

Perfecting an umpire's call

By Mel Antonen
USA TODAY

MARYVALE, Ariz. — Doug Eddings is a baby-faced, third-year major league umpire who does aerobics, studies videos and quizzes the guys who have been around awhile, all with the idea of improving his fundamentals.

So as Major League Baseball reconfigures the strike zone this season — making it higher, narrower and more consistent — Eddings welcomes a new high-tech learning tool.

It's called the Umpire Information System and is based on technology first used by the military to track ballistic missiles and do aerial mapping.

The system produces a CD-ROM that an umpire can view on his laptop after a game. The general public and teams won't see the results.

Eddings will be the first umpire to test the system when it's set up Friday in Scottsdale for the Seattle Mariners-San Francisco Giants exhibition game. Eddings will be behind home plate, and he's fine with being a pioneer.

"It's going to be outstanding," he said. "It's like a batter studying video of his swing."

The first regular-season game to use the Umpire Information System will be in New York, at Shea or Yankee stadium. By mid-May, six ballparks will have the system.

The system uses two two-camera setups:

► Two cameras are low, near or on the field, probably just beyond each dugout. They take pictures of the batter and map his strike zone.

Men in blue get high-tech tool that tracks location of pitches

► Two other cameras are higher up, mounted in the stands or even atop light poles, to track the pitched ball.

Finding the 'exact location'

The information is interpreted by a computer program to produce a three-dimensional view that shows the ball's speed, trajectory and its relationship to home plate.

The system can come within a half-inch of determining if a pitched ball is in or out of the strike zone, says Ed Plumacher, founder of QuesTec, a company based in Deer Park, N.Y., that developed the technology. Fox Sports uses a version for its TV viewers, but the system developed for the umpires is enhanced to be more accurate.

Umpires "will know the exact location of the ball as it pierces the strike zone or the area around home plate," Plumacher says. "It's a learning tool. We are providing objective feedback to the umpires, something they have never had. We are not making policy. We are recording information."

Is this the first step in introducing electronic umpiring, something like the NFL's instant-replay system, to baseball? Major League Baseball officials say no. MLB also says the information will not be used to show an umpire's mistakes or be given to television stations to help in coverage of a game.

"It's strictly confidential," Plumacher says.

The confidentiality reassures umpires, who say the technology is not a threat to them.

"If it is used in a positive way, it's a great idea," says umpire Dale Scott, whose 15-year big-league career includes an All-Star Game, six postseason appearances and the 1998 World Series. "If they give it to a local TV station that says an umpire can't call a pitch because of this, this and this, that's negative."

Umpires always have been skeptical of TV replays that show the strike zone, saying the cameras in a stadium are never in proper position for that. QuesTec's research backs umpires on that issue and says TV cameras, whether they are in center field or overhead, can be as much as 20 degrees off-center, Plumacher says.

"Those cameras distort and don't give true perspective," he says. "Our cameras give a true three-dimensional perspective as opposed to (TV's) two-dimensional angle. It's all physics."

Technology doesn't excite all

Umpires joke that they are in a profession that requires them to do their job perfectly on their first day and then make improvements each year. But making the proper call, especially calling balls and strikes, is a practice in dis-

ciplined fundamentals.

Umpires say that they, just like pitchers and batters, can go into slumps.

For example, an umpire can have trouble seeing a left-handed pitcher's curveball break across the outside part of the plate. If something like that happens, the tracking tool might help an umpire quickly discover a flaw in his fundamentals, Scott says.

"You have a checklist of things, and you go back to the basics," Scott says. "You try to figure out why you lose sight of the ball. Was my head too low? Were my feet in the right position? Was I standing too far back?"

"It's like when you start driving, your hands are always at the 10-2 position. But when you get experience, you put one hand on the wheel."

Not all major league umpires are excited about the technology. Derryl Cousins, in his 23rd season, says he has no objections to the system, but he doesn't see what good it will bring. For him, it is the difference between being "smart and street-smart."

For example, Cousins said, some pitchers will throw a curveball that catches the tip of the strike zone above the knees just as it crosses the front edge of home plate and then breaks so much that it bounces in the dirt in front of the catcher.

The technology might call it a strike, Cousins says, but common sense should prevail. The pitcher, the catcher and the batter all know that the pitch wasn't a strike.

