe Torre | $\mathbf{( 1 9 6 0 - 1 9 7 7 )}$ | $\mathbf{3 1 5}$ | $\mathbf{2 4 4}$ | $\mathbf{2 6 2}$ |
| 8. | Ted Simmons | $(1968-1988)$ | 315 | 240 | 259 |
| 9. | Mickey Cochrane | $(\mathbf{1 9 2 5 - 1 9 3 7 )}$ | $\mathbf{2 7 5}$ | $\mathbf{2 5 0}$ | $\mathbf{2 5 6}$ |
| 10. | Bill Dickey | $(\mathbf{1 9 2 8 - 1 9 4 6})$ | $\mathbf{3 1 4}$ | $\mathbf{2 3 5}$ | $\mathbf{2 5 5}$ |
| 11. | Joe Mauer | $(2004-2018)$ | 293 | 241 | 254 |
| 12. | Gabby Hartnett | $(\mathbf{1 9 2 2 - 1 9 4 1 )}$ | $\mathbf{3 2 5}$ | $\mathbf{2 2 9}$ | $\mathbf{2 5 3}$ |

Joe Torre is in the Hall of Fame as a manager - not as a player - although he deserves to be there as a player. Only Ted Simmons has been passed over for election.

The 2 Designated Hitters with Hall of Fame Numbers (CAWS = 280)

| Frank Thomas | $(1990-2008)$ | 405 | 301 | 327 |
| :--- | :--- | :--- | :--- | :--- |
| Paul Molitor | $(1978-1998)$ | 414 | 270 | 306 |

Paul Molitor and Frank Thomas each played more games as a designated hitter than at any other position.

## The Position Players with HOF Numbers Not Yet in the Hall of Fame (24)

All numbers include the 2018 season.
Italic $=$ Active Player in 2018
CWS = Career Win Shares
CV = Core Value (sum of win shares for 10 best seasons)
CAWS = Career Assessment/Win Shares

$$
=\mathrm{CV}+.25(\mathrm{CWS}-\mathrm{CV})
$$

## 24 Players with HOF Numbers Not Yet in the Hall of Fame

|  |  | CWS | CV | CAWS |
| :--- | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| Barry Bonds | LF | 707 | 427 | 497 |
| Albert Pujols | $1 B$ | 476 | 347 | 379 |
| Alex Rodriguez | SS | 498 | 330 | 372 |
| Pete Rose | LF | 547 | 307 | 367 |
| Gary Sheffield | LF | 430 | 305 | 336 |
| Miguel Cabrera | $1 B$ | 390 | 295 | 319 |
| Dick Allen | 1B | 342 | 304 | 314 |
| Derek Jeter | SS | 415 | 275 | 310 |
| Robinson Cano | 2B | 350 | 285 | 301 |
| Mark McGwire | 1B | 342 | 283 | 298 |
| Manny Ramirez | LF | 394 | 263 | 296 |
| Rafael Palmeiro | 1B | 387 | 257 | 290 |
| Lance Berkman | 1B | 311 | 276 | 285 |
| Adrian Beltre | 3B | 390 | 248 | 284 |
| Darrell Evans | 3B | 363 | 253 | 281 |
|  |  |  |  |  |
| Jimmy Wynn | CF | 305 | 269 | 278 |
| Jeff Kent | 2B | 339 | 252 | 274 |
| Carlos Beltran | CF | 370 | 240 | 273 |
| Bobby Grich | 2B | 329 | 253 | 272 |
| Stan Hack | 3B | 316 | 256 | 271 |
| Lou Whitaker | 2B | 351 | 232 | 262 |
| Chase Utley | 2B | 292 | 249 | 260 |
| Ted Simmons | C | 315 | 240 | 259 |
| Joe Mauer | $C$ | 293 | 241 | 254 |

## The Pitchers with HOF Numbers Not Yet in the Hall of Fame (6)

1. $\mathbf{C A W S}=220-4$ Pitchers

|  | CWS | CV | CAWS |  |
| :--- | :---: | :---: | :---: | :---: |
| Roger Clemens | $(1984-2007)$ | 432 | 260 | 303 |
| Carl Mays | $(1915-1929)$ | 256 | 230 | 237 |
| Wes Ferrell | $(1927-1941)$ | 233 | 229 | 230 |
| Bucky Walters | $(1931-1950)$ | 258 | 220 | 230 |

2. $\mathbf{C V}=200$ - 1 Pitcher

| Urban Shocker | $(1916-1928)$ | 225 | 210 |
| :--- | :--- | :--- | :--- | :--- |

3. Pitchers with 180 CAWS in fewer than 2400 Innings $=1$

|  | IP | CWS | CV | CAWS |
| :--- | :---: | :--- | :--- | :---: |
| Clayton Kershaw (through 2018) | 2096 | 188 | 182 | 184 |

## The 152 Best Players of the Modern Era

There are one hundred and fifty-two (152) players in the modern era (1920 to 2019) who have posted Hall of Fame numbers on the playing field according to the CAWS CAREER GAUGE (CCG). One hundred and four (104) of those are position players and forty-eight (48) are pitchers. (A player must have played for at least ten full seasons to have a CAWS score.) Here are those players.

## The List of the 104 Position Players from the Modern Era with HOF Numbers

Here are the benchmarks for Hall of Fame numbers for position players according to the CCG:

1. A CAWS score of 280 ( 76 players).
2. A CAWS score of 270 for CF and 3B (6 players).
3. A CAWS score of 260 for 2B (4 players).
4. A CAWS score of 250 for SS and C (13 players).
5. A shorter but great career - CAWS score of 250 in fewer than 1800 games (5 players).

All numbers include the 2018 season.
Bold = Hall of Famer
Italic $=$ Active Player in 2018
CWS = Career Win Shares
CV = Core Value (sum of win shares for 10 best seasons)
CAWS $=$ Career Assessment/Win Shares
$=\mathrm{CV}+.25(\mathrm{CWS}-\mathrm{CV})$

|  |  | CWS | CV | CAWS |
| :---: | :---: | :---: | :---: | :---: |
| 1. Babe Ruth | RF | 756 | 460 | 534 |
| 2. Barry Bonds | LF | 707 | 427 | 497 |
| 3. Willie Mays | CF | 642 | 389 | 452 |
| 4. Mickey Mantle | CF | 565 | 399 | 441 |
| 5. Stan Musial | LF | 604 | 378 | 435 |
| 6. Ted Williams | LF | 555 | 394 | 434 |
| 7. Hank Aaron | RF | 643 | 356 | 428 |
| 8. Rogers Hornsby | 2B | 502 | 381 | 411 |
| 9. Lou Gehrig | 1B | 489 | 384 | 410 |
| 10. Joe Morgan | 2B | 512 | 341 | 384 |
| 11. Mel Ott | RF | 528 | 335 | 383 |
| 12. Albert Pujols | $1 B$ | 476 | 347 | 379 |
| 13. Alex Rodriguez | SS | 498 | 330 | 372 |
| 14. Mike Schmidt | 3B | 467 | 338 | 370 |
| 15. Frank Robinson | RF | 519 | 316 | 367 |
| 16. Pete Rose | LF | 547 | 307 | 367 |
| 17. Rickey Henderson | LF | 535 | 308 | 365 |
| 18. Eddie Mathews | 3B | 450 | 333 | 362 |
| 19. Jimmie Foxx | 1B | 435 | 325 | 353 |
| 20. Joe DiMaggio | CF | 387 | 325 | 341 |
| 21. Carl Yastrzemski | LF | 488 | 286 | 337 |
| 22. Gary Sheffield | LF | 430 | 305 | 336 |
| 23. Paul Waner | RF | 423 | 304 | 334 |
| 24. Reggie Jackson | RF | 444 | 296 | 333 |
| 25. George Brett | 3B | 432 | 296 | 330 |
| 26. Craig Biggio | 2B | 428 | 294 | 328 |
| 27. Frank Thomas | DH | 405 | 301 | 327 |
| 28. Arky Vaughan | SS | 356 | 308 | 320 |
| 29. Miguel Cabrera | $1 B$ | 390 | 295 | 319 |
| 30. Wade Boggs | 3B | 394 | 291 | 317 |
| 31. Chipper Jones | 3B | 423 | 281 | 317 |
| 32. Willie McCovey | 1B | 408 | 285 | 316 |
| 33. Dick Allen | 1B | 342 | 304 | 314 |
| 34. Eddie Murray | 1B | 437 | 273 | 314 |
| 35. Cal Ripken Jr | SS | 427 | 276 | 314 |
| 36. Robin Yount | SS | 423 | 278 | 314 |
| 37. Jeff Bagwell | 1B | 388 | 287 | 312 |
| 38. Al Kaline | RF | 443 | 268 | 312 |
| 39. Derek Jeter | SS | 415 | 275 | 310 |
| 40. Ken Griffey Jr | CF | 403 | 278 | 309 |


