

# Golf Digest® GolfWorld®

COVER STORY: WHY YOU CAN'T PUTT

## The New Way To Read Greens

The day I learned to find the Zero Line

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Toward the end of a recent buddies trip, during which nine of us played 15 rounds on 11 courses in eight days, my friend Tim made an observation that struck me. He said he'd always thought of himself as a pretty good putt reader, but that the unfamiliar greens we'd encountered on our trip had caused him so much trouble that he'd changed his mind. He said he now attributed his previous success to the likelihood that, over the years, he had memorized the breaks on our home course -- and I would bet that the same is true for me and a lot of you. Much of the time, on greens we know well, we aim mainly by rote.

That's probably true even for players who follow complicated-looking putt-reading systems -- like the former member of my club who determined her line by holding her putter vertically at arm's length, like a drum majorette's baton, and then tilting both it and her head from side to side. What she did looked sort of like plumb-bobbing, except that it wasn't plumb, and it didn't bob. (For that matter, what is genuine plumb-bobbing supposed to accomplish? I know golfers who swear by it, but I also know people who believe in water witching.) When it comes to putting, I'm not even a pseudo-scientist. I sort of look at a putt sideways for a while, and cup my hands over the bill of my cap, the way guys do on TV, and then, once I've arrived at something like a conclusion, I aim some distance to the right or left, or something.

Not long ago, this magazine sent me down to Florida to try to acquire a real technique, by visiting two of the game's hottest putting theorists: Mark Sweeney and Brian Mogg. Sweeney is the creator of a green-reading system called AimPoint. If you've watched tournament telecasts on the Golf Channel during the past few years, you've seen one of his innovations: the superimposed digital lines that predict how putts are going to break and where players need to aim to make them. He's just an 8-handicapper, but his putting results are so impressive that tour players -- among them Padraig Harrington and Bo Van Pelt -- have adopted his ideas. Mogg runs a golf school and has competed on a number of pro tours, including the big one. His star student is Y. E. Yang, who won the PGA Championship last year, largely by out-putting Tiger Woods, who played with him and began the final round with a two-stroke lead.

One of the first things Sweeney and Mogg asked me to do (in our improvised classroom, on the practice green at the Golden Bear Club in Windermere, Fla.) was to read a 15-foot putt. I studied it, and, after some internal hemming and hawing, concluded that it was going to break a couple of cups to the left. "OK," Sweeney said, "how did you decide that?" Well, hmmm. "It just kind of looks like maybe that's sort of how much, I guess," I said, finally.

"Don't worry about it," Sweeney said. "Nobody knows how to answer that question. And I mean nobody."

Half a dozen years ago, Sweeney was watching the British Open on TV, and he noticed that players kept missing a particular putt in the same direction. He wondered why. Johnny Miller and others often attribute unexpected putt-ing outcomes to semi-supernatural forces: the coercive influence of nearby mountains, bodies of water, hovering spacecraft, grain. But Sweeney is a rationalist -- he has an M.B.A. from the Wharton School and works with computers -- and he knows that (in our part of the universe, anyway) moving bodies obey knowable physical laws.

"It's not my opinion," Sweeney explains. "Like it or not, the ball does what the ball does, and it's reproducible." To demonstrate, he held a golf ball at arm's length and dropped it, then picked it up and dropped it again. In both instances, I observed, the ball quickly fell straight to the ground. "Gravity and friction are determining what this ball does," he said. Introducing closely mown turf to the problem adds complexity but doesn't change the physics. The path of a rolling ball is dictated by gravity (that is, slope) and friction (the slickness of the green, along with the speed and direction of the wind), plus the force of the stroke. To create the putting lines you see on the tournament telecasts, an AimPoint crew maps green contours with lasers, measures a bunch of other variables, and loads everything into a computer program.

A non-android can learn to do the same thing by taking a 2 1/2-hour AimPoint workshop ([see aimpointgolf.com](http://aimpointgolf.com)) and mastering a handful of principles, most of which have to do with topography. The first step in Sweeney's system is to identify what he calls the Zero Line, a (usually curving) series of connected points from which putts should be aimed straight at the hole. Suppose you're facing a generally uphill 15-footer and are uncertain not only about how much it's going to break but also about which way. Using visual clues about the shape of the green, plus consulting the soles of your feet -- which, Sweeney and Mogg say, are more sensitive than your eyes -- you walk along an arc 15 feet from the hole until you've found "the point where downhill stops and uphill starts." That's the Zero Line. If your ball is to the right of the line, your uphill putt will break to the left; if it's to the left, your putt will break right -- just as the law of gravitation says it must. "It's as simple as it sounds," Sweeney says, "and once you've understood it, you'll virtually never be wrong about the direction of a putt inside 15 or 20 feet."

Determining the exact amount of break is more involved. Sweeney has reduced everything to a pocket-size flip chart, which is sort of a pre-industrial version of the computer program he uses for the Golf Channel telecasts. The chart represents greens as clock faces, with the hole in the center. The straight-uphill 20-footer begins at 6 o'clock, and the straight-downhill 20-footer begins at 12 o'clock. On a green that measures 9 on a Stimpmeter and has an overall slope of 2 percent, which is about average, the chart says that a 15-foot downhiller from the 2 or 10 o'clock position in relation to the Zero Line should be aimed toward a point 14 inches outside the edge of the hole. Ta-dah!

I sank the first two 15-footers I tried after reading the green Sweeney's way (with help from him). But that raised another issue. As would be true of most golfers -- including some tour players -- the stroke I used to make those putts was a rickety heap of compensations and off-setting misalignments. Mogg neutralized several of the more egregious ones by having me pull my right elbow closer to my body, move my hands under my shoulders, and turn my chin down, to get my eyes over the ball. He also determined that my putt-er (which was center-shafted) was all wrong for my stroke and that the shaft (which I had shortened) was too short. I switched to his putter and followed his instructions and immediately felt a huge difference in the solidity of my contact with the ball. Best of all, as soon as I got home, I went to the golf shop and bought a nice expensive new putter -- something I'd been

looking for an excuse to do.

I'm not sure I'll ever take the time to master Sweeney's system. In fact, I'm sure I won't. (I haven't even organized my basement yet.) But I've already found his core ideas to be extremely helpful, especially in determining the overall direction of a break. (It's gravity, stupid!) There's a caddie at Pine Valley who walks the course during heavy rains and identifies subtle breaks by watching the way water flows over the putting surfaces. Sweeney heartily approves. In fact, a good way to get a sense for the shape of a green, he said, is to look for patches of muddy, smothered grass -- low points where water has pooled. That's important information, even if the putt you're facing is a sliding three-footer 20 yards away from that low point. "It's all about reading greens, not reading putts," Sweeney said. Why didn't I think of that?

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