

# How To Play Beane Ball

**The Oakland A's Billy Beane has perfected the new rules for winning at baseball – on the field *and* in the books. Some say that he's a genius who has mastered the future of the game. He says that doing more with less just means playing by the numbers.**

**By:** Keith H. Hammonds

**"I was up at 4:30 this morning,** on the Net. I love going to Stetson University's site, or James Madison's, to see what their ball teams did last night. That's the fun part of this game – that's the foundation. To me, that's why we're in this game – because we love it at the grass roots, where it's still at its most pure."

William Lamar Beane – Billy Beane – the 41-year-old general manager of the Oakland Athletics baseball club, perches his sandaled feet on the desk before him. He is a former ballplayer – not a great one, but fair enough to have made it to the big leagues and stayed awhile – and he still looks like a ballplayer. Both of his shoulders are shot, but he is tall and fit, with a sweep of brown hair over jock-rugged features.

Today is a great day to be a baseball guy. It's February in Phoenix, and the first morning of full-team workouts is taking place. Outside, the Arizona sun pokes past wispy clouds. It feels like spring. It *smells* like spring – like freshly mowed grass. Warning-track gravel crunches underneath the spikes of coltish pitchers loping through their warm-ups in emerald jerseys. Sluggers grin when kids yell their names.

Spring training is an annual ritual celebrating the reemergence of hope – and, hell, these days, there's nothing wrong with hope. But something else is going on here at the Papago Park Baseball Facility. For the Oakland A's, the start of the baseball season honors the careful admixture of mathematics and economics, of regression models and market analyses. Which is to say that for the Oakland A's, there is an air of certainty along with the scent of hope. Fans dotting the bleachers are witnessing the fine-tooling of a team that almost certainly will win a lot more games than it will lose this season. The statistics bear this out.

Just as surely, this season, Billy Beane will be called a genius again. He will be compared, as before, to Branch Rickey, legendary mastermind of the St. Louis Cardinals and the Brooklyn Dodgers. Some will predict his inevitable election into the Hall of Fame. Beane, it will be said, has changed baseball forever.

More accurately, Beane has discovered a way to succeed in a sport already changed. He has perfected a formula for competing and winning both on the field and in the books.

Over the past decade, professional baseball has devolved into an increasingly dysfunctional, sharply divided game of big-time haves and small-time have-nots. A few big-market teams like the New York Yankees and the Los Angeles Dodgers lever fat television contracts to acquire top talent at top salaries. Clubs in smaller cities, relegated to miserly budgets, scrap for what's left and hope – there's that word again – for the best. The big-market teams win and make money; the rest live hand-to-mouth.

Except for the Athletics. Bound to playing for a city of just 410,000 and to playing in the aging Network Associates Coliseum, the A's averaged just 26,787 fans per game in 2002. That put the A's at a dismal 18th in a league of 30 clubs. Oakland's player payroll this season will total \$49 million, roughly one-third of what the Yankees spend on big-name talent.

"We can't do the same things the Yankees do," Beane says. "Given the economics, we'll lose." And yet, over the past five years, the A's have amassed a win-loss record of 456 wins and 353 losses, the second-best record in the American League – trailing only, yes, those Yankees. What's more impressive is that in an industry notoriously oblivious to the profit imperative, the A's claim to have made money or broken even in five of the last six years. (Like most sports franchises, it doesn't release financial data.)

### **The Math Works**

Billy Beane is a guy who knows how to do more with less. Winning with the A's is not just a matter of sticking to a budget, although he must do that. Beane thrives by relentlessly exploiting market mismatches – by mining data that his rivals ignore and by scooping up assets that others have undervalued. His strategy is rooted not only in calculated opportunism, but also in a rock-hard "philosophy," as A's people like to call it, of how the game must be played today.

That philosophy is more than two decades in the making. It was born when a lawyer named Sandy Alderson took over the A's front office in 1982. Alderson never played baseball professionally, but he was a smart executive who grasped a few key truths. The first was this: In baseball, over the long run, statistics win out. And if you run your team by the numbers, you will win.