|  |  | CWS | CV | CAWS |
| :---: | :---: | :---: | :---: | :---: |
| 41. Johnny Mize | 1B | 339 | 296 | 307 |
| 42. Charlie Gehringer | 2B | 383 | 280 | 306 |
| 43. Paul Molitor | DH | 414 | 270 | 306 |
| 44. Duke Snider | CF | 352 | 289 | 305 |
| 45. Tim Raines | LF | 390 | 275 | 304 |
| 46. Harmon Killebrew | 1B | 374 | 279 | 303 |
| 47. Billy Williams | LF | 374 | 279 | 303 |
| 48. Roberto Alomar | 2B | 375 | 278 | 302 |
| 49. Luke Appling | SS | 378 | 275 | 301 |
| 50. Yogi Berra | C | 375 | 276 | 301 |
| 51. Robinson Cano | $2 B$ | 350 | 285 | 301 |
| 52. Al Simmons | LF | 375 | 276 | 301 |
| 53. Jim Thome | 1B | 392 | 270 | 301 |
| 54. Mark McGwire | 1B | 342 | 283 | 298 |
| 55. Dave Winfield | RF | 415 | 259 | 298 |
| 56. Johnny Bench | C | 356 | 277 | 297 |
| 57. Roberto Clemente | RF | 377 | 269 | 296 |
| 58. Manny Ramirez | LF | 394 | 263 | 296 |
| 59. Ryne Sandberg | 2B | 346 | 278 | 295 |
| 60. Tony Gwynn | RF | 398 | 269 | 294 |
| 61. Joe Cronin | SS | 333 | 275 | 290 |
| 62. Rafael Palmeiro | 1B | 387 | 257 | 290 |
| 63. Willie Stargell | LF | 370 | 263 | 290 |
| 64. Rod Carew | 2B | 384 | 257 | 289 |
| 65. Harry Heilmann | RF | 356 | 267 | 289 |
| 66. Ron Santo | 3B | 324 | 275 | 287 |
| 67. Goose Goslin | LF | 355 | 263 | 286 |
| 68. Mike Piazza | C | 325 | 273 | 286 |
| 69. Lance Berkman | 1B | 311 | 276 | 285 |
| 70. Lou Brock | LF | 348 | 264 | 285 |
| 71. Vladimir Guerrero | RF | 333 | 269 | 285 |
| 72. Adrian Beltre | $3 B$ | 390 | 248 | 284 |
| 73. Frankie Frisch | 2B | 366 | 256 | 284 |
| 74. Gary Carter | C | 337 | 263 | 282 |
| 75. Darrell Evans | 3B | 363 | 253 | 281 |
| 76. Barry Larkin | SS | 347 | 258 | 280 |
| 77. Jimmy Wynn | CF | 305 | 269 | 278 |
| 78. Richie Ashburn | CF | 329 | 257 | 275 |
| 79. Jeff Kent | 2B | 339 | 252 | 274 |
| 80. Brooks Robinson | 3B | 356 | 247 | 274 |


|  |  | CWS | CV | CAWS |
| :---: | :---: | :---: | :---: | :---: |
| 81. Carlos Beltran | CF | 370 | 240 | 273 |
| 82. Carlton Fisk | C | 368 | 240 | 272 |
| 83. Bobby Grich | 2B | 329 | 253 | 272 |
| 84. Earl Averill | CF | 280 | 268 | 271 |
| 85. Stan Hack | 3B | 316 | 256 | 271 |
| 86. Ernie Banks | SS | 332 | 247 | 268 |
| 87. Hank Greenberg ${ }^{\wedge}$ | 1B | 267 | 262 | 263 |
| 88. PeeWee Reese | SS | 314 | 246 | 263 |
| 89. Ivan Rodriguez | C | 345 | 234 | 262 |
| 90. Joe Torre | C | 315 | 244 | 262 |
| 91. Lou Whitaker | 2B | 351 | 232 | 262 |
| 92. Lou Boudreau | SS | 277 | 255 | 261 |
| 93. Bill Terry ${ }^{\wedge}$ | 1B | 278 | 255 | 261 |
| 94. Larry Doby ${ }^{\wedge}$ | CF | 268 | 257 | 260 |
| 95. Chase Utley | $2 B$ | 292 | 249 | 260 |
| 96. Ted Simmons | C | 315 | 240 | 259 |
| 97. Alan Trammell | SS | 318 | 238 | 258 |
| 98. Jackie Robinson ${ }^{\wedge}$ | 2B | 257 | 257 | 257 |
| 99. Mickey Cochrane | C | 275 | 250 | 256 |
| 100. Kirby Puckett ${ }^{\wedge}$ | CF | 281 | 247 | 256 |
| 101. Bill Dickey | C | 314 | 235 | 255 |
| 102. Joe Mauer | C | 293 | 241 | 254 |
| 103. Gabby Hartnett | C | 325 | 229 | 253 |
| 104. Ozzie Smith | SS | 325 | 226 | 251 |

$\wedge=$ Shorter but great career.
Note - Joe Torre was elected to the Hall of Fame as a manager. But he has HOF numbers as a catcher and is included here for that reason.

## The List of the 48 Pitchers from the Modern Era with HOF Numbers

These are the benchmarks for a pitcher to achieve Hall of Fame numbers according to the CAWS Career Gauge:

1. A CAWS score of 220 or greater ( 35 players).
2. 300 career Win Shares but CAWS < 220 ( 1 player).
3. A CV score of 200 or greater but CAWS < 220 ( 3 players).
4. A CAWS score of 180 in fewer than 2400 innings ( 7 players).
5. A CAWS score of 160 in fewer than 1500 innings ( 2 players).

