

BASEBALL

Analyst





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Cartoon Page

BORN AGAIN YANKEE FANS



MIKE ROSS

"We've tried Texas, Cleveland and the Reds; things have got to get better."

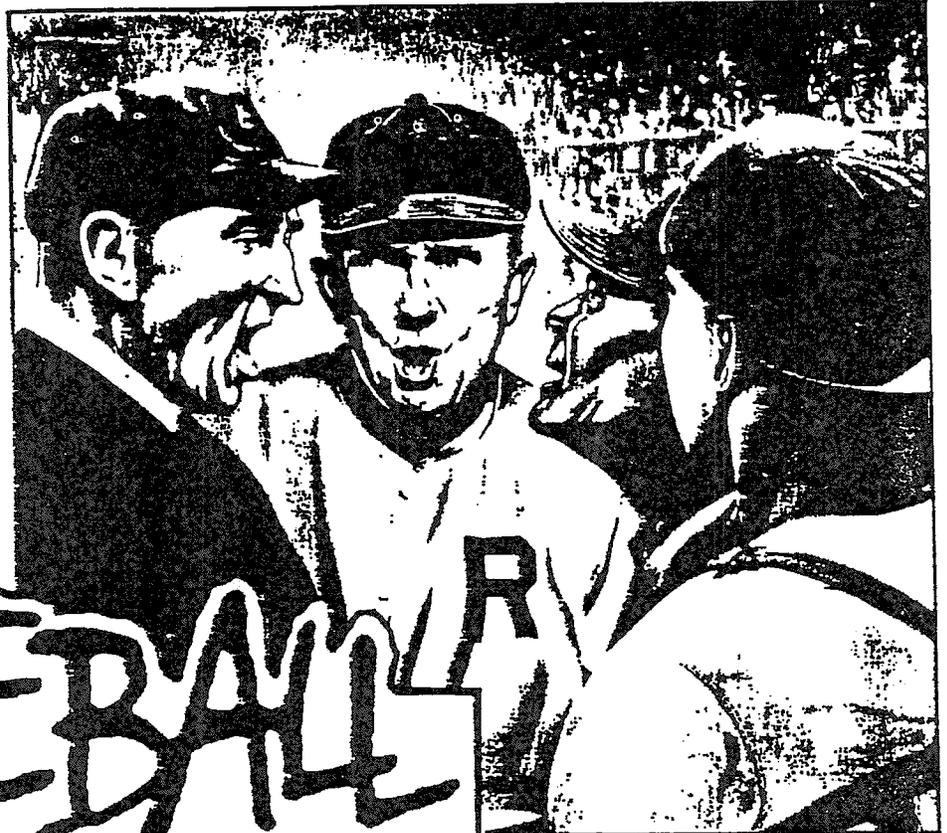
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NOTES: In this issue: Craig Wright's Base On Balls Abstract concludes starting on page 4; "Percentage Baseball Reconsidered: Model and Method" by frequent contributor Charles Pavitt appears on page 11; Dan Greenia's very popular 'Freak Show' can be seen on page 16; Jack Carlson tells a tale of two teams on page 17 with his "A Comparison of Two Consistent Teams"....Bob Davids has published his BASEBALL BRIEFS newsletter for the 1984 season. It's a whole lot of fun reading and is available from Bob by sending a self-addressed stamped envelope to L. Robert Davids/4424 Chesapeake Street NW/Washington, DC 20016. It's full of neat stats and interesting records set in the past season.... Our new graphics come courtesy of Joe Schwind (1224 Delaware Street/Lawrence, KS 66044). Joe is the Dean of the Kansas College of Collage, an art institute dedicated to the execution of collages. Joe has done extensive art work (both collage and non-collage) with baseball themes, some of which has appeared in previous ANALYST issues...our cartoon comes from Mike Ross of London, England...Our plans to have New Jersey's proposed new major league ball park built six blocks from the Analyst offices are proceeding apace. John and I figure that only 500 families will have to be relocated to ensure a cozy downtown setting for the stadium. We also suggest the draining of two reservoirs so that they may be converted to parking decks. We are currently drawing up blue prints for presentation to the Jersey City town fathers...More if it happens.

--Jim Baker

Craig Wright

BASE ON BALLS ABSTRACT, part three

III. Learning to Walk

In Section I we learned that the walk itself had significant offensive value. In Section II we learned that hitting strategies that result in increased walk averages tend to impact favorably on overall hitting effectiveness. Section II also offered logic and evidence that indicates that drawing walks is a learnable skill. Section III covers strategies used to enhance this skill.

One is not sure what to study from this perspective as few organizations have had key personnel (general manager, field manager, hitting instructor) who consciously saw the skill as teachable. Most times it seems the impact of management on walk averages, as well as other aspects of the game, is not so much technique as attitude. Management set the tone as to what is valuable and what is not, and things just set sail in that direction without conscious instruction. What is surprising is how strong such methods, or lack of method, impact on performance.

I ended up deciding to focus this section around Branch Rickey's career in baseball. This would touch several teams, organizations, and managers under the influence of Rickey's brilliant inquisitive mind while battling his own internal prejudices against "non-aggressive" play.

Rickey entered management with a love for aggressive play. As a field manager he was known for over-managing, changing his line-ups, using a lot of bunts, hit-and-runs, steals, trying to force things to happen. Handling his pitchers he spurned the complete games and made relatively numerous pitching changes. He wanted his hitters to swing aggressively, and he wanted his pitchers to throw aggressively, never giving in to the batter or the count. As a manager Rickey was going to have his offense steal more, walk less, and his pitchers would both walk and strike-out more batters.

That was the scenario when Rickey took over the St. Louis Browns in 1914. They went from fourth in the league in steals to second, and from fifth in drawing walks to seventh. His pitching staff would allow 44 more walks (next to last in control), strike out 91 more, and nearly double their relief appearances from 60 to 117. The team improved overall although the offense slipped back. Bill James was acquired from Detroit and contributed 16 wins as the number three starter and Rickey got valuable relief work out of virtual nobodies like Roy Mitchell, Harry Hoch, and Wiley Taylor.

Of special interest on this team was Burt Shotton, the speedy center fielder. Shotton was an intelligent, educated veteran just three years Rickey's junior. Due to a death-bed request from his Mother, Rickey did not play or manage on Sundays. Shotton was the man Rickey eventually chose to run the club in his absence. Shotton also was a player who taught himself to walk and had led the league in walks the season before Rickey took over the team.

That first year under Rickey, Shotton's walks fell dramatically as he participated in the special plays and followed the style of the team. He also had a poor year as a hitter. It is likely that Shotton and Rickey discussed the situation, for in 1915 Shotton returned to his old style of play and missed leading the league

in walks by one with a career high 118 (he had 64 in 1914). Shotton also hit 14 points higher and led the team with 93 runs. Overall, Rickey's team lost ground but it was a result of trading two veteran pitchers (Bill James and Grover Lowdermilk) for a young hitter who had not matured yet. Bill "Baby Doll" Jacobson missed the 1916 season for reasons I am unaware of, but he came back in 1917 to hit over .300 for seven straight years and starred on the great St. Louis Browns of the early 20's.

In 1916 Rickey became General Manager and hired Fielder Jones as his first field manager. Jones was an excellent choice and already had a reputation as one of the best managers and teachers in the game. Jones had been a slick fielding center fielder for the old Dodgers and for the White Sox when the American League was formed.

Jones had the chance to study under the game's first great manager, Ned Hanlon, who managed Brooklyn to two pennants with Jones in center. Hanlon's teams, both the old Orioles and Dodgers, were known for walking a lot. It is interesting to note that Jones' relative walk average increased 86% his first year under Hanlon.

Jones took over the White Sox as a player-manager in the middle of 1904. The 21 seasons prior to this move the White Sox played at a .518 rate. Jones managed the team at a .593 clip until leaving in 1909. In his 41 years his worst season was .576. The White Sox would not play that well again for seven years.

In 1915 Fielder Jones took over the Federal League's St. Louis team which had finished dead last in 1914 (.411). In 1915, Jones led the team to a virtual tie for first (.565). Jones was an exceptional manager of both the offense and the defense. Characteristic of his teams was that his hitters were going to walk and his pitchers would walk fewer batters.