"The math works," Beane says. "Over the course of a season, there's some predictability to baseball. When you play 162 games, you eliminate a lot of random outcomes. There's so much data that you can predict individual players' performances and also the odds that certain strategies will pay off." The defining data for Alderson were on-base percentage – how often a batter reaches base safely – and total bases, which reflects that batter's ability to hit for power. The records clearly showed that, over time, those two statistics combined were the best predictor of the number of runs that a team would score.

This wasn't quite rocket science, nor was it truly original. "The teams that win are the ones that get on base and drive the ball real far," says Chris Kahrl, an editor of the annual stat-laden tome *Baseball Prospectus*. "That's the way baseball has always been." But by the early 1980s, general managers were overlooking on-base percentage in favor of a fascination with batting averages and home runs. Alderson's brilliance lay in

remaking his entire organization around a critical statistic that had fallen out of fashion. He sought out players who knew how to get on base: patient hitters who could push an at bat to 10 pitches, tire out the opposing pitcher, and come away with a walk or a base hit.

The reverse was mathematically true for pitching: Keep the opposing team's runners off of the bases, and it will score fewer runs. So the A's philosophy favors hurlers who throw strikes on the first pitch of each at bat rather than those who get behind the batter and have to throw more pitches. It favors fastballs over curves, because statistically, fastballs more often yield strikes. The object is to get batters out in three pitches or less – because batters who last longer get more hits and walks, and because high pitch counts exhaust pitchers.

The A's forged a baseball operation where all of this doctrine was taught and enforced with almost fervent consistency at all levels of the organization. Young players on the A's lowest-level minor-league teams get the same harangues on plate discipline and control pitching as do the players in the majors. (It is said that you can't win an A's Player of the Month award at any level unless you've averaged at least one walk per 10 at bats.) The team's college scouts apply the same metrics to the kids whom they recommend drafting.

This degree of organizational discipline, baseball people say, is one reason that the Athletics' formula has been hard for other teams to replicate. It's one thing to understand quantitatively what wins ball games; it's another to apply that understanding across an organization of dozens of coaches and instructors and hundreds of players. "In most organizations, you have a lot of renegades who want to do their own thing," explains Keith Lieppmann, who has worn an A's uniform for 30 years and is now director of player development. "We've gotten through that. If people don't believe in the philosophy, they don't stay."

### **Hit 'Em Where They Ain't**

The other reason why Beane's success isn't easily copied is less obvious. The metrics are surely important – and such statistics as on-base percentage remain at the heart of what the A's do on the field. But what defines Beane's success is the relationship between those performance metrics and players' corresponding economic value. Is the marketplace missing something? Is there a value gap? And what will happen to that gap over time, since performance and market value rarely obey the same rules?

The truth: Billy Beane is an arbitrageur. "Exactly!" Beane lights up at the word. "Arbitrage. We don't use that word too much in baseball, but that's what it is. In a market where people are competing for scarce assets – for us, it's players or, really, the things that players can do – there's always going to be some inefficiency. We're always going to have to find that dark corner, the stone that hasn't been turned over."

Beane operates within windows of opportunity. That's all he can afford. Because compensation trails performance in baseball (as in most endeavors), he must find players on the rise, guys who haven't caught fire yet but who could. He'll keep them until the market catches up, at which point he can no longer compete.

The classic of the type was Matt Stairs. At 28, the beefy career minor-league outfielder was widely thought to be washed up when Beane signed him in 1996 for \$130,000 a year. But Beane saw a disciplined, underused hitter – and sure enough, over the next four years, Stairs pounded the ball. In 2000, though, Stairs's numbers dipped and his pay had soared to more than \$3 million – which is why, by the next season, Beane traded him to the Chicago Cubs for a pitcher.

