

core wound with runner thread and covered with plastic or balata.

These different materials dramatically affect how far and how fast the ball flies. A ball gets more speed if it decompresses faster after being hit by a club, which can also affect how straight it travels. Yet, manufacturers cannot just create balls that fly as far and as fast as possible, because the U.S. Golf Association has specified for more than 50 years that a golf ball propelled under certain specified conditions should travel about 250 yards at a speed of no more than 250 feet per second. If they want to sell their balls, manufacturers have to make sure they meet regulations. It would be fairly easy to create a ball that could be hit, say 400 yards, but that would destabilize the game so much that it could never be allowed.

Within the regulations, however, there has been lots of room for innovations. Three-piece balls, for example, have given manufacturers opportunity to experiment with dozens of different core materials. Golf ball centers have been made of steel, glass, rubber, silicone, dry ice, tapioca, and iodine, to name just a few. Whatever the material, it is usually frozen so that it maintains a perfectly spherical shape while about 30 yards of rubber is wound tightly around it, exerting a pressure of 2500 pounds per square inch. Titanium, which is very popular with golf club heads, has even found its way into golf ball centers. Titanium powder supposedly acts as a kind of glue to hold the

other core components in place, which in turn, is supposed to transfer more energy from the ball to the club face at impact due to less compression (the goal of all core materials).

Another innovation is the four-piece golf ball, with a solid core, rubber windings, a soft inner cover, and a soft outer cover. These balls are supposed to react differently depending on how fast your swing speed is. Hit it easy, and only the outer cover is affected, so the shot feels soft; hit it hard, and both covers come into play, providing distance.

One of the most notable features of a golf ball is the dimples. Simply put, dimples make the golf balls fly farther. As a smooth ball flies through the atmosphere, it leaves a partial vacuum in its wake. This pulls at the ball, reducing its speed so that it drops to the ground much sooner than it would if it were hit in a vacuum. The dimples capture air, so that the ball is wrapped in its own atmosphere. Instead of leaving a partial vacuum behind it, it just leaves a stream of more air, which reduces drag and lets the ball fly farther.

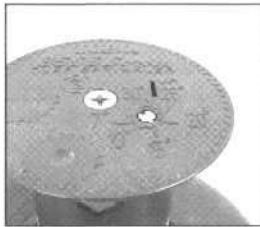
The ideal diameter for dimples, if the goal is flight-worthiness, is about 0.15 inch. Disperse those evenly over the surface of a golf ball and it gives you about 336 of them. That was the standard for decades, but recently, manufacturers have realized that the size of the dimples can be varied by a 1/100th or 2/100th of an inch, which gives the ball more dimples. As a result, some golf balls have 400 or even 500 dimples, and

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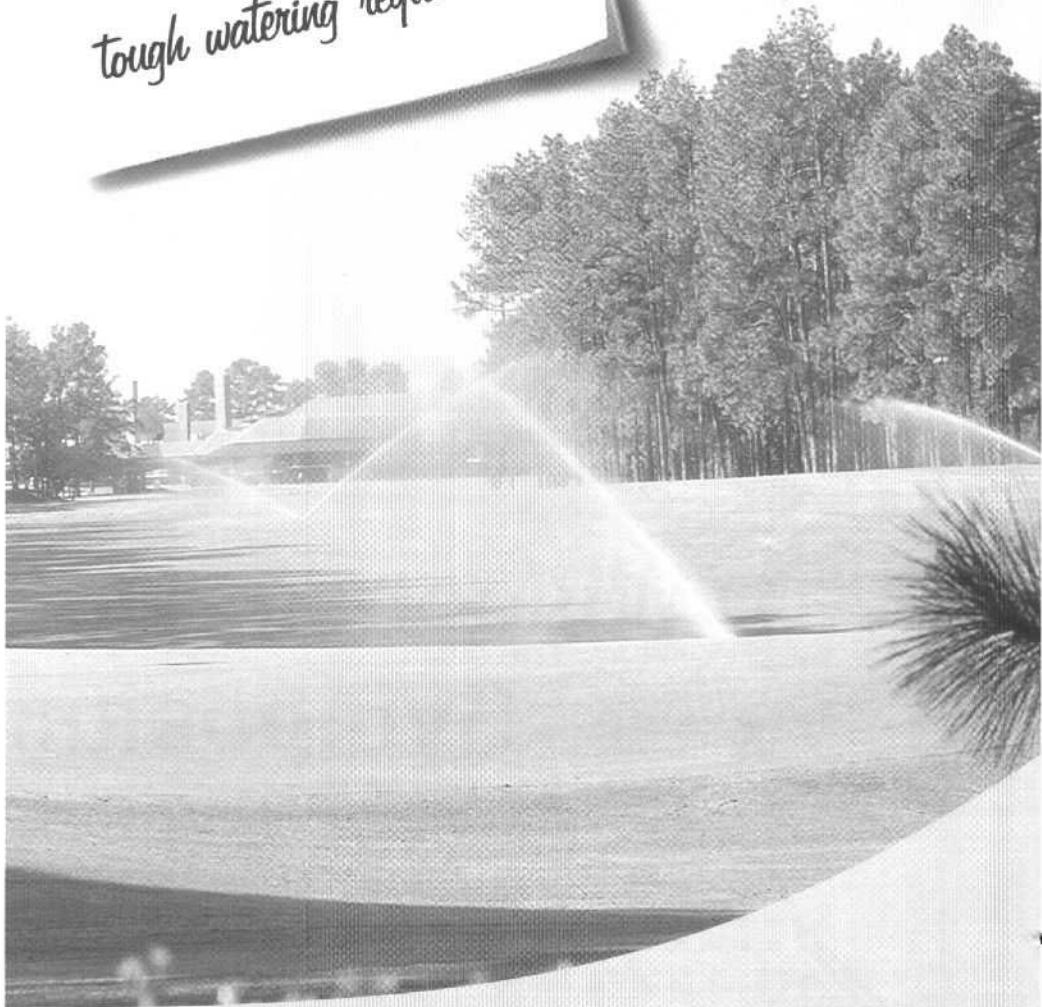
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dimple configurations are constantly being tested using wind-tunnels just like the ones used to test air-plane designs, only smaller and not as windy. Dimple arrangements on the balls can even be varied in size and dispersion throughout the ball like the new Pro-VIX ball that has made its way onto the PGA Tour, giving players up to an extra 20 yards.

With all of this new technology in golf clubs and golf balls, the teaching aspect of the game changes as well. Due to the variation in hardness of golf balls, the need to develop swing speed to hit the ball becomes very important. A golfer can have all the top of the line equipment, but if they do not have the swing speed, the ball will not go its maximum yardage. Arm and hand speed are needed to get the maximum yardage out of the swing. Teachers emphasize getting the club in the correct plane, which in turn will position the club on the correct angle of attack to meet the ball square with the club face. By judging the shape, trajectory, and curvature of the ball flight, teachers can determine what needs to be adjusted or corrected to attain the best ball flight.

Golfers have different swings and swing speeds, and with new technology, clubs can be designed to match player's swings to maximize distance, consistency, and accuracy. Depending on the swing speed of the individual, the shaft can be adjusted to produce more club head speed. Shafts can be comprised of steel or graphite, and the latest development is the combination of both graphite and steel in the same shaft. