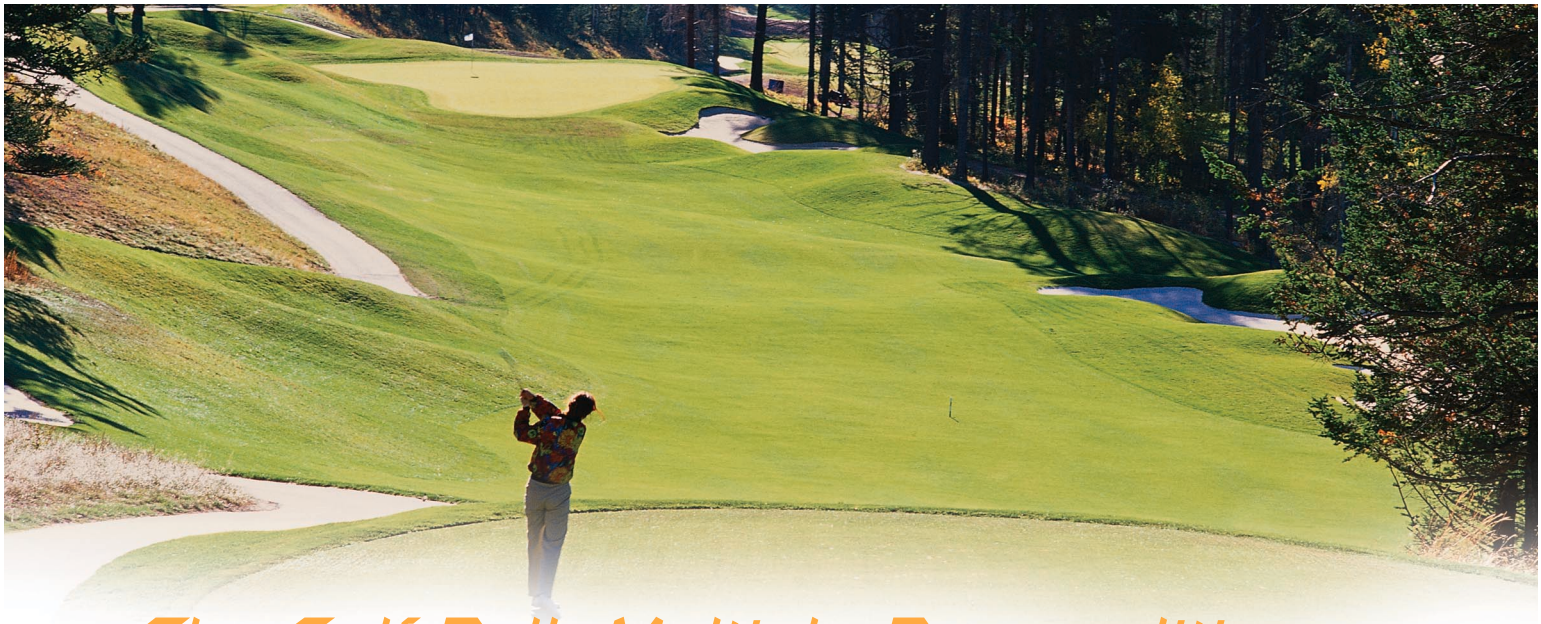


The Golf Ball: Multiple Personalities

There's no more fitting symbol for the game of golf than a circle. Golfers complete their "round" on the 18th green just steps away from where they began it on the first tee. The ideal golf swing inscribes a circle through the air, and the hole and the golf ball are, of course, perfectly round. Far from a flat two-dimensional sphere, however, today's golf balls are full-bodied treasure chests of multiple technologies and performance tricks. Some, like Jack Nicklaus, feel the golf ball is *too* good now. They contend it flies too far and straight and is both making classic golf courses obsolete (for instance, because they have become too easy to play) and mid-level golf pros able to compete with the more talented players. Others feel that average golfers playing for fun deserve every advantage, aid, and inch afforded to them without violating the rules of the game.

Billy Mayfair, PGA Tour player, on today's golf ball

Everyone is talking about testing the new driver heads for illegal COR, etc., but I think the golf ball is making more of a difference in the game than anything else is. The golf ball has changed the game more than the driver has. I play the Titleist ProV1x ball, and it doesn't curve as much anymore like they used to. You just swing as hard as you want at it and it goes straight at the flag. Working the ball is still important on certain shots, but it's not as much of a must thing anymore. One of the guys I remember who used to work the ball the best in the world was the late Payne Stewart. He brought the ball in high, low, left-to-right, right-to-left, every which way possible. That was what made him such a great player. These days I don't think working the ball would help him as much, because you don't need to shape the ball like you used to because the ball just flies so straight. I think 95% of the guys on Tour would say that the changes in the golf ball today have made a bigger difference in the game than anything else has.

Just like golf clubs, golf balls must fit the golfer, and as with clubs, a player's task is to match the ball that best complements his or her specific swing and style of play. Golf balls, although not inexpensive, are affordable enough to allow a degree of experimentation. As they do with clubs, players should try different brands and types of balls before settling on one. Finally, golfers must match their golf ball not only to their swings, but also to their golf clubs. While doing so requires a bit of study and effort, the dividends it pays in better scores and shots can transform a round of golf from "a good walk spoiled" (to quote Mark Twain) into a day in paradise. In other words, it's a whole new ball game when it comes to the golf ball today.

Almost 10 years ago, the PGA Tour tentatively discussed a rule change that would have required all the pros to play the exact same brand and style of ball. The sentiment among players was that this would be fine as long as the new standard was the brand and style that they already played. Back then that meant a soft balata-covered wound ball (with rubber bands), such as Titleist's Tour Balata, or Maxfli's HT. The game's best golfers at that time categorically ignored the hard-feeling, two-piece/solid-core "distance" balls, such as Top-Flites and Pinnacles, favored by many average golfers. Although offering unmatched distance off the tee, these balls spun very little around the greens. The pros may "drive for show," but they chip and putt for dough. The image of one playing with a ball difficult to control in the scoring zone is as incongruous, if not hilarious, as a tennis player taking the court in snow boots.

The Top-Flite Strata golf ball, introduced in the mid-1990's, however, did the unimaginable. It merged a high-spinning, soft-feeling Tour Balata type of ball, with the low-spinning, long-flying, and durable Pinnacle or distance ball into a whole new class of product. This remarkable *three-piece ball*, was, indeed, two balls in one: It was a long-flying/low-spinning distance ball off the tee, and a high-spinning control ball off the irons. Remarkably enough, Strata's ball design team accomplished this two–for-one feat rather simply. They just added a soft polyurethane cover on what was virtually a Top-Flite distance ball, and then added a thin middle or mantle layer that encased the ball's already large and solid rubber core.

The Top-Flite Strata golf ball

A few years later, balls such as Callaway's Rule 35, Titleist's ProVI, Maxfli's M3 Tour, Nike's TA2 (both the Long and Spin models), and others, including new balls from Strata, improved on Strata's original breakthrough, by improving the durability of their urethane outer covers and making them thinner and firmer for added distance. At the same time, advances in rubber systems allowed ball makers to design cores that were more energetic or "faster," for even more distance on shots hit with the longer clubs, while maintaining a nice soft feel. Here's the short course on how these long-flying/soft-feeling balls work and why they represent a sea change in the history of golf ball design.

Titleist's ProVI golf ball

A golfer swings the driver, fairway woods, and long irons, on a relatively level path into the ball—so the clubhead penetrates through the three-piece ball's soft outer cover layer and compresses its firmer mantle layer and solid energy-packed core. On such swings, the clubhead "sidesteps" or mitigates the ball's high-spin-producing cover, which results in the kind of high launch/low-spinning drives that optimize distance (as discussed in the next section).