When the Federal League folded Rickey was quick to hire Jones who was already a hero in St. Louis. Despite not having Jacobson or the pitchers traded for him, Jones took the Browns from .409 to their first season over .500 (.513) in eight years. Jones' Browns actually hit for a lower batting average and slugging percentage than Rickey's 1915 Browns but they scored 70 more runs. No secret, Jones' team drew 155 more walks to lead all the teams. Shotton led the league with 111. Under Rickey, the Browns' pitchers allowed 612 walks (second highest in the league). Under Jones that figure fell to 478 (-134). In one year's time the Browns had gone from being outwalked by 140 walks to outwalking the opposition by 149, a change-over of 289 walks. I think we can safely describe Fielder Jones' attitude to the walk, but, unfortunately, little is known directly of his methods.

In 1917 Branch Rickey was forced out by the Browns and became the new General Manager of the Cardinals. He inherited Miller Huggins as field manager and went with him one year (.539) before switching to Jack Hendricks. Jack had the misfortune of taking over the Cardinals in a war year, and no team was hurt worse than St. Louis. The catcher, third baseman, second baseman, left fielder, center fielder, and a couple of pitchers were called for military service. The team fell to .395.

The owner of the Cardinals insisted that Rickey take over as field manager in 1919. Once down in the trenches again, Rickey forgot everything he may have learned from

Jones or Shotton. 1919 was a mirror image of Rickey's managerial debut in 1914. The offense used more set plays, stole more bases, and drew fewer walks. The pitchers issued 63 more walks to lead the league, they struck out 53 more batters, and the number of relief appearances jumped from 79 to 137.

Again Rickey's methods led to moderate success but chiefly through sharp trades and bringing in bright young talent. By 1922 the team was playing .569-ball with almost a complete turnover in the roster. But the team began to slide again and seemed to be held back by Rickey's long-time attitude toward the base-on-balls. In Rickey's last full year as a manager (1924) his hitters were still in the bottom half at drawing walks and his pitchers were number one allowing walks.

Rickey left the dugout for good early in 1925. The team was 13-25 (.342) and played 64-51 (.557) the rest of the way under player-manager Rogers Hornsby. The next season Hornsby took the Cardinals to the World Championship. This time the hitters led the league in walks and were seventh of eight in issuing walks, a change-over of 185 walks from Rickey's 1924 team.

The next season Hornsby was traded for Frisch, and long-time catcher Bob O'Farrell was the new manager. The team actually improved its record to .601 but finished 11 games back. Again the Cardinals led in walks and were seventh in issuing walks.

Noteworthy in this period is that Burt Shotton had been working with Rickey since his playing career ended in 1923. Shotton had actively worked with many of the young Cardinal hitters on being disciplined, selective hitters. One story surviving the years is of Cardinal farm hands being ordered to take a strike before they could swing away. I have been unable to determine if Rickey agreed to this or whether Shotton chose to do it himself, possibly passing on a technique from Fielder Jones who may have learned it from Ned Hanlon. Who knows?

What is known is that Rickey's attitude toward walks reportedly changed in this period. Although still reluctant to notice or trade for a batter who draws walks, Rickey began preaching the importance of hitting "good pitches". Rickey still believed there were legitimate "bad-ball" hitters, but heaven help the Cardinal farm hand making outs on pitches outside the strike zone.

I had never personally been a big believer in the technique applied by Shotton. It seemed too restrictive, but one can see where instruction could involve more forceful restrictions than you would apply to an "educated" hitter. Certainly, the technique forced the batter to experience patience and what was and was not a strike in the umpire's eyes. Ted Williams often advised hitters to take a strike. It is hard not to notice that his first team in Washington increased their walks by 176 and their runs by 170. Some of that improvement came directly from the reduction of the strike zone in 1969, but even relative to the league, the improvement in both areas was dramatic.

Back to Rickey's Cardinals, 1928 saw several significant changes. Burt Shotton left the organization to take the managerial position in Philadelphia and Bill McKechnie replaced O'Farrell as the Cardinal manager. McKechnie's hiring was similar to Rickey's hiring of Fielder Jones. "Deacon" McKechnie was a "star" manager with a winning record of .545 or better in six seasons, .578 overall, and a pennant in 1925.

McKechnie brought home the pennant in 1928 with a .617 season. Again the Cardinals led the league in walks and the staff even led in fewest walks issued. In 1929 the Cardinals pitching fell apart as their 1928 ace Bill Sherdel went from 21-10, 2.86, to 10-15, 5.92, and old Grover Cleveland Alexander caved in to age (9-8, 3.89) after being 16-9 with a 3.36 ERA in 1928. McKechnie was fired with a 33-29 record (.532) and Billy Southworth took it the rest of the way at a .489 pace (43-45). Rickey eventually regretted this firing when his 1939-40 Cardinals trailed the pennant-winning Cincinnati Reds managed by Bill McKechnie.

In 1930-31, though, the Cardinals took pennants with Gabby Street at the helm, an old catcher known for his handling of pitchers. This would also be the end of an era for the Cardinals. No longer would they be the walkers of the league. Burt Shotton's training was fading out as the new Cardinals came up. The new generation of Cardinals would be talented (Pepper Martin, Ducky Medwick, Ripper Collins, and Leo Durocher) "free-swingers" as opposed to most of the Cardinals from 1926-32 who came under Shotton's influence.

In 1932 Gabby Street's Cardinals fell from first to sixth. Rickey brought Street back in 1933, but fired him after two-thirds of the season and named Frankie Frisch as player-manager. At the end of the 1933 season, Burt Shotton got the axe in Philadelphia, went to work for Cincinnati and eventually returned to the Cardinals where he helped train the next generation of Cardinals for the 1940's.

On the surface, Shotton was a failure as a manager in Philadelphia. In six seasons he had only one .500 team (.506) and an overall record of .403. But what should not be overlooked is that he took over a horrible team for a financially strapped and poorly-run organization. The team played .331 before Shotton and by Burt's second season he had them playing .464-ball, their best mark in a dozen years. From 1918 to 1948, a 31-year period, the Phillies had one first division, .500 club and it was managed by Shotton. In Shotton's 6 years they finished last, twice. Nothing to be proud of but in the other 25 seasons of that period they finished last 15 times. Shotton's 1929 and 1931 teams would be the best of the Phillies in that 31-year-period.

Shotton's managerial philosophy geared the offense to drawing walks and hitting for power. This was an interesting development in Shotton's attitude as Burt was a weak power-hitter as a player even for his dead-ball era. Shotton adjusted well as a manager and teacher to the live-ball era. Part of his walk-theory was looking for a good pitch to hit which easily translated to looking for a good pitch to drive.

Shotton inherited a team that scored 678 runs and in two years they were scoring 897 runs. Their walks went from 434 to 503 to 573. Their power percentage went from .090 to .115 to .158. The homers went from 57 to 85 to 153.

Shotton had adopted Rickey's belief in using the bullpen (the relief appearances went from 112 to 189 to 204), but unfortunately he also adopted Rickey's belief that the pitcher should never give in to the hitter or the count. Like Rickey's teams, Shotton's pitchers walked more (that first year their walks allowed jumped 209 from 452 to 616) and struck out more batters.

By his third year Shotton began to ease back on his aggressive attitude on pitching, but he would never completely abandon the theory or experience much success in improving his pitching. Fortunately, Shotton's success with the offense was phenomenal. By 1932 Shotton's Phillies were the top hitters in the league; they led in runs, homers, walks, batting average, and slugging percentage.

Back in St. Louis, Rickey was enjoying the first success of what he later conceded was his favorite group of players. Frisch's Gashouse Gang took the pennant and beat a powerful Tiger team for the World Championship. They also were fifth in drawing walks, their lowest finish in this category since 1920 when Rickey was their manager.

The next three years Frisch's Cardinals finished second, third, and fourth. In drawing walks they went fourth, sixth, and eighth. The fact that Rickey brought Frisch back for the 1938 season is a testimony to Branch's affection for Frisch and his style of play. Never before had Rickey gone even two full seasons with a manager not winning the pennant. Finally, in September of 1938 with the Cardinals under .500 (.463) and in seventh place, Frisch was fired.

In 1939 the Cardinals bounced back all the way to .601 but finished second to McKechnie's Reds. Ray Blades was the manager and the team drew 63 more walks and scored 54 more runs. It is somewhere in this period that Rickey began to take interest in players who walked and hit for power and became less enchanted with the "bad-ball" hitters (Rickey traded the legendary free-swinging Ducky Medwick in 1940 when Medwick was only 28), and began to take a more active role in designing instruction to teach the strike zone.