All numbers include the 2018 season.
Bold = Hall of Famer
Italic $=$ Active Player in 2018
CWS = Career Win Shares
CV = Core Value (sum of win shares for 10 best seasons)
CAWS $=$ Career Value $=\mathrm{CV}+.25(\mathrm{CWS}-\mathrm{CV})$

Pitchers with a CAWS score $=220$ (35)

|  |  | CWS | CV | CAWS |
| :--- | :---: | :---: | :---: | :---: |
| 1. Lefty Grove | $(\mathbf{1 9 2 5 - 1 9 4 1 )}$ | $\mathbf{3 9 1}$ | $\mathbf{3 0 1}$ | $\mathbf{3 2 4}$ |
| 2. Roger Clemens | $(1984-2007)$ | 432 | 260 | 303 |
| 3. Warren Spahn | $(\mathbf{1 9 4 2 - 1 9 6 5 )}$ | $\mathbf{4 1 2}$ | $\mathbf{2 5 9}$ | $\mathbf{2 9 7}$ |
| 4. Tom Seaver | $(\mathbf{1 9 6 7 - 1 9 8 6})$ | $\mathbf{3 8 8}$ | $\mathbf{2 5 5}$ | $\mathbf{2 8 8}$ |
| 5. Greg Maddux | $(1986-2008)$ | $\mathbf{3 9 8}$ | $\mathbf{2 4 6}$ | $\mathbf{2 8 4}$ |
| 6. Gaylord Perry | $(\mathbf{1 9 6 2 - 1 9 8 3})$ | $\mathbf{3 6 9}$ | $\mathbf{2 4 3}$ | $\mathbf{2 7 5}$ |
| 7. Bob Gibson | $(\mathbf{1 9 5 9 - 1 9 7 5 )}$ | $\mathbf{3 1 7}$ | $\mathbf{2 5 8}$ | $\mathbf{2 7 3}$ |
| 8. Steve Carlton | $(\mathbf{1 9 6 5 - 1 9 8 8})$ | $\mathbf{3 6 6}$ | $\mathbf{2 4 0}$ | $\mathbf{2 7 2}$ |
| 9. Phil Niekro | $(\mathbf{1 9 6 4 - 1 9 8 7})$ | $\mathbf{3 7 4}$ | $\mathbf{2 3 5}$ | $\mathbf{2 7 0}$ |
| 10. Robin Roberts | $(1948-1966)$ | $\mathbf{3 3 9}$ | $\mathbf{2 4 6}$ | $\mathbf{2 6 9}$ |
| 11. Jim Palmer | $(1965-1984)$ | $\mathbf{3 1 2}$ | $\mathbf{2 5 2}$ | $\mathbf{2 6 7}$ |
| 12. Carl Hubbell | $(\mathbf{1 9 2 8 - 1 9 4 3 )}$ | $\mathbf{3 0 5}$ | $\mathbf{2 4 8}$ | $\mathbf{2 6 2}$ |
| 13. Fergie Jenkins | $(\mathbf{1 9 6 5 - 1 9 8 3 )}$ | $\mathbf{3 2 3}$ | $\mathbf{2 3 3}$ | $\mathbf{2 5 6}$ |
| 14. Randy Johnson | $(\mathbf{1 9 8 8 - 2 0 0 9 )}$ | $\mathbf{3 2 6}$ | $\mathbf{2 3 0}$ | $\mathbf{2 5 4}$ |
| 15. Bob Feller | $(\mathbf{1 9 3 6 - 1 9 5 6})$ | $\mathbf{2 9 2}$ | $\mathbf{2 3 9}$ | $\mathbf{2 5 2}$ |
| 16. Bert Blyleven | $(\mathbf{1 9 7 0 - 1 9 9 2})$ | $\mathbf{3 3 9}$ | $\mathbf{2 1 8}$ | $\mathbf{2 4 8}$ |


|  |  | CWS |  | CV |  | CAWS |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 17. Burleigh Grimes | (1916-1934) | 286 |  | 231 |  | 245 |
| 18. Hal Newhouser | (1939-1955) | 264 |  | 234 |  | 242 |
| 19. Eppa Rixey | (1912-1933) | 315 |  | 217 |  | 242 |
| 20. Red Ruffing | (1924-1947) | 322 |  | 212 |  | 240 |
| 21. Early Wynn | (1939-1963) | 309 |  | 217 |  | 240 |
| 22. Juan Marichal | (1960-1975) | 263 |  | 229 |  | 238 |
| 23. Carl Mays | (1915-1929) | 256 |  | 230 |  | 237 |
| 24. Ted Lyons | (1923-1946) | 312 |  | 210 |  | 236 |
| 25. Stan Covaleski | (1912-1928) | 245 |  | 231 |  | 235 |
| 26. Tom Glavine | (1987-2008) | 314 |  | 203 |  | 231 |
| 27. Jim Bunning | (1955-1971) | 257 |  | 221 |  | 230 |
| 28. Don Drysdale | (1956-1969) | 258 |  | 221 |  | 230 |
| 29. Wes Ferrell | (1927-1941) | 233 |  | 229 |  | 230 |
| 30. Bucky Walters | (1931-1950) | 258 |  | 220 |  | 230 |
| 31. Red Faber |  |  | 206 |  | 228 |  |
| 32. Nolan Ryan |  |  | 191 |  | 227 |  |
| 33. Bob Lemon |  |  | 223 |  | 225 |  |
| 34. Dazzy Vance |  |  | 216 |  | 222 |  |
| 35. Don Sutton |  |  | 187 |  | 220 |  |

Note that Nolan Ryan and Don Sutton are the only two pitchers among these greats who did not achieve a core value of 200 . Which means their reaching the 220 benchmark owes a great deal to the longevity of their careers.

Pitchers with 300 Career Win Shares but CAWS < 220 (1)
Dennis Eckersley 301

Pitchers with CV $=200$ but CAWS $<220$ (3)

| Pedro Martinez | $\mathbf{2 5 6}$ | $\mathbf{2 0 6}$ | $\mathbf{2 1 9}$ |
| :--- | :--- | :--- | :--- |
| Whitey Ford | $\mathbf{2 6 1}$ | $\mathbf{2 0 2}$ | $\mathbf{2 1 7}$ |
| Urban Shocker | 220 | 204 | 208 |

Pitchers with a CAWS Score of 180 with fewer than 2400 Innings Pitched (7)
IP CWS CV CAWS

| Mariano Rivera | $\mathbf{1 2 1 1}$ | $\mathbf{2 5 5}$ | $\mathbf{1 7 5}$ | $\mathbf{1 9 5}$ |
| :--- | :--- | :--- | :--- | :--- |
| Sandy Koufax | $\mathbf{2 3 2 4}$ | $\mathbf{1 9 4}$ | $\mathbf{1 9 0}$ | $\mathbf{1 9 1}$ |
| Hoyt Wilhelm | $\mathbf{2 2 5 4}$ | $\mathbf{2 5 6}$ | $\mathbf{1 6 8}$ | $\mathbf{1 9 0}$ |
| Goose Gossage | $\mathbf{1 8 0 9}$ | $\mathbf{2 2 3}$ | $\mathbf{1 7 3}$ | $\mathbf{1 8 6}$ |
| Roy Halladay | $\mathbf{2 2 9 7}$ | $\mathbf{1 9 4}$ | $\mathbf{1 8 3}$ | $\mathbf{1 8 6}$ |
| Clayton Kershaw | 2096 | 188 | 182 | 184 |
| Dizzy Dean | $\mathbf{1 9 6 7}$ | $\mathbf{1 8 1}$ | $\mathbf{1 8 0}$ | $\mathbf{1 8 0}$ |

For Rivera, Koufax, Wihelm, Gossage and Dean, these are career numbers. For Roy Halladay, he achieved the benchmark after thirteen seasons (in 2010).

For Clayton Kershaw, he achieved the benchmark after eleven seasons (in 2018).

Pedro Martinez belongs in this group also - but he is already included above.

Pitchers with a CAWS Score of 160 with fewer than 1500 Innings Pitched (2)

|  | IP | CWS | CV | CAWS |
| :--- | :---: | :--- | :--- | :---: |
|  |  |  |  |  |
| Lee Smith | 1289 | 198 | 152 | 164 |
| Bruce Sutter | 1042 | 168 | 163 | 164 |

Mariano Rivera belongs in this group also - but he is already included in a group above. Of course, he is unquestionably the best "relief pitcher" in baseball history.