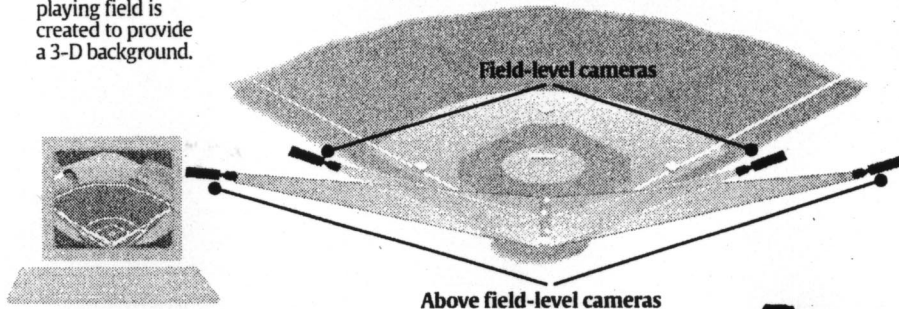
"And I don't want to be the guy that starts calling it a strike either," Cousins says.

In focus: Major League Baseball

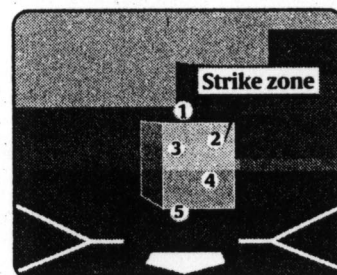
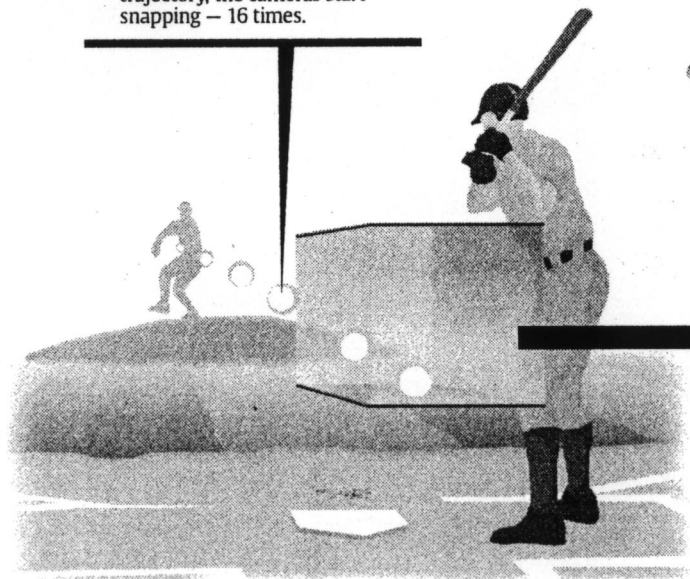
Keeping tabs on the strike zone

On Friday, a computer will chart the accuracy of the calls by the home-plate umpire at the Seattle-San Francisco spring game in Scottsdale, Ariz. The demonstration is the first in a series of tests on a pitch-tracking technology. The Umpire Information System produces a 3-D presentation showing every pitch's relationship to the strike zone and saved on a CD-ROM for the umpire to view after the game. Six major league ballparks will have it by mid-May.

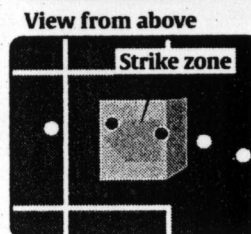
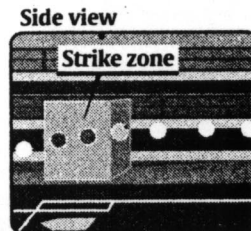
- 1 A 360-degree photo of the field is scanned into the computer and a playing field is created to provide a 3-D background.
- 2 Two cameras low and close to the field determine each batter's strike zone. Two other remote-controlled cameras, mounted in the stands off the first- and third-base lines, track each pitch.



- 3 A pitch takes half a second to reach the plate. Midway through its trajectory, the cameras start snapping — 16 times.



- 6 Pitch action can be rotated so that the umpire can see the ball head on, from above or to the side. He can also choose to see pitches individually or clustered per at-bat.



- 5 The information is compiled onto a CD-ROM. The umpire can feed the disk into his laptop provided by Major League Baseball. At the end of the season, the umpires will get readouts of what pitches they had the most trouble calling.

- 4 The multiple tracking points are fed into the computer program and converted into a graphical rendering. Elapsed time: 0.5 seconds.

A computer operator who is monitoring the cameras also notes the umpire's call for each pitch.