There were a number of factors that likely played a role in Rickey's transformation. On that 1939 team was Johnny Mize who took his first home run crown and batting title while leading the team with 92 walks, about 25 more than any player had drawn under Frisch. As talented as Frisch's Cardinals had been, they still won only one pennant. The Cardinals' four other pennants (1926, 1928, 1930, 1931) were all won by teams that walked more than the league average. The Frisch team with the best win percentage (.623, 1935, finished second) and most runs scored (829) was also the only Frisch team to finish as high as fourth in drawing walks. Perhaps most important of all, Rickey respected his friend and colleague Burt Shotton who always believed in and preached disciplined hitting.

In 1940 the Cardinals got off to a horrible start, Ray Blades was fired, and Billy Southworth took over a 15-29 club (.341) and they played at a .633 pace the rest of the way. Southworth had managed many of the young Cardinal players at Rochester; (Mize, Marion, Owen, Slaughter, and Crecheen); he was a Shotton hitting disciple and an excellent handler of pitchers who went against the Rickey-Shotton theory of pitching.

In 1941 Southworth's Cardinals played .634-ball but finished second to Brooklyn in both wins and runs. The team did draw 71 more walks, 128 more than Frisch's last team.

In 1942 the team went over the top. They won the pennant with a .688 mark and beat the Yankees 4-1 for the World Championship. They led the league in runs, batting average, and slugging percentage. They also drew more walks than any Cardinal team since McKechnie's 1928 pennant winner.

In 1943 Rickey went to Brooklyn as General Manager and inherited one of his favorite managers and former Gashouse Gang shortstop, Leo Durocher. The Dodgers first hired Leo in 1939 and to his credit he did little to disturb Brooklyn's reputation as a good offensive club that walked a lot. The year before Durocher took over the Dodgers they led the league with 611 walks and scored only 21 fewer runs than the leading offensive team. Dolph Camilli led in walks (119) and Cookie Lavagetto had 68 with only 487 at-bats.

Under Durocher the Dodgers led in walks in both 1941 and 1942 with Camilli leading the way both years. Under Rickey the Dodgers continued to walk and play well offensively through the war years. In 1946 Durocher drove the Dodgers to a strong second place finish (.615) as a result of losing a playoff to Rickey's old Cardinals. The team led in walks with 691. The league leader in walks (137) was Dodger Eddie Stanky, a walker that Rickey went out of his way to acquire from the Cubs in 1944.

In 1947 Durocher was suspended for a year and Rickey turned to 62-year-old Burt Shotton who had not managed in the big leagues for 14 years. It was not an easy decision for Rickey who preferred firey managers and Burt "Barney" Shotton was, as described by traveling secretary Harold Parrott, "...[an] old gent [who] ran the team in a business suit with a Dodger windbreaker over it, so he wasn't allowed onto the field, even had he been spry enough. Barney hardly ever raised his voice enough to be heard at the other end of the dugout, much less by an umpire, and what he did say wouldn't have upset a Sunday School."

Shotton managed the Dodgers just like he did his old Phillies, this time working with a far stronger talent base. The Dodgers scored 73 more runs and they did it Shotton's way.

	Year Before Shotton	Shotton's First Year	Difference	
Phillies	SB	68	53	- 15
	BB	434	503	+ 69
	P%	.090	.115	+ .025
	HR	57	85	+ 28
Dodgers	SB	100	88	- 12
	BB	691	732	+ 41
	P%	.101	.112	+ .011
	HR	55	83	+ 28

The 732 walks is amazing. When your team has just led the league by 99 walks you figure there just is not that much more you can squeeze out. But Shotton got Reese to draw what would be a career high relative walk average. Reese also set new career highs in homers, slugging percentage, RBI's, and matched his best batting average. Shotton got to 36-year-old veteran Dixie Walker and coaxed him to live up to his name. Walker's previous high was 75 walks in a season of 672 plate appearances, but in 1947 he drew 97 walks in 626 plate appearances. Walker hit .306 and drove in 94 runs. Shotton made Jackie Robinson aware that the pitcher's beanballs gave Jackie an edge in the count and a way to make the pitcher pay. The 1947 Dodgers drew 120 more walks than any other team, 268 more than the Phillies who also scored 192 fewer runs.

Again Shotton was not a strong pitching manager but the team played at a .610 pace and took the pennant by 5 games. Rickey was extremely pleased with Shotton's performance, but, as was understood by all, Durocher would return to the helm in 1948.

Rickey knew the 1948 Dodgers would be a team in transition as he tried to open up positions for his younger players. Stanky and Walker would be traded. Young players like Hodges, Snider, and Campanella would be eased into the line-up. Hodges and Snider were young inexperienced free-swingers and Rickey wanted Shotton to work with them as well as with "bad-ball" hitters Carl Furillo and newly acquired Billy Cox.

Shotton had Rickey's full backing on this task, and Rickey even actively participated in the efforts to teach Snider his strike zone. Snider admitted he didn't know his strike zone from a hole in the ground and proved it in 1947 when he hit .241 with no homers and 3 walks in 86 plate appearances (.035 walk average). Snider would go through drills where he had to stand ready to hit, eager to hit, but he was not to swing the bat while pitchers threw him pitch after pitch. Snider had to call them balls or strikes with Rickey or Shotton correcting his calls.

In exhibition games Snider and the others were forced to take a strike before swinging away. In special batting practices they were instructed to look for and swing only at specific pitches or locations. Shotton and Rickey tried to teach them the goal was to drive the ball rather than make contact. They tried to pass on the strategy of calculated anticipation, and they pushed the attitude that walking is okay. Walks reflect intelligence, maturity, confidence in yourself and your team mates; be willing to take the walk for your team.

Durocher took exception to what he felt was interference with his team and tried to take the rest of the team in the other direction, tried to make them more aggressive hitters. Seventy-five games into the 1948 season the Dodgers were under .500 (.493). Jackie Robinson was walking below the league average for what would be the only time in his career. Pee Wee Reese's relative walk average fell from 1.89 to 1.30. The incumbent catcher Bruce Edwards was walking 10% less and Durocher had given an outfield job to Marv Rackley whose .063 walk average was the worst for a Dodger regular in years. Neither Reese, Robinson, or Edwards was hitting near as well as in 1947.

Walter O'Malley was pressuring Rickey to fire Durocher, and Horace Stoneham of the Giants was getting ready to sack Mel Ott and wanted to hire Shotton as the new manager. Rickey did not want Shotton to leave the Dodgers; he wanted the team turned around, and he wanted a teacher for his young players. Rickey solved all the problems by firing Durocher who went to the Giants, and replaced him with Shotton.

The Dodgers pulled together under "Old Barney" and played .595-ball (47-32) to move from fifth to third place. Had they played .595 all season they would have tied for first.

In 1949 Shotton had the Dodgers back in first place with a .630 mark. They led the league in runs scored, homers, and were second in walks despite playing the young free-swingers Snider and Hodges as regulars. Snider's previous big league experience included a .243 batting average and 5 homers in 243 at-bats with a .058 walk average. In 1949 his walk average was .092 and he hit .292 with 23 homers and 92 RBIs. He

did lead in strike-outs, but neither Shotton or Rickey cared. In 1948 Hodges hit .249 with 11 homers in 481 at-bats; his walk average was .082. In 1949 Hodges hit .285 with 23 homers and a .100 walk average.

In 1950 Shotton's pitching faltered and the team finished second (.578) despite leading the league again in runs scored and homers. This time Hodges hit 32 homers and Snider and Campanella hit 31. In 1951 O'Malley forced Rickey out and Branch went on to become the General Manager at Pittsburgh. Shotton, 66 years old, retired. Shotton's record with Brooklyn was 326-214 (.604). That is the best record by any Dodger manager over four consecutive seasons; not Lasorda, not Alston, not Durocher, not even Ned Hanlon (he actually was the next closest at .600, 1899-1902), but Burt Shotton, and he set in place and started the most successful group of players in Dodger history (from 1949 to 1956 they went 767-466, .622).

The two highest relative walk averages in Reese's career came under Shotton (1947 and 1949). Reese's 1950 season, his only other full season under Old Barney, was the 4th highest of his career. Those seasons also included Reese's best power years.

Jackie Robinson set new career highs in relative walk average in his three full seasons under Shotton and also had his two best offensive seasons in 1949 and 1950. The rising walk averages continued in Jackie's career and he remained a strong offensive performer through age 35.

Carl Furillo tried to follow Shotton's teaching but quickly reverted to his old form after 1948, and Shotton let him be. Through age 33 Furillo's relative walk average never topped .91 except for that one year in 1948 (1.11) when he was one of Barney's special pupils. Furillo was pretty much the same in 1948 (.172 RC%) as in 1947 (.183 RC%) so the experiment did not hurt him, and the experience may have helped him age well. Furillo's relative walk averages began to rise fairly steadily for age 29 to a peak of 1.07 at age 34. It was at age 34 that Furillo stunned baseball by taking the batting title (.344) and hitting over 20 homers (21) for the first time.