## The CAWS Ranking for Position Players - 2019

All numbers include the 2018 season.
Bold = Hall of Famer
Italic $=$ Active Player in 2018
CWS = Career Win Shares
CV = Core Value (sum of win shares for 10 best seasons)
CAWS $=$ Career Assessment/Win Shares

$$
=\mathrm{CV}+.25(\mathrm{CWS}-\mathrm{CV})
$$

+ = Player has HOF numbers because of position played.
76 position players (since 1920) have a CAWS score $=280$ $=$ HOF numbers.
28 others have HOF numbers because of position played.

|  |  | CWS | CV | CAWS |
| :--- | :--- | :--- | :--- | :--- |
|  |  |  |  |  |
| 1. Babe Ruth | RF | $\mathbf{7 5 6}$ | $\mathbf{4 6 0}$ | $\mathbf{5 3 4}$ |
| 2. Barry Bonds | LF | 707 | 427 | 497 |
| 3. Willie Mays | CF | $\mathbf{6 4 2}$ | $\mathbf{3 8 9}$ | $\mathbf{4 5 2}$ |
| 4. Mickey Mantle | CF | $\mathbf{5 6 5}$ | $\mathbf{3 9 9}$ | $\mathbf{4 4 1}$ |
| 5. Stan Musial | LF | $\mathbf{6 0 4}$ | $\mathbf{3 7 8}$ | $\mathbf{4 3 5}$ |
| 6. Ted Williams | LF | $\mathbf{5 5 5}$ | $\mathbf{3 9 4}$ | $\mathbf{4 3 4}$ |
| 7. Hank Aaron | RF | $\mathbf{6 4 3}$ | $\mathbf{3 5 6}$ | $\mathbf{4 2 8}$ |
| 8. Rogers Hornsby | 2B | $\mathbf{5 0 2}$ | $\mathbf{3 8 1}$ | $\mathbf{4 1 1}$ |
| 9. Lou Gehrig | 1B | $\mathbf{4 8 9}$ | $\mathbf{3 8 4}$ | $\mathbf{4 1 0}$ |
| 10. Joe Morgan |  |  |  |  |
| 11. Mel Ott | 2B | $\mathbf{5 1 2}$ | $\mathbf{3 4 1}$ | $\mathbf{3 8 4}$ |
| 12. Albert Pujols | RF | $\mathbf{5 2 8}$ | $\mathbf{3 3 5}$ | $\mathbf{3 8 3}$ |
| 13. Alex Rodriguez | SS | 476 | 347 | 379 |
| 14. Mike Schmidt | 3B | 498 | 330 | 372 |
| 15. Frank Robinson | RF | $\mathbf{4 6 7}$ | $\mathbf{3 3 8}$ | $\mathbf{5 1 9}$ |
| 16. Pete Rose | LF | 547 | $\mathbf{3 1 6}$ | $\mathbf{3 6 7}$ |
| 17. Rickey Henderson | LF | $\mathbf{5 3 5}$ | $\mathbf{3 0 8}$ | 367 |
| 18. Eddie Mathews | 3B | $\mathbf{4 5 0}$ | $\mathbf{3 3 3}$ | $\mathbf{3 6 5}$ |
| 19. Jimmie Foxx | 1B | $\mathbf{4 3 5}$ | $\mathbf{3 2 5}$ | $\mathbf{3 6 2}$ |
| 20. Joe DiMaggio | CF | $\mathbf{3 8 7}$ | $\mathbf{3 2 5}$ | $\mathbf{3 4 1}$ |
| 21. Carl Yastrzemski | LF | $\mathbf{4 8 8}$ | $\mathbf{2 8 6}$ | $\mathbf{3 3 7}$ |
| 22. Gary Sheffield | LF | 430 | 305 | 336 |
| 23. Paul Waner | RF | $\mathbf{4 2 3}$ | $\mathbf{3 0 4}$ | $\mathbf{3 3 4}$ |


|  |  | CWS | CV | CAWS |
| :---: | :---: | :---: | :---: | :---: |
| 24. Reggie Jackson | RF | 444 | 296 | 333 |
| 25. George Brett | 3B | 432 | 296 | 330 |
| 26. Craig Biggio | 2B | 428 | 294 | 328 |
| 27. Frank Thomas | DH | 405 | 301 | 327 |
| 28. Arky Vaughan | SS | 356 | 308 | 320 |
| 29. Miguel Cabrera | $1 B$ | 390 | 295 | 319 |
| 30. Wade Boggs | 3B | 394 | 291 | 317 |
| 31. Chipper Jones | 3B | 423 | 281 | 317 |
| 32. Willie McCovey | 1B | 408 | 285 | 316 |
| 33. Dick Allen | 1B | 342 | 304 | 314 |
| 34. Eddie Murray | 1B | 437 | 273 | 314 |
| 35. Cal Ripken Jr | SS | 427 | 276 | 314 |
| 36. Robin Yount | SS | 423 | 278 | 314 |
| 37. Jeff Bagwell | 1B | 388 | 287 | 312 |
| 38. Al Kaline | RF | 443 | 268 | 312 |
| 39. Derek Jeter | SS | 415 | 275 | 310 |
| 40. Ken Griffey Jr | CF | 403 | 278 | 309 |
| 41. Johnny Mize | 1B | 339 | 296 | 307 |
| 42. Charlie Gehringer | 2B | 383 | 280 | 306 |
| 43. Paul Molitor | DH | 414 | 270 | 306 |
| 44. Duke Snider | CF | 352 | 289 | 305 |
| 45. Tim Raines | LF | 390 | 275 | 304 |
| 46. Harmon Killebrew | 1B | 374 | 279 | 303 |
| 47. Billy Williams | LF | 374 | 279 | 303 |
| 48. Roberto Alomar | 2B | 375 | 278 | 302 |
| 49. Luke Appling | SS | 378 | 275 | 301 |
| 50. Yogi Berra | C | 375 | 276 | 301 |
| 51. Robinson Cano | $2 B$ | 350 | 285 | 301 |
| 52. Al Simmons | LF | 375 | 276 | 301 |
| 53. Jim Thome | 1B | 392 | 270 | 301 |
| 54. Mark McGwire | 1B | 342 | 283 | 298 |
| 55. Dave Winfield | RF | 415 | 259 | 298 |
| 56. Johnny Bench | C | 356 | 277 | 297 |
| 57. Roberto Clemente | RF | 377 | 269 | 296 |
| 58. Manny Ramirez | LF | 394 | 263 | 296 |
| 59. Ryne Sandberg | 2B | 346 | 278 | 295 |
| 60. Tony Gwynn | RF | 398 | 269 | 294 |
| 61. Joe Cronin | SS | 333 | 275 | 290 |
| 62. Rafael Palmeiro | 1B | 387 | 257 | 290 |
| 63. Willie Stargell | LF | 370 | 263 | 290 |
| 64. Rod Carew | 2B | 384 | 257 | 289 |
| 65. Harry Heilmann | RF | 356 | 267 | 289 |


|  |  | CWS | CV | CAWS |
| :--- | :---: | :---: | :---: | :---: |
| 66. Ron Santo | 3B | $\mathbf{3 2 4}$ | $\mathbf{2 7 5}$ | $\mathbf{2 8 7}$ |
| 67. Goose Goslin | LF | $\mathbf{3 5 5}$ | $\mathbf{2 6 3}$ | $\mathbf{2 8 6}$ |
| 68. Mike Piazza | C | $\mathbf{3 2 5}$ | $\mathbf{2 7 3}$ | $\mathbf{2 8 6}$ |
| 69. Lance Berkman | 1B | 311 | 276 | 285 |
| 70. Lou Brock | LF | $\mathbf{3 4 8}$ | $\mathbf{2 6 4}$ | $\mathbf{2 8 5}$ |
| 71. Vladimir Guerrero | RF | $\mathbf{3 3 3}$ | $\mathbf{2 6 9}$ | $\mathbf{2 8 5}$ |
| 72. Adrian Beltre | $3 B$ | 390 | 248 | 284 |
| 73. Frankie Frisch | 2B | $\mathbf{3 6 6}$ | $\mathbf{2 5 6}$ | $\mathbf{2 8 4}$ |
| 74. Gary Carter | C | $\mathbf{3 3 7}$ | $\mathbf{2 6 3}$ | $\mathbf{2 8 2}$ |
| 75. Darrell Evans | 3B | 363 | $\mathbf{2 5 3}$ | 281 |
| 76. Barry Larkin | SS | $\mathbf{3 4 7}$ | $\mathbf{2 5 8}$ | $\mathbf{2 8 0}$ |

These seventy-six (76) players have all achieved a CAWS score of 280 or better during their playing years. Therefore, all have Hall of Fame numbers.