Furthermore, the reduced spin on the ball also means it will hook and slice much less than its Balata forebears, so the golfer gains not only distance but also accuracy.

On short and mid-iron shots, a golfer strikes down on the ball with a more descending blow. This action pinches the three-piece ball's thin and soft outer cover for shots that spin a great deal. The clubhead's force is also strong enough to reach or engage the ball's mantle level, which contributes height and distance to the iron shots. The blow with an iron, however, does not reach the ball's core or center layer, because the club contacts the ball obliquely at an angle, rather than squarely with all of its energy and mass as does a driver. If it had, the core layer's energy and speed would reduce the spin of the ball and it would be next to impossible for even skilled golfers to control the distance of their shots. Chips and putts almost exclusively use this soft cover for the kind of spin control and feel golfers need for scoring shots on and around the greens.

If the progression from a two- to three-piece ball yielded such performance benefits, why wouldn't companies progress to a four-piece ball? Of course, this is exactly what they did, with balls such as the Ben Hogan Apex Tour, Titleist's ProV1x, the Nike One, and the Strata Tour Ace. All but Titleist's ball feature a second firm mantle layer that acts like a conduit during impact that transfers extra energy into the core for even more low-spin-derived distance. The ProV1x achieves extra firmness by adding a second core. These balls perform best, however, for golfers with exceptionally high clubhead speed (in excess of 100 mph with the driver), because it takes considerable force to penetrate the additional material added to the balls.

Nike's One golf ball

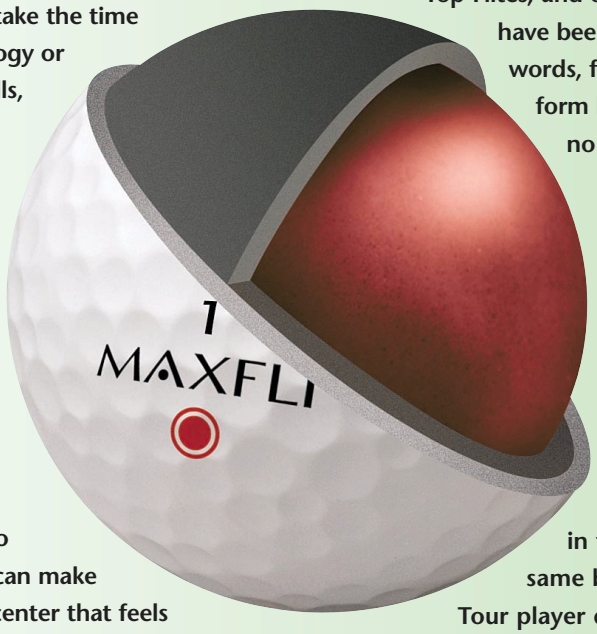
At the same time, ball makers were applying this new fast/soft/low-spinning core and high-spinning/soft-cover technology in much improved (and considerably less-expensive) two-piece balls. Products such as Titleist's Next, Maxfli's A3, and others offered comparable distance as their three-piece compatriots, but marginally less spin off the irons and around the greens. This made them less appealing to most Tour players and low-handicappers, although extremely popular with budget-minded mid- and high-handicap players.

Companies then softened the covers and cores of these two-piece balls and birthed yet another class of two-piece balls aimed at a different demographic. Balls such as the Precept Lady Diamond, Maxfli's Noodle Spin, and Nike's Power Distance Super Soft have given golfers with very slow swing speeds (some women, seniors, and juniors) more distance than ever. All of these two-, three- and four-piece balls are virtually indestructible. You can't cut them. You can't scrape them, you can't blemish them in any way. All you can do is lose them.

Although the superior multilayer balls have driven the pro and better amateur batty with delight (if not delusions of grandeur), they seem to have also intimidated average golfers, who feel they lack the skill needed to play with them. This is a tragic misconception according to Maxfli's senior director of research and development, Dean Snell, who, while working for Titleist, was instrumental in the original ProVI's creation. In fact, Snell believes the average player benefits as much if not *more* from today's multilayer ball than a pro. Here's why.