Gil Hodges' relative walk averages began a steady rise under Shotton, moving from .88 to 1.19 in three years. That steady rise would end up covering a five-year span from .88 to 1.91 and see Hodges become a 40-homer hitter. Hodges relative walk average never fell below 1.15 after Shotton and all of his seven best seasons involved relative walk averages of 1.19+.

Billy Cox was the initial failure of Shotton's 1948 pupils. Cox took more walks than ever before but it made him a worse hitter, much as it momentarily did to McCovey and Lowenstein. Cox began to hit better at his old level, and, like with Furillo, Shotton did not push him. Oddly enough, Cox would also have a relatively big year at a late age while walking a lot. Cox was 33 when suddenly his walk average rose above the league level for the first time in his career since the 1948 experiment. Cox set new career highs in batting average, slugging percentage, and homers per at-bat.

Duke Snider's relative walk averages continued to rise after Shotton's retirement much like Hodges' did. In Snider's case his walk averages rose steadily over an eight-year period. Snider's five 40-homer seasons all had relative walk averages over 1.35.

This seems like a good place to end this story-lesson. From the standpoint of illuminating actual techniques used to enhance walking and overall hitting it seems an excessively long and cloudy lesson. There is a method to this madness, but first we need to review some of the techniques mentioned.

It seems there are actually three different problems to be addressed. Some players cannot walk or hit up to their ability simply because they do not know their strike zone. Others know their strike zone but don't walk or hit well because (A) their approach is so aggressive they emotionally don't want to take pitches or walk; or (B) they simply have an incorrect hitting theory that you automatically put wood on nearly any strike you can. A lot of times the latter player is one with above average speed who, guaranteed, has heard a hundred times that a player with his speed should just put the ball in play and run (that's been a pretty stupid theory for 64 years now). Often this player is also on the small side and the thinking is that if he hits the ball hard, it still isn't going anywhere so he might as well just slap the ball around (just slapping the ball around has always been a stupid theory).

Okay, Kid, what's your strike zone? Stand him in the box; insist he be ready to hit. He has to be thinking about hitting while he judges whether they are balls or strikes, no swinging, just calling the pitches and having his calls corrected. Chances are if he doesn't know his strike zone, he has played a lot of games without umpires or been an impatient hitter. Taking a lot of pitches is good experience for him. Just as likely the batter will start to moan about letting some fat pitches go by that he would love to smash. That gives the instructor a chance to point out that if he could lay off the bad pitches more, he would get more of the good ones to hit. The instructor could then go on to expand the "game" by allowing the batter to swing at any strike he wants, but if it is isn't a liner or deep blast, it counts as 2 or 3 or whatever number of calls missed.

Dealing with the emotionally aggressive hitter who does not want to take pitches and resists walking is when it really gets tough. At times they may actually have a mental block against changing their behavior. As part of their defense they may rationalize their hitting style as reasonable. Rather than rationally arguing the point, which they have no intention of doing anyway, the instructor is better off shaping the behavior indirectly. Earl Weaver, baseball psychologist, would probably answer "That's true for players with less hitting ability, but you are too good for that. You are good enough to do it this way. You can do it." The two points that must be subtly transferred to make him a pupil are (1) that he is capable of performing the new behavior and (2) that the new behavior is truly desirable.

It seems the Shotton-Williams technique of requiring the batter to take a strike is geared to that first point. The batter gets a chance to experience patience, to see that it does not automatically hurt his effectiveness and that he is capable of hitting reasonably well even allowing the pitcher this edge. The instructor's feedback should include, "You can do it. You are doing it. And if you can do it under such harsh artificial restrictions, think how much better you can do substituting sound judgment for these automatic restrictions."

Selling the new behavior as desirable is Madison Avenue stuff. "This is what good hitters do." "Intelligent hitters go at it this way." "Mature hitters know this approach." "Confident hitters do it this way, so do the 'team-players' and the winners." All the while the instructor is selling his belief that his pupil has the ability to be a good, intelligent, mature, confident hitter, a 'team-player', and a winner.

When that is accomplished the aggressive hitters are ready to go to school with the other ignorant (not dumb but ignorant) hitters. Now is the time for the voice of reason; let's talk about it. No good hitter, power-hitter or otherwise, just slaps the ball around. That isn't hitting. Pete Rose doesn't do it; Rod Carew doesn't do it. They are making good hard consistent contact, and they are thinking.

If you physically lack the ability to hit for power - incidentally, what's the difference between you and Joe Morgan? - the goal to stay away from long flies is not to be confused with just slapping the ball around. You want to look and work for pitches you can hit. That is true whether you have power or not. What about Willie Wilson? Are you as fast as Willie Wilson? Is Willie Wilson the best offensive player he could be? I'm not convinced of that. He has size; he was a power-hitter in high school. Maybe his use of his speed diverted him from a more successful path where he would have hit with more power and more walks.

What about you guys already making good hard consistent contact? Why not do more? Look at all those guys out there hitting for more power than you. You could do that. Think about going up there and getting the pitch you can drive. It takes a little more patience, and it helps if you can anticipate the pitches, but that's no genius on the mound and his options are limited. Johnny Mize once likened it to learning to be a good card player.

Your strike-outs will likely go up, but they don't differ much from batted outs except you cannot ground into a double play. We are counting positives. If you are a better offensive player, no one who matters is going to care how you made your outs.

You could do it. Ryne Sandberg did it when Jim Frey set him in that direction. Dick Williams did the same thing with several players including Yastrzemski, Harrelson, and Kennedy. Yaz was 27 years old and had never hit more than 20 homers and averaged only 16 in his 6 full seasons. Then he averaged 37 homers over the 4-year period 1967-70 and hit 28 homers as late as age 37. Terry Kennedy at one point had only 8 homers in his 739 major league at-bats and 13 was his minor league best. Then in 1982 and 1983 he hit 21 and 17 homers.

There is room for all kinds of improvement when you hit with an idea up there. Know your strike zone, know your hitting zone, know what you can hit and when. You won't be the first hitter to realize you don't hit certain pitches in certain locations and that there are other pitches you don't hit well unless you are looking for them. Know the pitcher, know the situation, be patient and confident. The goal is to hit your pitch, not the pitcher's. When the pitcher fools you, ask yourself why. Help each other out on the bench and in the clubhouse. Talk hitting. Talk about pitching.

In all of this the walk has hardly been mentioned. That is natural enough. It is easier to hold a hitter's attention talking about hitting than it is teaching him about walking. Sometimes it seems that most hitters become better hitters without even realizing that the adjustments they made also led to their drawing more walks. "Hey, Smacko, you got 80 walks!" "Really?" This is probably the major reason that so many players religiously subscribe to the clearly false theory that walks are issued according to the respect of the pitcher for the batter.

Listening to Eddie Robinson talk about how he went from a .254 hitter (his career mark at age 27) to a .292 hitter with power (1949-52) he never talks about walking more. In fact, when asked if improved knowledge of the strike zone helped turn him around, he makes the point that he always knew his strike zone and never had much trouble with locations in the strike zone. "What turned me around was becoming a guess-hitter....except it wasn't really guessing. Bob Feller knew from my days in Cleveland that I couldn't hit the curve. So I knew he was going to throw me a curve. And I discovered that I could hit a curve, even Feller's curve, if I was looking for it. He threw it; I laced it for a hit, and he just kind of stood on the mound giving me a funny look. From then on it was a whole new ball game."

Eddie had an edge in that he knew his strike zone and was not an overly aggressive or impatient hitter. He simply went from a self-described theory of "hit what you see" to a thinking approach involving patience and selectivity. Such an approach routinely leads to more walks, and that is what happened in Robinson's career. In 1948 Robinson hit .254 in a full season with a relative walk average of .95. The next year he was on his way as he hit .294 with 18 homers. His relative walk average was 1.36 and would average 1.20 for the rest of his career.

Those walks made Robinson an even more valuable offensive player and that positive point should eventually be driven home to all hitters. Getting on base is a major part of scoring runs and winning games. A called strike three on a close pitch with a count of 3 balls, 2 strikes, nobody on, is actually the sign of a winning hitter and a lucky stupid pitcher. The team needs a base-runner and if the pitch really is close enough to possibly be a ball, the chances of hitting that pitch well will almost certainly not outweigh the value of taking it in hopes of ball four.