Here are some other solid players who did not achieve the 280 benchmark. Twenty-eight (28) of these players (indicated by a " + ") did have HOF numbers during their career by virtue of the position they played (or "a shorter but great career").

Any modern player who is in the Hall of Fame but did not have HOF numbers is also included below.

|  | CWS | CV | CAWS |
| :--- | :--- | :--- | :---: |
| Bobby Abreu | 346 | 257 | 279 |
| Jason Giambi | 318 | 266 | 279 |
| Rusty Staub | 354 | 254 | 279 |
| Joe Medwick | $\mathbf{3 1 2}$ | $\mathbf{2 6 7}$ | $\mathbf{2 7 8}$ |
| Jimmy Wynn | 305 | 269 | $278+$ |
| Fred McGriff | 349 | 252 | 276 |
| Joey Votto | 285 | 273 | 276 |
| Richie Ashburn | $\mathbf{3 2 9}$ | $\mathbf{2 5 7}$ | $\mathbf{2 7 5}+$ |
| Bobby Bonds | 302 | 264 | 274 |
| Jeff Kent | 339 | 252 | $274+$ |
| Tony Perez | $\mathbf{3 4 9}$ | $\mathbf{2 4 9}$ | $\mathbf{2 7 4}$ |
| Brooks Robinson | $\mathbf{3 5 6}$ | $\mathbf{2 4 7}$ | $\mathbf{2 7 4}+$ |
| Carlos Beltran | 370 | 240 | $273+$ |
| Todd Helton | 317 | 258 | 273 |
| Sammy Sosa | 325 | 255 | 273 |
| Carlton Fisk | $\mathbf{3 6 8}$ | $\mathbf{2 4 0}$ | $\mathbf{2 7 2}+$ |
| Bobby Grich | 329 | 253 | $272+$ |
| Earl Averill | $\mathbf{2 8 0}$ | $\mathbf{2 6 8}$ | $\mathbf{2 7 1}+$ |


|  | CWS | CV | CAWS |
| :---: | :---: | :---: | :---: |
| Stan Hack | 316 | 256 | $271+$ |
| Ken Singleton | 302 | 260 | 271 |
| Frank Howard | 297 | 260 | 270 |
| Will Clark | 321 | 252 | 269 |
| Edgar Martinez | 314 | 254 | 269 |
| Vada Pinson | 321 | 252 | 269 |
| Reggie Smith | 325 | 250 | 269 |
| Ernie Banks | 332 | 247 | 268 + |
| Dave Parker | 327 | 248 | 268 |
| Ichiro Suzuki | 314 | 251 | 267 |
| Orlando Cepeda | 310 | 251 | 266 |
| Carlos Delgado | 303 | 254 | 266 |
| Edd Roush | 314 | 250 | 266 |
| Enos Slaughter | 323 | 246 | 265 |
| Jack Clark | 316 | 247 | 264 |
| Keith Hernandez | 311 | 248 | 264 |
| Minnie Minoso | 283 | 258 | 264 |
| Bernie Williams | 311 | 248 | 264 |
| Hank Greenberg | 267 | 262 | $263+$ |
| Jim Edmonds | 301 | 250 | 263 |
| PeeWee Reese | 314 | 246 | $263+$ |
| Dwight Evans | 347 | 234 | 262 |
| Ivan Rodriguez | 345 | 234 | $262+$ |
| Joe Torre | 315 | 244 | $262+$ |
| Lou Whitaker | 351 | 232 | $262+$ |
| Lou Boudreau | 277 | 255 | $261+$ |
| Andre Dawson | 340 | 234 | 261 |
| Brian Giles | 287 | 252 | 261 |
| Bill Terry | 278 | 255 | $261+$ |
| Larry Doby | 268 | 257 | $260+$ |
| Norm Cash | 315 | 241 | 260 |
| Chase Utley | 292 | 249 | $260+$ |
| Sal Bando | 283 | 251 | 259 |
| Ted Simmons | 315 | 240 | $259+$ |
| Nellie Fox | 304 | 242 | 258 |
| Alan Trammell | 318 | 238 | $258+$ |
| Billy Herman | 298 | 243 | 257 |
| Dale Murphy | 290 | 246 | 257 |
| Jackie Robinson | 257 | 257 | $257+$ |
| David Wright | 272 | 252 | 257 |
| Mickey Cochrane | 275 | 250 | $256+$ |
| Kiki Cuyler | 292 | 244 | 256 |


|  | CWS | CV | CAWS |
| :---: | :---: | :---: | :---: |
| Adrian Gonzalez | 278 | 249 | 256 |
| Andruw Jones | 290 | 245 | 256 |
| Kirby Puckett | 281 | 247 | 256 + |
| Willie Davis | 322 | 230 | 255 |
| Bill Dickey | 314 | 235 | $255+$ |
| John Olerud | 301 | 239 | 255 |
| Joe Mauer | 293 | 241 | $254+$ |
| Scott Rolen | 307 | 236 | 254 |
| Gabby Hartnett | 325 | 229 | $253+$ |
| Bobby Murcer | 277 | 245 | 253 |
| Sam Rice | 327 | 228 | 253 |
| Larry Walker | 311 | 234 | 253 |
| Jose Cruz | 313 | 232 | 252 |
| George Sisler | 292 | 239 | 252 |
| Cesar Cedeno | 296 | 236 | 251 |
| Rocky Colavito | 273 | 243 | 251 |
| David Ortiz | 322 | 227 | 251 |
| Ozzie Smith | 325 | 226 | $251+$ |
| Bob Elliott | 287 | 236 | 249 |
| Luis Gonzalez | 318 | 226 | 249 |
| Amos Otis | 286 | 237 | 249 |
| Heinie Manush | 285 | 236 | 248 |
| Graig Nettles | 321 | 224 | 248 |
| Don Mattingly | 263 | 241 | 247 |
| Ken Boyer | 279 | 235 | 246 |
| Vern Stephens | 265 | 239 | 246 |
| Bob Johnson | 287 | 231 | 245 |
| Jim Rice | 282 | 233 | 245 |
| Joe Sewell | 277 | 233 | 244 |
| Al Oliver | 305 | 222 | 243 |
| Willie Randolph | 312 | 220 | 243 |
| Miguel Tejada | 279 | 231 | 243 |
| Mark Grace | 294 | 224 | 242 |
| Ralph Kiner | 242 | 242 | 242 |
| Jimmy Rollins | 296 | 222 | 241 |
| Mickey Vernon | 296 | 223 | 241 |
| Pie Traynor | 274 | 228 | 240 |
| Albert Belle | 243 | 237 | 239 |
| Fred Lynn | 280 | 225 | 239 |
| Mark Teixeria | 262 | 231 | 239 |
| Bobby Doerr | 281 | 223 | 238 |