"Essentially," says baseball analyst Kahrl, "the A's are in the commodity-management business. Knowing whether someone is a rising or a sinking commodity – that's just a grown-up way of looking at things." Beane's method does, in fact, depend on his uncanny knack for creating options for the A's, on building an organization that is endlessly flexible.

Here's how it works in the world of Billy Beane: In an obscure deal in March 2001, Beane traded utility infielder Miguel Cairo for minor-league third baseman Eric Hinske. It would prove a stunningly good trade – but not because the A's needed a third baseman. (As good as Hinske would become, young Eric Chavez is one of the best.) A season later, when closer Jason Isringhausen departed as a free agent – and it was inevitable that he would, given the A's budget realities – Beane had a blossoming Hinske to offer Toronto for its closer, Billy Koch. The next year, when Koch became too expensive for the A's to keep, Beane dealt him to the White Sox in exchange for Keith Foulke, a cheaper option. Few even noticed that Beane also received a solid catcher, Mark Johnson, a credible alternative if the A's starter, Ramon Hernandez, fails to rebound from last year's slump.

Follow all that? That's where Beane lives, the arcane alternative universe in which he thrives. In that realm, every move has a purpose. Every acquisition has potential. And everything is about risk – specifically, about reducing risk.

### **Playing the Percentages**

"We try to create a situation where we're the casino," Beane says. "It's like how an actuary would set insurance rates. Predictability, predictability, predictability. What's the path to least risk? What's the greater chance of getting some return on this asset? We just stay disciplined on that – and over time, with an accumulation of those decisions, you end up with something successful."

Of course, Beane's explanation is somewhat disingenuous. A low-budget team has to take some risks that others won't. That's why Beane ultimately faces the big question, the one that every baseball executive, reporter, and stat freak keeps asking: Can Beane keep it going? Can he win every season? "Building for success and sustaining that success are two very different periods for any organization," observes Paul DePodesta, a smart young Harvard grad lured by Beane from the Toronto Blue Jays to be his assistant. "Of the two, sustaining is much harder."

Beane faces a perpetual uphill slog. In 2004, eight A's players will be guaranteed a total of \$39 million in salary, notes Mark Shapiro, Cleveland Indians general manager and Beane's former assistant. "They will have to get 17 more players for about \$11 million," Shapiro says. "They will have to make some tough choices." And in 2005, contracts with

the team's trio of star pitchers – Tim Hudson, Mark Mulder, and Barry Zito – will start to expire. Undoubtedly, Beane won't have the money to keep them.

"Never bet against a guy like Billy," Shapiro argues. "His creativity is endless." His strategy is sound too. Yet Beane knows that, inevitably, he will have to rebuild, just as Shapiro is doing now in Cleveland. "The key," Beane says, "is identifying the moment" – the time when continued success with incremental change has become impossible, when you have to cast off existing talent and start fresh. "The worst is when you try to do it halfway: when you think you can compete and you also think you're trying to rebuild. Then you're stuck in no-man's-land. You either do it or you don't."

Beane rises from his desk and saunters through the locker room: He wants to watch his pitchers throw before practice winds down for the day. He looks relaxed, but his demeanor will change once the season starts – this, too, is almost guaranteed by past performance. Beane is famously monomaniacal, ardent, and controlling. "It's his ego. It's the game," says Keith Lieppmann, indicating that, for 11 months out of the year, the two are indistinguishable.

From April to October, Beane will arrive at his Coliseum office most days by 9 AM, and he'll stay there until that night's game ends 14 hours later. (He does this even though he often can't bear to see the game, preferring instead to drive around in his car and catch the tape later. "You can't do anything about it when you're watching," he says. "Sometimes it's easier when you don't have to endure that drip torture.")

For Beane, much of the off-season – from the day following the World Series through January – is even more intense, consumed with drafts, trades, and contracts. This is when Beane's front-office team refreshes and refines its models. This is when he plumbs the inefficiencies and mismatches of baseball's marketplace – a painstaking, draining undertaking.