The encouragement of such thinking is another step in the process of developing better offensive players. The players need to be aware of the value of a walk, feel good about taking a walk, and positively reinforce each other when they walk. The base-on-balls is never going to get public acclaim outside of Earl Weaver's books; it needs to get its due in the dugout.

Dick Williams has been known to post charts in his clubhouse of individual performance in categories that receive little attention. At various times it has been home runs allowed with men on base, lead-off walks by the pitcher, getting the runner in from third base with one out, etc. Williams is not concerned with measuring individual performance here, although both he and the chart are going to praise it. His chief goals are getting the players to think about those performances, to give them feedback, and offer them the challenge to improve.

It might help to have a chart showing who has drawn a lead-off walk, who has drawn a walk with the bases empty regardless of the outs, and who has drawn a walk that moved the lead runner into scoring position. At the bottom of each category it could show how many times that type walk scored and how often the advanced runner scored.

The players could learn a number of lessons from such a chart. One, they would see that most walks actually occur under one of those three positive categories. Two, they could actually see how many runs result from this overlooked aspect of offense. Three, the players would become aware of which players excelled in such production. This would hopefully open a new avenue of learning among the players themselves. Those marked players would become subjects of study for their team mates and possibly become centers of discussion with their ideas being shared.

That pretty much seems to wrap it up in a nice, cohesive, cosmopolitan, action-oriented package. So, why bother with the long-winded Branch Rickey story? Mainly because it has a lot of reality to it in how people learn, how learning impacts on internalized beliefs, how management impacts on organizational behavior, and it all takes place in baseball settings and involves the topic at hand.

In this story Branch Rickey comes across as being rather slow and pig-headed at times. It is embarrassing to see the guy repeat the same mistakes when managing the Cardinals as when managing the Browns. The man is in baseball 30 years before he begins to fully understand the offensive walk and productive hitting strategies. Even then it is only after listening for 20 years to a respected friend expound on the subject.

Rickey ends up going through his whole life never appreciating the importance of having his pitchers give in a little to throw strikes. Forty-two years he served as either a manager or general manager. Twelve of those 42 teams lead the league in offense. Only one ever led in ERA. That may be a reflection of the way he treated his managers who said, "Hey, let's throw some strikes out there." Only one of Rickey's 42 teams ever led the league in fewest walks allowed. That was Bill McKechnie's team. McKechnie was fired 62 games after leading the Cardinals to a pennant. McKechnie is in the Hall of Fame for his managing; Rickey is not.

Four of the remaining 41 teams finished second in fewest walks allowed, one finished third. Hornsby was traded away immediately after managing one of those seasons. Bob O'Farrell managed another of those teams and was immediately replaced after a second-place finish with a win percentage that would have taken the pennant the year before (.601). Frankie Frisch managed one of those teams but made sure he never did it again. Billy Southworth managed two teams that finished second and third in fewest walks allowed. Southworth saved his neck by winning the pennant when his pitchers were second, and Rickey was gone to Brooklyn before he could replace him.

These five managers, McKechnie, Hornsby, O'Farrell, Frisch, and Southworth, all turned in fine staff ERA's the seasons their pitchers threw strikes. Southworth had the lone Rickey team to lead in team ERA, the other year under Southworth they were third. McKechnie's team was second in team ERA and O'Farrell's, Frisch's, and Hornsby's were third. That is pretty impressive when you realize that over 70% of Rickey's remaining teams were fourth or lower in team ERA.

With the exception of Frisch, the five managers with the longest tenure under Rickey managed a total of 23 seasons without ever once having their pitching staff in the top three for fewest walks allowed.

Forty-two years and he never saw it. Yet when it comes time to praise Branch Rickey, I will be standing in line. Over my years of baseball research Rickey has become a figure of special personal interest. Near as I can tell he was every bit as sharp as his legend proclaims. He deserves his place in the Hall of Fame, and if he were alive today, he would be a million-dollar-a-year General Manager and earn every penny.

In this particular story we are simply seeing Rickey's judgment at its worst due to a very human condition. Branch Rickey was no more slow or pig-headed than Abraham Lincoln was a bigot. The earliest intellectual shock of my youth was to read Lincoln's collected writings and realize that he believed in white supremacy most of his adult life. This was an internalized belief system of most Americans in his era, and, as is the defined nature of such belief systems, it was extremely resistant to reason and change despite Lincoln's fine character, unusual intelligence, and willing open mind. Those qualities eventually made it possible for him to change, but it was a tedious and sometimes painful struggle that would still be going on when he sat in the White House with the nation torn in civil war.

That is a rather grandiose comparison for a bunch of guys talking about whether to take a walk or not, but the point is that none of us look too sharp when wrestling with an internalized belief system that is widely supported though ridiculously absurd. We have a lot of those in baseball. We have people talking baseball strategy on talk shows who don't know the dead-ball era ended 64 years ago.

The chances of changing an internalized belief system are extremely poor. In such cases where the belief system is baldly wrong it is usually best to do what old Barney Shotton did with Furillo and Cox. He quit trying and asked himself if they were worth keeping with their flaw. In their case the answer was yes. Had it been Rob Picciolo I think Shotton would have helped him pack his bags.

Baseball generally understands the problem of internalized belief systems that do not match reality. That understanding is the basis of nearly all intelligent firings at the management level. With a Gene Mauch you might ask yourself whether you can live with his ability to recognize and nurture big-inning talent and then dismantle those innings by bunting himself to death. In his case you would probably have to say, yes, his positives outweigh his near untouchable erroneous belief in the bunt. Given his ability to reason and possible length of service, you might want to spend a decade changing his mind.

At the management level it is dangerous to know it all. When you know it all, you tend to internalize it and heaven help you if you got it wrong (Are you listening Whitey?). Fortunately, people tend not to internalize false belief systems. As long as there is any doubt we leave the door open to reshape our belief according to new insights. Some doors are just shut more than others. Rickey barely left the door open when it came to his emotional attachment to aggressive play. In other areas learning was as easy as changing hats.

Look at the relatively rapid transitions in Rickey's theories for selecting and dismissing managers. Through 1938 he went with several playing managers but he never hired another in his final 17 seasons. He hired a popular successful manager from outside his organization in Fielder Jones and did it again when Bill McKechnie became available, but he abandoned this strategy in his last 27 seasons. Before Gabby Street, no manager lasted two full seasons under Rickey except Branch himself (and the truth is he tried to get the owner to let Branch fire himself). But from 1930 on everyone got two full seasons, except for Ray Blades, and most got to start a third season before Rickey would consider a change.

One of the lessons from this story is that the ability to learn is not a given fact for every subject no matter how sharp the pupil. Mortal man tends to vacillate between being rational (able to reason) and rationalizing (manufacturing reason). Learning goes better with the young because they are less rationalizing. Your best chance is to get them while they still think you know more than they do. In baseball terms that means getting them before they experience major league success. Notice that Snider and Hodges were rookies in 1948 while Furillo and Cox were already established regulars.

The other major lesson from the Rickey story is that well-designed, logical, reasonable plans and techniques are not the key to changing a specific aspect of organizational behavior. The key is shaping the belief system of management. What capable management believes in will eventually get done. You may not understand the process, but the results will be there.

Fielder Jones shaped the Browns the same way he did the White Sox and the St. Louis entry from the Federal League. Rickey the manager shaped the Cardinals like he shaped the Browns. Shotton's Dodgers changed the way Shotton changed his Phillies, Rickey as a General Manager changed his managers to fit his belief system which meant through them Rickey's beliefs impacted right down to the field level. That includes his changing belief system on the offensive walk. Why didn't Rickey hire Shotton as his manager in 1928 rather than letting him go to Philadelphia? Do you think Rickey would have sacked Durocher in favor of Shotton if it was 1938 rather than 1948?

Any investigation into the shaping of field performance would be incomplete without this basic fact. The stronger the backing of management, the more effective the change. When that is a given fact, it is not surprising for management to come up with new, better ways to accomplish the goal.

Percentage Baseball Reconsidered:
Model and Method
Charles Pavitt

For decades, baseball people have sung the praises of "playing the percentages". The goal is clear; given the present configuration of baserunners and outs, choose the strategy which either (1) maximizes the total number of runs which can be scored, or, in the circumstance where one run is crucial, (2) maximizes the probability of scoring that one run. The goal of this essay is to begin the process of gaining this knowledge. First, I will summarize and critique an early technique for determining the percentages (Cook, 1966, 1971). Second, I will present a second, more defensible approach to making this determination.