Dean Snell, Maxfli's Senior Director of Research and Development, on common misconceptions about today's multilayer golf balls

There's a big push in the golf equipment industry right now to develop new technologies. So custom fitting has become more important, and everywhere you go you see fitting carts and fitting centers. If a person is going to spend a thousand or two thousand dollars on clubs, they want to know about what they are playing, and they want to play clubs that fit them. A dozen golf balls costs 40 or 50 bucks, so people don't take the time to understand the technology or the difference between balls, and, consequently, don't usually play with the ball that fits them best.



People today still think that if it's cold outside, they have to play a 90-compression ball, and if it's hot a 100, and that's a total myth. Compression or the relative hardness or softness of the old wound balata-covered golf balls no longer matters. Today we can make a ball with a large rubber center that feels soft like the low-compression balls of years past, but flies far with a lot of initial ball speed like the old high-compression balls.

But the real misconception average golfers have is that they feel they are not good enough golfers to play the new multilayer balls. They think that if Freddy Couples plays a Maxfli M3 Tour, for example, then they must not be good enough to play it, or that such a ball has too much technology that won't help them anyway. What the recreational player needs to know is that this technology is actually better for them than for the Tour player. It helps the Tour player, sure, but it helps them more. Here's why.

First, these balls have such a low driver spin rate that they don't hook or slice very much at all, making it easier to hit the ball straighter with the driver. In fact, today's multilayer better balls have essentially the same spin rate off the driver as do the Pinnacles, Top-Flites, and other distance balls that they have been playing anyway. In other words, from the tee, these balls perform like distance balls, so there is no need to fear them.

Finally, when a Tour player shoots 70 in a round, he or she hits the driver 14 times, which we've fixed or made better because the ball goes farther and straighter for these 14 shots.

Recreational players, who shoot 100, also hit 14 drives in the round, so they gain the same benefit off the tee as the Tour player does from the multilayer ball, with respect to this lower spin rate. Instead of playing 56 additional shots to the green and including putts (to make up their round of 70) as do the Tour players, they play 86 shots, which will fly higher, stop quicker on the greens, and offer more short game control and feel softer with the putter. That's 86 out of 100 shots that this type of ball improves for the average player, whereas for the Tour player it improves 14 out of 70 shots. So the percentage of improvement is actually higher for the recreational golfer than for the pro, which, again, means there is no need for average players to fear multilayer technology.

The Club/Ball Fitting Matrix: We've Made Contact!

The collision between the golf ball and the golf club, otherwise known as "impact," takes place in a fraction of a second. During that interval, the golf club transfers all of its kinetic energy into the ball, while its alignment at impact acts as "data" that programs the shot the golfer hits then watches with either self-admiring awe or disgust. The previous clubfitting section discussed the importance of fitting a player's golf clubs to his or her strength and swing style. To complete the clubfitting mission, and to optimize their performance on the course, however, golfers must also match their clubs to their golf ball.

Golfers have traditionally picked their golf ball by blasting drivers off the tee and picking the ball they hit the farthest. They generally paid little or no attention to the interaction between driver and ball or how that ball would perform with their irons, wedges, and putters. Today's new thinking about equipment fitting involves finding the best ball/club combination and posits that golfers should begin the fitting process for the golf ball *from the green back, not from the tee forward*. After they find the ball that performs best for them on and around the greens, they can then fit themselves for a driver that maximizes distance and accuracy with that ball as well. The following sidebar shows you how to do it.

Finding the Optimum Club/Ball Combination

Step 1 Go to the fringe around the green with a few (or several) new golf balls that you want to test. Hit some chip and pitch shots from different lengths and observe the results. The multilayer balls, such as Callaway's HX and Maxfli's M3, will come off the clubface at a relatively low angle. They will hit the green with considerable backspin and "check" noticeably before releasing and rolling toward the cup. Then try a two-piece ball, such as Titleist's Next, and notice how the chips and pitches fly a bit higher, check less when hitting the green, and roll a little more toward the club. (The super-soft low-compression balls, such as the Precept Lady Diamond, will roll the farthest, with the least spin when hitting the green.) Hit some putts and sand shots with these balls as well and observe their performance. Remember not every manufacturer's models of the same type of ball will react exactly alike.