|  | CWS | CV | CAWS |
| :---: | :---: | :---: | :---: |
| Ron Cey | 280 | 222 | 237 |
| George Foster | 269 | 226 | 237 |
| Tony Oliva | 245 | 234 | 237 |
| Johnny Damon | 302 | 214 | 236 |
| Matt Holliday | 272 | 223 | 236 |
| Daryl Strawberry | 252 | 230 | 236 |
| Bill Freehan | 267 | 224 | 235 |
| Joe Gordon | 242 | 233 | 235 |
| Dave Bancroft | 269 | 222 | 234 |
| Tony Fernandez | 280 | 219 | 234 |
| Steve Finley | 296 | 213 | 234 |
| Buddy Bell | 301 | 210 | 233 |
| Gil Hodges | 263 | 221 | 232 |
| Steve Garvey | 279 | 215 | 231 |
| Robin Ventura | 272 | 217 | 231 |
| Rabbit Maranville | 302 | 206 | 230 |
| Kenny Lofton | 294 | 207 | 229 |
| Ed Yost | 267 | 215 | 228 |
| Maury Wills | 253 | 218 | 227 |
| Jorge Posada | 254 | 216 | 226 |
| Jim Bottomley | 258 | 214 | 225 |
| Paul Konerko | 266 | 211 | 225 |
| Harold Baines | 307 | 196 | 224 |
| Tony Lazzeri | 252 | 215 | 224 |
| Jose Canseco | 272 | 206 | 223 |
| Larry Gardner | 258 | 211 | 223 |
| Chuck Klein | 238 | 217 | 222 |
| Chuck Knoblauch | 229 | 219 | 222 |
| Dave Concepcion | 269 | 205 | 221 |
| Tori Hunter | 282 | 201 | 221 |
| Phil Rizzuto | 231 | 218 | 221 |
| Hack Wilson | 224 | 220 | 221 |
| Ken Caminiti | 242 | 212 | 220 |
| Earle Combs | 227 | 217 | 220 |
| Dom DiMaggio | 220 | 220 | 220 |
| Red Schoendienst | 262 | 204 | 219 |
| Luis Aparicio | 293 | 193 | 218 |
| Jim Gilliam | 247 | 208 | 218 |
| Buddy Myer | 258 | 205 | 218 |
| Moises Alou | 277 | 197 | 217 |
| Lloyd Waner | 245 | 207 | 217 |
| Wally Joyner | 253 | 203 | 216 |


|  | CWS | CV | CAWS |
| :---: | :---: | :---: | :---: |
| Paul O'Neill | 259 | 201 | 216 |
| Mike Cameron | 247 | 204 | 215 |
| Tim Wallach | 248 | 202 | 214 |
| Chili Davis | 285 | 189 | 213 |
| Roger Maris | 223 | 209 | 213 |
| Curt Flood | 221 | 209 | 212 |
| Jason Kendall | 245 | 201 | 212 |
| Davey Lopes | 240 | 203 | 212 |
| Gene Tenace | 231 | 206 | 212 |
| Juan Gonzalez | 234 | 203 | 211 |
| Dave McAuliffe | 241 | 201 | 211 |
| Michael Young | 231 | 205 | 211 |
| Bill Madlock | 242 | 196 | 208 |
| Lance Parrish | 248 | 194 | 208 |
| Roy Campanella | 207 | 207 | 207 |
| Ross Youngs | 206 | 206 | 206 |
| Thurman Munson | 206 | 204 | 205 |
| Nomar Garciaparra | 215 | 197 | 202 |
| Omar Vizquel | 272 | 178 | 202 |
| George Kell | 229 | 192 | 201 |
| Travis Jackson | 211 | 191 | 196 |
| Cy Williams | 235 | 182 | 195 |
| Gary Gaetti | 249 | 173 | 192 |
| Darrell Porter | 222 | 181 | 191 |
| Fred Lindstrom | 193 | 182 | 190 |
| Wally Schang | 245 | 172 | 190 |
| Bill Mazeroski | 219 | 173 | 185 |
| Elston Howard | 203 | 174 | 181 |
| George Kelly | 193 | 177 | 181 |
| Ernie Lombardi | 218 | 167 | 180 |
| Chick Hafey | 186 | 176 | 179 |
| Javy Lopez | 195 | 172 | 178 |
| Jim Sundberg | 200 | 166 | 175 |
| Tim McCarver | 204 | 162 | 173 |
| Ray Schalk | 191 | 167 | 173 |
| Rick Ferrell | 206 | 150 | 164 |

## The CAWS Ranking for Pitchers - 2019

All numbers include the 2018 season.
Bold = Hall of Famer
Italic $=$ Active Player in 2018
CWS = Career Win Shares
$\mathrm{CV}=$ Core Value (sum of win shares for 10 best seasons)
CAWS $=$ Career Value $=\mathrm{CV}+.25(\mathrm{CWS}-\mathrm{CV})$
The first 35 pitchers on this list have HOF numbers: CAWS $=220$
$+=$ This player also has HOF numbers by virtue of another benchmark $=13$ other pitchers.

|  | CWS | CV | CAWS |
| :--- | :---: | :---: | :---: |
| 1. Lefty Grove |  |  |  |
| 2. Roger Clemens | $\mathbf{3 9 1}$ | $\mathbf{3 0 1}$ | $\mathbf{3 2 4}$ |
| 3. Warren Spahn | 432 | 260 | 303 |
| 4. Tom Seaver | $\mathbf{4 1 2}$ | $\mathbf{2 5 9}$ | $\mathbf{2 9 7}$ |
| 5. Greg Maddux | $\mathbf{3 8 8}$ | $\mathbf{2 5 5}$ | $\mathbf{2 8 8}$ |
| 6. Gaylord Perry | $\mathbf{3 9 8}$ | $\mathbf{2 4 6}$ | $\mathbf{2 8 4}$ |
| 7. Bob Gibson | $\mathbf{3 6 9}$ | $\mathbf{2 4 3}$ | $\mathbf{2 7 5}$ |
| 8. Steve Carlton | $\mathbf{3 1 7}$ | $\mathbf{2 5 8}$ | $\mathbf{2 7 3}$ |
| 9. Phil Niekro | $\mathbf{3 6 6}$ | $\mathbf{2 4 0}$ | $\mathbf{2 7 2}$ |
| 10. Robin Roberts | $\mathbf{3 7 4}$ | $\mathbf{2 3 5}$ | $\mathbf{2 7 0}$ |
| 11. Jim Palmer | $\mathbf{3 3 9}$ | $\mathbf{2 4 6}$ | $\mathbf{2 6 9}$ |
| 12. Carl Hubbell | $\mathbf{3 1 2}$ | $\mathbf{2 5 2}$ | $\mathbf{2 6 7}$ |
| 13. Fergie Jenkins | $\mathbf{3 0 5}$ | $\mathbf{2 4 8}$ | $\mathbf{2 6 2}$ |
| 14. Randy Johnson | $\mathbf{3 2 3}$ | $\mathbf{2 3 3}$ | $\mathbf{2 5 6}$ |
| 15. Bob Feller | $\mathbf{3 2 6}$ | $\mathbf{2 3 0}$ | $\mathbf{2 5 4}$ |
| 16. Bert Blyleven | $\mathbf{2 9 2}$ | $\mathbf{2 3 9}$ | $\mathbf{2 5 2}$ |
| 17. Burleigh Grimes | $\mathbf{3 3 9}$ | $\mathbf{2 1 8}$ | $\mathbf{2 4 8}$ |
| 18. Hal Newhouser | $\mathbf{2 8 6}$ | $\mathbf{2 3 1}$ | $\mathbf{2 4 5}$ |
| 19. Eppa Rixey | $\mathbf{2 6 4}$ | $\mathbf{2 3 4}$ | $\mathbf{2 4 2}$ |
| 20. Red Ruffing | $\mathbf{3 1 5}$ | $\mathbf{2 1 7}$ | $\mathbf{2 4 2}$ |
| 21. Early Wynn | $\mathbf{3 2 2}$ | $\mathbf{2 1 2}$ | $\mathbf{2 4 0}$ |
| 22, Juan Marichal | $\mathbf{3 0 9}$ | $\mathbf{2 1 7}$ | $\mathbf{2 4 0}$ |
| 23. Carl Mays | $\mathbf{2 6 3}$ | $\mathbf{2 2 9}$ | $\mathbf{2 3 8}$ |
| 24. Ted Lyons | 256 | 230 | 237 |
| 25. Stan Coveleski | $\mathbf{3 1 2}$ | $\mathbf{2 1 0}$ | $\mathbf{2 3 6}$ |
| 26. Tom Glavine | $\mathbf{2 4 5}$ | $\mathbf{2 3 1}$ | $\mathbf{2 3 5}$ |
| 27. Jim Bunning | $\mathbf{3 1 4}$ | $\mathbf{2 0 3}$ | $\mathbf{2 3 1}$ |
| 28. Don Drysdale | $\mathbf{2 5 7}$ | $\mathbf{2 2 1}$ | $\mathbf{2 3 0}$ |
| 288 | $\mathbf{2 5 8}$ | $\mathbf{2 2 1}$ | $\mathbf{2 3 0}$ |