During the first century of organized baseball, no basis existed for accurately estimating the percentages. Managers, left to their own devices, have generally based their strategy decisions on what Tversky and Kahneman (1974) called the "representativeness heuristic", judging the probability that one object or event is related to a second object or event by the extent to which the two resemble one another. In baseball terms, if the goal is to score runs, and a strategy gives a result which looks like it brings one closer to the goal, then managers use it. As a runner on second looks closer to the goal than a runner on first, sacrifice bunts and attempted stolen bases are popular tactics. In short, "playing the percentages" generally consists of using the strategy which gives the appearance of working.

Happily, we are beginning to learn what the percentages really are. As with most "heuristics" (short-cut decision procedures), using "representativeness" sometimes works and sometimes fails. Apparently, attempting to steal bases works if the thief is generally successful, but sacrificing fails because it gives up an out without a struggle. These comments are among the recommendations of Earnshaw Cook, whose two books (1966, 1971) should be required reading for any respectable baseball scientist. Basically, Cook showed that the probability of scoring runs is a function of the multiplicative product of each player's probability of getting on base and the probability of that player getting extra bases by their own effort. Thus, the probability of scoring runs can be computed by taking only the performance of each successive batter into consideration. Cook's procedure is formally identical to more recent procedures such as James' "Runs Created" and Boswell's "Total Average."

In addition to knowing the overall probability of a team scoring runs as a function of its players' offensive performance, "percentage baseball" requires knowing the probability of scoring runs from every combination of base and out. Cook next attempted to estimate these probabilities. Using data for major league play from 1950 to 1960, he first computed the overall odds of making an out, and then estimated the separate probabilities of making an out while at bat and while on the basepaths. Next, based on these percentages and with the aid of some questionable assumptions (such as only allowing sacrifice bunts with no outs and a runner on first), he estimated the odds of advancing a runner at any one at bat from each base and each out. Finally, by combining all possible sequences of advancing runners, he estimated the total probability of scoring a run, and the number of runs one could expect to score, from any base/out situation. It was an imaginative attempt at determining the percentages, and in some ways a successful one. For major league play between 1950 and 1960, Cook's procedure predicted the total number of runs scored from at bat perfectly, from second and third bases within one percent, and from first base to within 2.2 percent.

Duly satisfied, Cook went on to evaluate the odds of scoring given various strategic options. The simplest example is attempted stolen bases. The probability that stealing is worthwhile depends upon the probability of success, the probability of scoring given success, and the probability of scoring given failure. He concluded, not surprisingly, that managers attempt to steal too often with poor basestealers and not enough with good basestealers (this book was written after Aparicio and Wills but before Brock and the true comeback of the stolen base). He went on to evaluate the sacrifice bunt (bad unless the batter is pathetic), the squeeze play (very good and grossly underutilized), the intentional walk (a terrible idea in most circumstances), and the hit and run (positively in his first book, negatively in his second).

However, the accuracy of his evaluations of strategy options is only as good as the accuracy of his predictions for runs scored given each on-base/out situation. The percentages above do show surface accuracy, but they hide two fundamental flaws. The first flaw was alluded to earlier; certain options (e.g., sacrificing with one out or more than one runner on base) were assumed away. If, however, this assumption led to serious problems, then the method would not have been an accurate predictor of total runs scored. The second flaw is more serious. Cook assumed that a player's offensive performance is equal for all on-base/out situations. Now, as Cook has shown, using a player's offensive performance will lead to a good estimate of the player's overall contribution to team run production. This is fine; James does the same thing with Runs Created with similar success. Unlike James, Cook also wanted to apply his method for evaluating strategy options, but this further step requires specific information about player performance for each on-base/out situation. Assume, for the sake of simplicity, that a player's overall on-base percentage is .300, that half of the player's at bats are with bases empty and his on-base percentage is .280 at these times, and that the other half of the player's at bats are with runners on base and his on-base percentage is .320 at these times. Cook's use of overall player performance would lead to an underestimate of the player's productivity, and subsequent team run production, with runners on base and a corresponding overestimate of productivity with bases empty. These discrepancies would be hidden, would actually cancel each other out, in Cook's overall summary analysis. Thus, Cook's estimates for team run production for each on-base/out situation, and subsequent evaluation of strategy options, may be far less accurate than they appear to be.

Cook expressed some concern with this problem (1966, p 53) by showing that for the Oriole 1961 season, an almost equal number of players batted with no, one, and two outs, and that what discrepancy existed could be accounted for by double plays and unsuccessful steal attempts. This finding would only occur if there were an equivalent on-base percentage for batters in each out situation. However, not only does this finding ignore the possibility that offensive performance differs among on-base situations, it also ignores the possibility that there is an interdependence between out and on-base situations. Let us expand our example. Our overall .300 player (.280 with nobody on, .320 with runners on) actually produces as follows:

	No Outs	One Out	Two Outs	Overall
Nobody on Base	.270	.280	.290	.280
Runners on Base	.330	.320	.310	.320
Overall	.300	.300	.300	.300

The moral of the story is that information on player performance specific to each on-base/out situation is necessary for the proper evaluation of strategy options.

With twenty years of hindsight, we now salute Cook for an heroic first attempt at evaluating "percentage baseball." His model, based on conditional probabilities, was sound, and his results were as accurate as one could expect given the information he had to work with; overall data based on boxscores and total season statistics. With the information

which Project Scoresheet will provide, the opportunity now exists to both propose a better model for evaluating "percentage baseball" and "load" it with the type of data necessary for its proper evaluation. The rest of this report will describe a model to represent "percentage baseball" and a method to evaluate it.

There are a number of models available for representing a sequence of events. I will describe the model best suited for representing baseball, the multi-order finite-state transition matrix. Let me define this one word at a time. A half-inning of a baseball game can be described as a system, or a set of interrelated events. A "state" is a possible condition of the system. Each on-base/out situation would be considered one possible state of the system. A half-inning is a "finite" state system, because it has only a limited number of possible states. The fact that an inning can theoretically never end (be "timeless") is irrelevant, for there are only a certain number of on-base/out possibilities. "Transition" means change or movement; the effect of each at bat is to change the present status of the system from one state (on-base/out situation) to another. It is "multi-ordered" because one may be interested in many different types of transitions. If one is interested in the transition from the first to the second batter, from the second to the third, and so on, one is interested in the "first-order" transition. If one is interested in the transition from the first to the third batter, from the second to the fourth, and so on, one is interested in the "second-order" transition. Unless the "timeless" inning were to occur, there is an upper limit to the highest possible order (3 outs + runs + LOB - 1). Finally, states and the transitions between them can be visualized in matrix form.

Let me go through a simple example. Imagine a system with only two states, Hit and Out. In a particular half-inning, a team goes through the following states: Hit, Hit, Out, Out, Hit, Out. We would represent it this way:

	First Order			Second Order			Third Order	
	From			From			From	
To	Hit	Out	To	Hit	Out	To	Hit	Out
Hit	1	1	Hit	0	1	Hit	1	0
Out	2	1	Out	2	1	Out	1	1
	Fourth-Order			Fifth Order			Overall	
	From			From			Hit	Out
To	Hit	Out	To	Hit	Out		3	3
Hit	1	0	Hit	0	0			
Out	1	0	Out	1	0			

There are, in a six event half-inning, five first-order, four second-order, three third-order, two fourth-order, and one fifth-order transitions. Let us go over the first-order matrix. Hits are followed by hits once and by outs twice, while outs are followed by hits once and by outs once. The other matrices are read similarly.

Expanding the simple example into the "real-world" of baseball, there are twenty-four possible events from which a transition can start. Using Account Form symbolism, they can be symbolized as follows:

		Bases Occupied						
Outs	None	1	2	3	1&2	1&3	2&3	All
0	a	d	g	j	m	p	s	v
1	b	e	h	k	n	q	t	w
2	c	f	i	l	o	r	u	x

There are, however, eighty-four possible ending events for a transition. They are:

a[0] - the opposition gets to bat

b through x - as above

A' through X' - same configurations as above, but one run has scored. I must divert from Account Form practice here by using a prime for the total number of runs scored at the events, rather than the conventional practice of reserving primes for runners batted in other than the batter.

A'' through U'' - when two runs score, there can be no more than two runners left on base.

A''' through L''' - when three runs score, there can be no more than one runner left on base.

A'''' through C'''' - when four runs score, there can be no runners left on base.

Twenty-four starting events and eighty-four ending events means a huge matrix, with 2016 cells for first-order events alone! Luckily, most of the transitions corresponding to these cells are not possible. For example, one can not go from one event to a second event with less outs than the first; one cannot jump two outs with the bases empty; one can not score more runs than the total number of base runners plus the batter. The actually possible first-order transitions are checked off on the accompanying matrix; they total 314 if I figured them out correctly. If any readers would be so heroic as to check the possibilities for me and let me know if I have erred, I would appreciate it greatly.