But today, Beane takes undiluted pleasure inspecting young pitchers throwing under Phoenix's February sun. Zito's fastball is popping. The system is working. The philosophy holds. Billy Beane is a genius. "Right now," he says, "is a good time." For the Oakland A's, there is hope, and there is certainty.

### **Sidebar: Beane Counting**

How do you build a great ball team on a shoestring? Look at the numbers. Here's data on the 10 winningest major-league baseball clubs from 1999 to 2002. OPS is their average rank (among the 30 pro teams) for the combined statistic of on-base percentage and slugging percentage – hitters' ability to get on base and hit for power. WHIP ranks the teams' pitchers on their ability to keep opposing runners off the bases. Teams that rank the highest in both categories – like the A's – tend to win the most games. The kicker: Oakland does it spending far less money – about half as much per win as the next-most-frugal team and less than one-third of the most spendthrift.

<b>TEAM</b>	<b>OPS</b>	<b>WHIP</b>	<b>WINS</b>	<b>PAYROLL</b>	<b>Dollars/WIN</b>
Braves	15	2	387	\$86	\$221,576

Yankees	5	6	383	\$105	\$273,499
Athletics	7	7	382	\$33	\$85,079
Red Sox	11	3	354	\$93	\$261,299
Mariners	6	8	378	\$65	\$170,635
Diamondbacks	12	1	374	\$84	\$224,599
Giants	4	11	368	\$60	\$163,043
Cardinals	13	9	360	\$66	\$182,639
Indians	3	25	351	\$81	\$230,057
Mets	18	4	348	\$85	\$244,253

OPS: on-base percentage plus slugging percentage. WHIP: walks and hits per innings pitched.

Wins: total team wins, 1999 - 2002. Payroll (in millions): average total team salaries, 1999 - 2002.

Source: Major League Baseball; USA Today

### **Sidebar: The Beane-Ball Handbook**

Over the past five years, general manager Billy Beane has made the Oakland Athletics one of pro baseball's most consistent winners – and he has done so on one of the sport's most meager budgets. Here's how Beane turns a double play, making one into more.

**The real highlights don't happen on the field.** "It used to be, general managers just evaluated players on their ability. Today, the economics drive every decision. You have to evaluate talent not just on playing ability, but also on economic feasibility – and not just a player's current feasibility, but also his future trend. Every single decision, down to drafting a kid out of high school, has economic ramifications."

**It may be a team sport – but there's only one boss.** "We have a pretty tight inner circle. First and foremost, it's my responsibility what happens here. I give my directors a lot of autonomy, because they're good at what they do. But that's a small group, and ultimately, in critical decisions, I want to be involved. We don't have a lot of bureaucracy here. We don't get together for huge organizational meetings. We don't have a lot of patience for four-hour meetings and a hundred opinions. That's my worst nightmare."

**Hit 'em where the big guys ain't.** "We can do some things that the Yankees can't. We can trade for a guy like Corey Lidle and make him our fifth starter, even though he was a middle reliever who hadn't done much. I kid with [Yankees general manager] Brian Cashman all the time: He can't do that, because New York demands higher-profile players. When Jason Giambi left us [in 2002, for the Yankees], we could sign Scott Hatteberg, a backup catcher, and put him at first and get away with it. We're allowed to take what are perceived as risks."

**Sweat the details – but remember that it's a long season.** "This is an intense job, because you're being judged every day. It's not like being a CEO, where you just have to give a conference call once a quarter. Every day, we play a game, and it's in the paper."

All the data is on the Internet. Everything is public. And I'm guilty of it too. This sport is an emotional business, and I have to be careful not to make sound-bite decisions."

**Even an MVP can't do it all.** "Getting to the play-offs isn't random: Over 162 games, if you have the right team, the odds work out. But once you get to the postseason, everything becomes random. In a 5-game series, you can flip a coin five times, and you might come up tails five times. In our market and many others, we can't build a team that's specifically geared for 162 games and also for a 5-game play-off. That I don't think we'll ever overcome."

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