| 29. Wes Ferrell | 233 | 229 | 230 |
| :---: | :---: | :---: | :---: |
| 30. Bucky Walters | 258 | 220 | 230 |
| 31. Red Faber | 292 | 206 | 228 |
| 32. Nolan Ryan | 334 | 191 | 227 |
| 33. Bob Lemon | 232 | 223 | 225 |
| 34. Dazzy Vance | 241 | 216 | 222 |
| 35. Don Sutton | 319 | 187 | 220 |
|  | CWS | CV | CAWS |
| Pedro Martinez | 256 | 206 | $219+$ |
| Jack Quinn | 287 | 195 | 218 |
| Whitey Ford | 261 | 202 | $217+$ |
| Dennis Eckersley | 301 | 183 | $213+$ |
| Luis Tiant | 256 | 198 | 213 |
| John Smoltz | 289 | 185 | 211 |
| Dolf Luque | 241 | 199 | 210 |
| Urban Shocker | 220 | 204 | $208+$ |
| Waite Hoyt | 262 | 189 | 207 |
| Mike Mussina | 270 | 186 | 207 |
| Billy Pierce | 248 | 193 | 207 |
| Roy Halladay | 226 | 199 | $206+$ |
| Curt Schilling | 252 | 191 | 206 |
| Dizzy Trout | 228 | 199 | 206 |
| Kevin Brown | 241 | 193 | 205 |
| Jim Kaat | 268 | 181 | 203 |
| Bobo Newsom | 237 | 191 | 203 |
| Herb Pennock | 240 | 188 | 201 |
| Mel Harder | 234 | 188 | 200 |
| Tommy Bridges | 225 | 189 | 198 |
| Paul Derringer | 231 | 187 | 198 |
| Dave Stieb | 213 | 192 | 197 |
| Larry Jackson | 225 | 186 | 196 |
| Tommy John | 289 | 165 | 196 |
| Jerry Koosman | 240 | 181 | 196 |
| Rick Reuschel | 240 | 181 | 196 |
| Justin Verlander | 213 | 188 | 194 |
| Charlie Root | 223 | 181 | 192 |
| Sandy Koufax | 194 | 190 | $191+$ |
| Catfish Hunter | 206 | 184 | 190 |
| Mickey Lolich | 224 | 179 | 190 |
| Dutch Leonard | 233 | 173 | 188 |
| Sad Sam Jones | 245 | 167 | 187 |


| Jack Morris | $\mathbf{2 2 5}$ | $\mathbf{1 7 2}$ | $\mathbf{1 8 5}$ |
| :--- | :--- | :--- | :--- |
| Vida Blue | 202 | 178 | 184 |
| Clayton Kershaw | 188 | 182 | $184+$ |
| Lefty Gomez | $\mathbf{1 8 5}$ | $\mathbf{1 8 2}$ | $\mathbf{1 8 3}$ |
| Tim Hudson | 220 | 170 | 183 |
| Frank Tanana | 241 | 164 | 183 |
| David Cone | 205 | 173 | 181 |
| Orel Hershiser | 210 | 171 | 181 |
| Dizzy Dean | $\mathbf{1 8 1}$ | $\mathbf{1 8 0}$ | $\mathbf{1 8 0}+$ |
| CCSabathia | 237 | 161 | 180 |
|  |  |  |  |
| Mark Buehrle | 222 | 165 | 179 |
| Zack Greinke | 201 | 169 | 177 |
| Don Newcombe | 176 | 176 | 176 |
| Felix Hernandez | 190 | 170 | 175 |
| Bret Saberhagen | 193 | 165 | 172 |
| Andy Pettitte | 229 | 152 | 171 |
| Bartolo Colon | 205 | 158 | 170 |
| Roy Oswalt | 175 | 167 | 169 |
| Johan Santana | 171 | 168 | 169 |
| Jesse Haines | $\mathbf{2 0 7}$ | $\mathbf{1 5 5}$ | $\mathbf{1 6 8}$ |
| Jamie Moyer | 224 | 149 | 168 |
| Ron Guidry | 174 | 164 | 167 |
| Dwight Gooden | 187 | 156 | 164 |
| David Wells | 211 | 147 | 163 |
| Allie Reynolds | 170 | 153 | 157 |

All of the pitchers above were essentially starting pitchers even though some of them (for example, Allie Reynolds) did do some relieving.

## Relievers

In the list of "relievers" below, most are "true" relievers (that is, pitched in fewer than 1500 innings). However, some pitched more innings than that (especially three of the Hall of Famers: Wilhelm, Gossage and Fingers).

IP = Innings pitched
Bold = Hall of Famer
$+=$ Pitcher has HOF numbers

|  | IP | CWS | CV | CAWS |
| :--- | :---: | :--- | :--- | :---: |
| Mariano Rivera | $\mathbf{1 2 8 3}$ | $\mathbf{2 7 2}$ | $\mathbf{1 7 5}$ | $\mathbf{1 9 9}+$ |
| Hoyt Wilhelm | $\mathbf{2 2 5 4}$ | $\mathbf{2 5 6}$ | $\mathbf{1 6 8}$ | $\mathbf{1 9 0}+$ |
| Goose Gossage | $\mathbf{1 8 0 9}$ | $\mathbf{2 2 3}$ | $\mathbf{1 7 3}$ | $\mathbf{1 8 6}+$ |
| Lee Smith | $\mathbf{1 2 8 9}$ | $\mathbf{1 9 8}$ | $\mathbf{1 5 2}$ | $\mathbf{1 6 4}+$ |
| Bruce Sutter | $\mathbf{1 0 4 2}$ | $\mathbf{1 6 8}$ | $\mathbf{1 6 3}$ | $\mathbf{1 6 4}+$ |
|  |  |  |  |  |
| Billy Wagner | 903 | 182 | 151 | 159 |
| Dan Quisenberry | 1043 | 157 | 155 | 156 |
| Rollie Fingers | $\mathbf{1 7 0 1}$ | $\mathbf{1 8 8}$ | $\mathbf{1 4 4}$ | $\mathbf{1 5 5}$ |
| Trevor Hoffman | $\mathbf{1 0 8 9}$ | $\mathbf{1 8 8}$ | $\mathbf{1 3 5}$ | $\mathbf{1 4 8}$ |
| John Franco | 1246 | 183 | 128 | 142 |
| Mike Marshall | 1387 | 146 | 139 | 141 |
| Kent Tekulve | 1436 | 159 | 135 | 141 |
|  |  |  |  |  |
| John Hiller | 1242 | 146 | 136 | 139 |
| Sparky Lyle | 1390 | 161 | 132 | 139 |
| Tom Henke | 790 | 140 | 130 | 133 |
| Doug Jones | 1128 | 146 | 128 | 133 |
| Jeff Riordan | 1132 | 157 | 121 | 130 |
| Jeff Montgomery | 869 | 134 | 127 | 129 |
| John Wetteland | 765 | 127 | 125 | 126 |

## The Hall of Famers Who Do Not Have HOF Numbers (52)

Here are the players from the modern era who are in the Hall of Fame but who do not appear to have HOF numbers according to the CAWS CAREER GAUGE.