Finally, the proposed method, a simple but effective device known as lag sequential analysis (Sackett, 1979). To demonstrate how this method works, we return to our earlier hypothesized inning with the sequence Hit, Hit, Out, Out, Hit, Out. We then choose one of the events as the "criterion" and count the number of times which every event follows this criterion at all possible orders. Choosing "Hit" as the criterion leads to the following table:

Event	Overall	Order				
		1	2	3	4	5
Hit	3 (.50)	1 (.33)	0 (.00)	1 (.50)	1 (.50)	0 (.00)
Out	3 (.50)	2 (.67)	2 (1.00)	1 (.50)	1 (.50)	1 (1.00)

Choosing "Out" as the criterion yields:

Event	Overall	Order		
		1	2	3
Hit	3 (.50)	1 (.50)	1 (.50)	0 (.00)
Out	3 (.50)	1 (.50)	1 (.50)	1 (1.00)

We then compare the proportions at each order to the overall proportions to discover whether there are any meaningful discrepancies. During this half-inning, outs apparently followed hits disproportionately often at the first and second orders. There is a simple test (using z scores) to determine the statistical significance of such findings given a large sample of events (see Hackett, 1979).

With this model and method and data from Project Scoresheet, one can recreate Cook's "percentage baseball" analyses while correcting for the probable inaccuracies forced by his limited data and stringent assumptions. One can:

- 1 - Calculate the probabilities of advancing runners, scoring runs, and the expected number of runs scored, at each on-base/out situation, at any reasonable order and in total.
- 2 - Compute on-base percentages or Runs Created-type indices at each on-base/out situation.

First-Order Transition Matrix for On-Base Out/Situations

To	From																									
a[0]	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x		
b	x		x				x		x																	
c		x		x				x		x																
d	x																									
e		x																								
f			x																							
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To	From																								
A	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	
B				x				x																	
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("x" stands for possible transitions)

3 - Perform general evaluations of different strategy options, based on the above information. Given a runner on first and no out, a batter with a known on-base percentage in this circumstance, and known probabilities for scoring runs at events second-base/no out and nobody-on/one out, one can compute the probability for success necessary for the attempted steal to be a good risk. The estimate will be more accurate than Cook's due to the use of specific on-base/out situation data.

4 - Perform more specific evaluations of strategies. For example, as the probability of scoring runs differs among the various major league ballparks, one might want to break down the evaluation by ballpark for more detailed analysis. Is the steal worth attempting at a lower success rate in a park such as Houston's as compared to Detroit's?

Analyses such as these can bring new answers to the old question of what the percentages actually are. I propose using Project Scoresheet data for these analyses, and would welcome hearing from anyone wishing to help (1735 New Hampshire N W, Apt 3, Washington DC 20009).

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METEORS

by Daniel Greenia

Players who hit over $\frac{1}{4}$ of their career home runs in one season, that year being a 30-homer year:

Team	Year	HR	Total	$\frac{1}{4}$	Pos	Age	2nd Best
Cin	George Crowe, 57	31	81	38.3	1b	34	15
KC	Bob Cerv, 58	38	105	36.2	LF	32	20
Bos	Felix Mantilla, 64	30	89	33.7	2b	29	18
Cle	Luke Easter, 52	31	93	33.3	1b	36/30	28
Atl	Davy Johnson, 73	43	136	31.6	2b	30	18
Cin	Ival Goodman, 38	30	95	31.6	RF	29	17
Phi-A	Tilly Walker, 22	37	118	31.4	LF	34/32	23
Bos	Butch Hobson, 77	30	98	30.6	3b	25	28
Phi-N	Lefty C'Doul, 29	32	113	28.3	LF	32	22
NY-N	Willard Marshall, 47	36	130	27.7	RF	26	17
Phi-N	Stan Lopata, 56	32	116	27.6	C	30	22
Min	Jimmie Hall, 63	33	121	27.3	CF	25	25
Phi-N	Don Hurst, 29	31	115	27.0	1b	23	24
Bos	Ken Harrelson, 68	35	131	26.7	RF	26	30
StL-N	Ripper Collins, 34	35	135	25.9	1b	30	23
Bal	Jim Gentile, 61	46	179	25.7	1b	27	33
Other 40-homer men over 20%:							
Chi-N	Hack Wilson, 30	56	244	23.0	CF	30	39
Cle	Al Rosen, 53	43	192	22.4	3b	29	37
NY-A	Roger Maris, 61	61	275	22.2	RF	26	39

A Comparison of Two Consistent Teams

Jack Carlson

Major league managers try to emphasize consistency in the play of their teams each year. The two most consistent teams of 1984 were the Detroit Tigers and the Pittsburgh Pirates. Although consistent, these two teams demonstrated opposites in their consistency. Detroit won on opening day and for eight days thereafter to become only the fourth major league team to be in first place for the whole season. This is the ultimate in consistency. Pittsburgh did not quite equal the record of the Tigers. The Pirates lost their first two games, assuring a last place start. They then won the next three, thereby escaping last place, but they regained their composure by losing their next six games and reached last place following the fourth of these losses (April 14), where they remained for the rest of the season. In alternating paragraphs, this paper will examine various parameters for each team to show the differences between Detroit's first place season and Pittsburgh's last place season.

Detroit won 104 games for the most wins in the team's history and lost 58 for the fewest since the 1935 team which also lost 58. The Tigers had the best overall league record for the first time since 1968 and won the American League East for the first time since 1972.

The Pirates, at 75-87, had their worst record since 1963 when they were 74-88. Pittsburgh finished tenth in the National League for their lowest finish ever and were last in the National League East for the first time.

All of these best and worst comparisons ignore the strike years of 1972 and 1981 and the short season years of 1918 and 1919, if appropriate.

The basic offensive figures show that Detroit scored 829 runs, their most since 1980, good for the most in the American League and 113 runs greater than the league's average. The Tigers' batting average was .2709 which was fourth best in the league and 2.89% greater than the league batting average of .26328. The range of team averages compared to the league average was +7.46% to -6.3%. They were also first in fewest runs allowed (643), and therefore first in run margin or runs scored minus runs allowed. The Tigers run margin of 182 was their best since 1935. Detroit was fourth in hits (1529), seventh in doubles (254), third in triples (46), and first in home runs with 187 which was their best since they hit 209 in 1962. This was a productive offense that led the league in runs scored even though out-hit by three other teams. Good home run power certainly helped the Tigers.

Pittsburgh also matched their team finish by being tenth in the National League in runs scored with 615; the team's lowest since 1968. This was 43 runs below the league average. Like Detroit, and what was amazing for a last place team, Pittsburgh was first in fewest runs allowed with 567 which was better than any year since 1975. The Pirates had a positive run margin of 48 which was fourth best in the league and better than the 11 run margin which accompanied the Pirates' second place NLE finish of 1983. The Bucs' batting average was .25501, which was seventh in the league and Pittsburgh's worst since 1968. The NL batting average was .25546, so Pittsburgh was

.176% less than the league average where the extremes were +4.17% to -4.58%. The Pirates were sixth in the league in hits (1412), fourth in doubles (237), seventh in triples (33), and ninth in home runs and their 98 was the lowest and first time below 100 since 1968. There was a decline in Pittsburgh's offense in 1984 in all departments examined and this greatly contributed to the team's poor finish. However, except for runs scored, the hitting in its ranking with the other teams, exceeded the team's tenth place finish. The runs allowed is a pitching parameter and the runs margin is good due to the low runs allowed value. It should be noted that Pittsburgh is the first team to ever finish in last place and lead the league in fewest runs allowed, and they are the only team to ever finish last and outscore their opponents.

Detroit received good pitching to go along with their good hitting so they were a balanced team. The Tiger ERA of 3.492 was the league's best and .499 less than the league ERA of 3.991. This was Detroit's best ERA since the pre-DH year of 1969. Detroit had only 19 complete games which was the fewest in Tiger history and tenth best in the league. This was counterbalanced by 51 saves, best in the league and the most Detroit has ever had. Tiger pitching gave up the league's fewest hits (1358), had only eight shutouts (ninth in league), finished fourth in strikeouts (914), and sixth in walks allowed (489). This pitching staff was very effective and reinforced Sparky's "Captain Hook" reputation and he had the bullpen to make it work.

