

# Baseball diamonds: the lefthander's best friend

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Baseball diamonds are a left-hander's best friend. That's because the game was designed to make a lefty the "Natural," according to David A. Peters, Ph.D., the McDonnell Douglas Professor of Engineering at Washington University in St. Louis, and uber baseball fan. Peters is a mechanical engineer who specializes in aircraft and helicopter engineering and has a different approach to viewing America's Favorite Pastime.

First of all, some numbers.

"Ninety percent of the human population is right-handed, but in baseball 25 percent of the players, both pitchers, and hitters, are left-handed," said Peters, a devoted St. Louis Cardinal fan who was at Stan the Man's last ball game at Sportsman's Park in 1963.

"There is a premium on lefthanders for a number of reasons. For starters, take seeing the ball.

"A right-handed batter facing a right-handed pitcher actually has to pick up the ball visually as it comes from behind his (the batter's) left shoulder. The left-handed batter facing the right-handed pitcher has the ball coming to him, so he has a much clearer view of pitches."

Then, Peters says, consider the batter's box. After a right-hander connects with a ball, his momentum spins him toward the third-base side and he must regroup to take even his first step toward first base. In

contrast, the left-hander's momentum carries him directly toward first.

"The left-handed batter has a five-foot advantage over the right-handed batter," says Peters. "And that means the lefty travels the 90 feet to first roughly one-sixth of a second faster than the righty. That translates to more base hits for the left-hander, whether singles or extra base hits because lefties are getting to the bases more quickly."

Even Jim Thome and Jason Giambi?

The left-handed pitcher generally is much more difficult to steal off, as, from his stretch, he peers directly at the runner; the right-hander must look over his shoulder and wheel to first base, giving the runner more of a warning of the pitcher's intent.

Positions advantageous to southpaws are pitching, first base and right field. For the positions, the advantage is the favorable angles lefties get, enabling them to throw the ball more quickly across the diamond to second, third and home. One position a lefty rarely plays is catcher, for the obvious reason that it is difficult for a southpaw catcher to throw over so many right-hand batters.

"It wasn't all that long ago when first basemen were predominantly left-handed and most right fielders were left-handed," Peters says. "That has changed at least since the late sixties."

There's even a bias toward the lefthander in ballpark design. Right field in most parks (just think of Yankee Stadium and Fenway Park) is usually shorter than left field because of the preponderance of right-handed hitters.

While traditional thinking holds that the right-handed batter has the advantage over the left-handed pitcher, because the breaking ball goes

into the batter's power threshold, it's not always the case, says Peters. And it's that familiarity thing again.

"Because only 10 percent of the population is left-handed, kids grow up and mature in baseball seeing a left-hander just 10 percent of the time they bat," he says. "So, it can be hard for both lefties and righties to face a southpaw. It's why some left-handed batters look dreadful matched against a lefty."

Some batters don't like facing southpaws because their ball is purported to have a natural movement away from a right-hander and into a lefty.

"There's no scientific evidence to support this, but I wonder if lefties get that movement from learning to write in a right-hander's world," Peters says.

Source: Washington University in St. Louis

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