Step 2 Take your same covey of balls and move out in the fairway to the 100-yard marker. Test each product from that point, and observe the trajectory, and the checking and releasing characteristics of each ball after it hits the green. Again, the multilayered balls will feel softer, fly a bit low, and stop or check more on the green than their two-piece counterparts.

Step 3 Now hit your test from the 150-yard marker and use the same criteria to evaluate each ball. The multilayer balls will spin the most and fly the lowest of the three, while biting more and rolling less on the greens. The two-piece balls will fly a bit higher and farther but spin and bite less on landing. Base your choice of ball on the combination of performance qualities that mean the most to you. A golfer who wants a soft feel, but also needs a little more distance, may decide to sacrifice the feel of the multilayer ball and choose a two-piece product.

Golfers who base their iron play on shots that hit and bite close to where they land would pick a multilayered ball, even if they have to sacrifice a little trajectory and distance. When you find the ball you like best, you're ready to find the right driver for it in the following way.

If you are lucky to find a launch monitor, look for the following launch conditions when testing a driver. Be sure to test with the same type of ball with which you plan on playing.

- A spin rate of between 2,500 and 3,000 rpms
- A launch angle of between 11 and 13 degrees

If your drives do not deliver these numbers, you can choose from a couple of remedies available. First, try a driver with a different loft: More loft will increase the launch angle and spin rate, and less loft will lower them toward this ideal range. You also can try a driver whose shaft has a stiffer tip end, which will lower the launch angle and spin rate, or one with a softer-tipped shaft, which will increase the launch angle and spin rate.

If you can't find a launch monitor, you can still fit a driver to your preferred ball by just your eyes. Look for drives that reach their apex or highest point very quickly and then level out and carry far down range. What you do not want to see are drives that start low and then shoot up like a jet plane taking off. Such shots indicate that the driver has added too much spin to the ball, which will result in shorter drives that will hook or slice more as well. Don't worry that your new high-flying drives will lose distance into a headwind. The wind doesn't blow any harder at 75 feet in the air than it does at 20 feet, and a low-spinning drive produces less friction against the wind than a high-spinning ball.

Jim Colbert, Champions Tour player, on the impact of technology on the Champions Tour

Jim Colbert

I don't think technology has had an impact on the Champions Tour as far as who wins at Tournaments is concerned, because everybody's got it. They're going to pass the money out at the end of the Tournament whether we shoot 20 under or 20 over. Having said that, the biggest difference I see in technology today is the ball.

Certainly it goes farther…My drives today are a little longer than when I was on regular Tour…but mainly it's the ball that doesn't curve as much as the older balls. Subconsciously, though, the curve of my shots is still in there, because at times I find it difficult to aim dead straight. I've gotten so accustomed to seeing the ball move left-to-right or right-to-left, depending on the shot I want to hit. And the balls today *really* don't curve when you hit them solid.

I don't think it's a good idea to have two separate golf balls, or two equipment standards, one for the Tour pros and another for the amateurs. Commercially, that would be a big mistake and would take a lot of money out of our industry. Not only would the pros lose their endorsement contracts with the equipment makers, but also the average player would lose the benefit of our testing the products they eventually buy and play with. The Tour really is the test ground or laboratory where the manufacturers develop their new clubs and golf balls. Now if they want to slow down the ball a little bit so it doesn't go quite so far, I suppose that would be okay as long as everyone plays with the same slowed-down ball, pros and amateurs. But you have to remember that Tour pros are a very, very small percentage of the golfing population, so people are making a big deal over a small group. Anyway, I like to see our customers, meaning amateur players, get every advantage technology can give them.