Pittsburgh had a good pitching staff too. They led their league in ERA with 3.110 which was .478 better than the NL ERA of 3.558. This league leading ERA resulted in another curiosity in that the Pirates were the first last place team to lead the league in ERA and finish last in the division. This was the lowest Pirates ERA since 1975 when it was 3.02. The starters had 27 complete games (second in the NL), were ninth in saves (34), third in hits allowed (1344), fourth in shutouts with 13, third in strikeouts (995), and sixth in walks (502). Pittsburgh had a good set of starting pitchers and a mediocre bullpen. This staff probably would have done better in the AL since pinch hitters would not have been required; of course the pitchers could have done better in the NL, too, if the hitters had provided a few more runs to work with. To paraphrase an old baseball expression, Pittsburgh was a "good pitch, poor hit" team. Manager Tanner either couldn't or wouldn't use his usual running game and the Pirates were the only NL team that did not steal 100 bases as they finished with 98.

Detroit was the best in the AL at home (53-29), on the road (51-29), within their division (47-31) and against the other division (57-27). Their bullpen strength was emphasized by their extra inning record of 11-2, but they were an even .500 in double headers with a 9-9 won-lost record.

Pittsburgh managed to struggle to a winning record at home with a 41-40 record but was a poor 34-47 on the road. Within their division, they were 42-48 and they were the worst of the Eastern teams against the West at 33-39. The Pirates played the most extra inning games in the NL with 26 and lost the most (17), which again showed the weakness of their bullpen. The Mets were 11-1 in extra inning games. Perhaps the Pirates should have played more double headers since they had a winning 10-6 record in them.

The Tigers did not sweep all of the season's series, losing to Baltimore and Boston and tying Seattle, while winning the other ten. They were 11-2 vs. Milwaukee and 10-2 against Texas.

Pittsburgh managed to win four season's series (including Chicago), and lost five series while tying two. A 4-14 record against St. Louis and 4-8 records against Atlanta and San Diego helped to sink the Pirates.

Detroit's best month of the season was April when they nearly won the ALE at the start with their 18-2 record. They played above .500 every month with 19-7 in May (second best in the AL), 18-13 in June (best in AL), 16-11 in July (fifth), 16-15 in August (sixth), and a strong September close at 17-10, which was the league's best. A strong start and a strong finish discouraged and then finished the competition.

The Pirates also finished strongly with the NL's best September record of 17-11, and that was the only above .500 month they had in the 1984 season. Their April start was the 11th best in the league (7-13); May was fifth (12-13); June 11th again (11-20); July sixth (15-15); and in August, they were ninth at 13-15. They had the worst record in their division for three of the six months.

The best day to play the Tigers was Wednesday as it was their only day to finish below .500 with an 11-12 record. All of the other days of the week had the Tigers at .600 or better with Sunday at .6925 (18-8); Monday .647 (11-6); Tuesday .679 (19-9); Thursday .600 (9-6); Friday .643 (18-10); and a great .720 Saturday 18-7 won-lost record.

Pittsburgh excelled on Thursday which was their only above .500 day with a 13-6 record. For the other six days, they were the opponent's friend as they went 12-16 on Sunday (.429); 6-8 (again .429) on Monday; 12-13 on Tuesday (.48); 10-12 (.454) on Wednesday; .500 on Friday with 14-14; and a terrible .308 on Saturday with 8-18.

Using Bill James' Pythagorean approach to relate runs scored-allowed to games won-lost shows Detroit (with runs scored-allowed of 829-643) would have a calculated 101-61 record against their actual 104 won and 58 lost for a difference of only three.

The Tiger Pythagorean record contrasts sharply with Pittsburgh's. Remember that the Pirates actually out-scored their opponents 515-567 so the Pythagorean correlation would indicate an 88-74 season record. This is a 13-game difference from the 75-87 record they produced. Could it be said that the Pirates played "under their heads"?

It was noted that Kansas City was out-scored 673-686 and it was the first time in major league history that a first place team was outscored for the season.

The following table shows the W-L records of Detroit and Pittsburgh in games where they scored the runs listed.

Runs	0	1	2	3	4	5	6	7
Detroit W-L	0-7	1-13	4-9	10-10	12-8	13-6	14-3	17-2
Pittsburgh W-L	0-14	0-25	7-11	11-14	12-10	12-7	11-1	8-3
	8	9	10	11	12	13	14	
Detroit	8-0	13-0	4-0	3-0	2-0	1-0	2-0	
Pittsburgh	6-2	2-0	1-0	2-0	2-0	0-0	1-0	

Note that Detroit had only 34 games where they scored two or less runs and went 5-29 while Pittsburgh played 57 such games with a 7-50 record. Detroit scored six or more runs 69 times and won 64 of them for an astounding .928 record. Good hitting and good pitching went together in those games. The Pirates had only 39 games in which they scored six or more and their record was 33-6 or .846.

The next table shows the won-lost records of the two teams vs. the run difference; i.e., how many times they won or lost a game by one, two, or three, etc., runs.

Run Difference	1	2	3	4	5	6		
Tigers	25-11	16-14	13-8	20-12	6-4	9-2		
Pirates	19-33	14-27	13-13	12-6	4-4	7-2		
	7	8	9	10	11	12	13	
Tigers	6-1	5-3	2-2	0-0	0-1	1-0	1-0	
Pirates	3-1	0-0	1-1	1-0	1-0	0-0	0-0	

The Tigers were 54-33 (.621) in games decided by three runs or less. The best hitting and best pitching team in the American League won the close ones. Almost 54% of their games were close and over half of Detroit's wins came from these close games. In contrast, Pittsburgh won 46 but lost 73 games where the winning margin was not more than three. The wins accounted for 61% of the season's total and the 73 losses were 89% of the season's losses. This team did not do well in the close games despite leading the league in ERA. A mediocre offense and a poor relief staff made close games a nightmare for Pirate fans.

Detroit's best scoring inning was the first as they put pressure on the other teams early. The following table shows the runs scored by Detroit and their opponents inning-by-inning.

Inning	1	2	3	4	5	6	7	8	9	Extra
Detroit	129	93	71	82	84	110	85	103	47	23
Opponents	90	58	83	92	70	74	58	69	41	7

Note that the Tigers were outscored in only two innings and that they outscored their opponents 258 to 175 after the sixth inning. The Tigers lost their lead only eight times after the sixth inning and they came back to win three of those games. They came from behind 15 times after the sixth and won them all and were 8-7 in games tied after the sixth. It paid well to score first. The Tigers did that 95 times and were 79-16 (.832) in those games and were 25-42 in games where their opponents were first to score.

Pittsburgh saved their best scoring inning for the fourth and they outscored their opponents in six of the nine innings. The table below shows the inning-by-inning scoring distribution.

Inning	1	2	3	4	5	6	7	8	9	Extra
Pittsburgh	82	47	68	86	69	78	56	66	36	27
Opponents	80	40	75	60	74	71	48	42	46	30

The Pirates also outscored their opposition after the sixth inning and by a 185-166 margin, but they lost 17 leads after the sixth inning and had a 6-11 record in those games. They came from behind 15 times after the sixth (the same as Detroit), but were only 8-7 in those games. The Pirates were 13-15 in games tied after six innings. Pittsburgh split evenly in scoring first, doing it 81 times and being scored of first 81 times. When they scored first, Pittsburgh was 49-32 but they were only 28-53 when their opponents were the first across the plate.

The Tigers batted in 1441 innings in 1984 and scored in 430 or 29.8% of them. Detroit made .4316 bases for every time at bat (slugging average). This was the second highest value (Boston was .4409) in the American League whose range for this parameter was .4409 - .3698.

Pittsburgh batted in 1455 innings and scored in 359 or in 24.7% of their opportunities. The Pirates total bases per time at bat value was .3628 which was good for eighth place in the National League where the range was .4070 - .3506.

Two Detroit players won silver bats which are awarded to the best hitting player for each position. Lou Whittaker, 2B, and Lance Parrish, C, were the Tiger winners. The only Pirate silver bat winner was pitcher, Rick Rhoden.

Detroit finished 1984 at the top where they belonged. Good hitting, good hitting for power, the league's best ERA, and an outstanding relief corps blended well to push the Tigers to the position they deserved. They were first on their merits.

The Pirates were last in the NLE and it is difficult to figure out why. They had the lowest ERA in the majors and allowed the fewest total runs in the majors. They had the third best season run margin in their division and the fourth best batting average and were also fourth in home runs. Surely a dismal last in stolen bases in the NLE (by 35) could not be significant. No, the data do not justify last place. The Pirates did not get there on merit; the credit lies elsewhere.