Keep in mind that there may be a few players such as Roy Campanella who almost certainly would have posted the numbers had not circumstances beyond their control intervened.

According to the CCG, there are forty-two (42) position players and ten (10) pitchers from the modern era currently in the Hall of Fame who do not appear to have HOF numbers - a total of fifty-two (52) players.

CWS = Career Win Shares
CV = Core Value (sum of win shares for 10 best seasons)
CAWS $=$ Career Assessment/Win Shares $=$ CV $+.25($ CWS - CV)

The Right Fielders: CAWS needed $=280=6$ Players

|  | CWS | CV | CAWS |
| :--- | :--- | :--- | :---: |
| Enos Slaughter | $\mathbf{3 2 3}$ | $\mathbf{2 4 6}$ | $\mathbf{2 6 5}$ |
| Andre Dawson | $\mathbf{3 4 0}$ | $\mathbf{2 3 4}$ | $\mathbf{2 6 1}$ |
| Kiki Cuyler | $\mathbf{2 9 2}$ | $\mathbf{2 4 4}$ | $\mathbf{2 5 6}$ |
| Sam Rice | $\mathbf{3 2 7}$ | $\mathbf{2 2 8}$ | $\mathbf{2 5 3}$ |
| Chuck Klein | $\mathbf{2 3 8}$ | $\mathbf{2 1 7}$ | $\mathbf{2 2 2}$ |
| Ross Youngs | $\mathbf{2 0 6}$ | $\mathbf{2 0 6}$ | $\mathbf{2 0 6}$ |

The Left Fielders: CAWS needed = 280 = 5 Players

| Joe Medwick | $\mathbf{3 1 2}$ | $\mathbf{2 6 7}$ | $\mathbf{2 7 8}$ |
| :--- | :--- | :--- | :--- |
| Heinie Manush | $\mathbf{2 8 5}$ | $\mathbf{2 3 6}$ | $\mathbf{2 4 8}$ |
| Jim Rice | $\mathbf{2 8 2}$ | $\mathbf{2 3 3}$ | $\mathbf{2 4 5}$ |
| Ralph Kiner | $\mathbf{2 4 2}$ | $\mathbf{2 4 2}$ | $\mathbf{2 4 2}$ |
| Chick Hafey | $\mathbf{1 8 6}$ | $\mathbf{1 7 6}$ | $\mathbf{1 7 9}$ |

The Center Fielders: CAWS needed $=270=4$ Players

|  | CWS | CV | CAWS |
| :--- | :--- | :--- | :---: |
| Edd Roush | $\mathbf{3 1 4}$ | $\mathbf{2 5 0}$ | $\mathbf{2 6 6}$ |
| Hack Wilson | $\mathbf{2 2 4}$ | $\mathbf{2 2 0}$ | $\mathbf{2 2 1}$ |
| Earle Combs | $\mathbf{2 2 7}$ | $\mathbf{2 1 7}$ | $\mathbf{2 2 0}$ |
| Lloyd Waner | $\mathbf{2 4 5}$ | $\mathbf{2 0 7}$ | $\mathbf{2 1 7}$ |

The First Basemen: CAWS needed = $280=5$ Players

| Tony Perez | $\mathbf{3 4 9}$ | $\mathbf{2 4 9}$ | $\mathbf{2 7 4}$ |
| :--- | :--- | :--- | :--- |
| Orlando Cepeda | $\mathbf{3 1 0}$ | $\mathbf{2 5 1}$ | $\mathbf{2 6 6}$ |
| George Sisler | $\mathbf{2 9 2}$ | $\mathbf{2 3 9}$ | $\mathbf{2 5 2}$ |
| Jim Bottomley | $\mathbf{2 5 8}$ | $\mathbf{2 1 4}$ | $\mathbf{2 2 5}$ |
| George Kelly | $\mathbf{1 9 3}$ | $\mathbf{1 7 7}$ | $\mathbf{1 8 1}$ |

The Second Basemen: CAWS needed = $260=7$ Players

| Nellie Fox | $\mathbf{3 0 4}$ | $\mathbf{2 4 2}$ | $\mathbf{2 5 8}$ |
| :--- | :--- | :--- | :--- |
| Billy Herman | $\mathbf{2 9 8}$ | $\mathbf{2 4 3}$ | $\mathbf{2 5 7}$ |
| Bobby Doerr | $\mathbf{2 8 1}$ | $\mathbf{2 2 3}$ | $\mathbf{2 3 8}$ |
| Joe Gordon | $\mathbf{2 4 2}$ | $\mathbf{2 3 3}$ | $\mathbf{2 3 5}$ |
| Tony Lazzeri | $\mathbf{2 5 2}$ | $\mathbf{2 1 5}$ | $\mathbf{2 2 4}$ |
| Red Schoendienst | $\mathbf{2 6 2}$ | $\mathbf{2 0 4}$ | $\mathbf{2 1 9}$ |
| Bill Mazeroski | $\mathbf{2 1 9}$ | $\mathbf{1 7 3}$ | $\mathbf{1 8 5}$ |

The Shortstops: CAWS needed $=250=6$ Players

| Joe Sewell | 277 | 233 | 244 |
| :--- | :--- | :--- | :--- |
| Dave Bancroft | 269 | 222 | 234 |
| Rabbit Maranville | $\mathbf{3 0 2}$ | 206 | 230 |
| Phil Rizzuto | 231 | 218 | 221 |
| Luis Aparicio | 293 | 193 | 218 |
| Travis Jackson | 211 | 191 | $\mathbf{1 9 6}$ |

The Third Basemen: CAWS needed = $270=3$ Players
CWS CV CAWS

| Pie Traynor | 274 | 228 | 240 |
| :--- | :--- | :--- | :--- |
| George Kell | 229 | 192 | 201 |
| Fred Lindstrom | 193 | 182 | 190 |

The Catchers: CAWS needed $=250=4$ Players

| Roy Campanella | 207 | 207 | 207 |
| :--- | :--- | :--- | :--- |
| Ernie Lombardi | 218 | $\mathbf{1 6 7}$ | $\mathbf{1 8 0}$ |
| Ray Schalk | $\mathbf{1 9 1}$ | $\mathbf{1 6 7}$ | $\mathbf{1 7 3}$ |
| Rick Ferrell | $\mathbf{2 0 6}$ | $\mathbf{1 5 0}$ | $\mathbf{1 6 4}$ |

The Designated Hitters: CAWS needed = 280 = 2 Players

| Edgar Martinez | 314 | 254 | 269 |
| :--- | :--- | :--- | :--- |
| Harold Baines | $\mathbf{3 0 7}$ | $\mathbf{1 9 6}$ | 224 |

The Pitchers: Needed = 220 CAWS or 300 CWS or 200 CV or 180 CAWS in < 2400 innings or 160 CAWS in < 1500 innings $=10$ Pitchers

|  | CWS | CV | CAWS |
| :---: | :---: | :---: | :---: |
| John Smoltz | 289 | 185 | 211 |
| Waite Hoyt | 262 | 189 | 207 |
| Mike Mussina | 270 | 186 | 207 |
| Herb Pennock | 240 | 188 | 201 |
| Catfish Hunter | 206 | 184 | 190 |
| Jack Morris | 225 | 172 | 185 |
| Lefty Gomez | 185 | 182 | 183 |
| Jesse Haines | 207 | 155 | 168 |
| Rollie Fingers | 188 | 144 | 155 |
| Trevor Hoffman | 188 | 135 | 148 |

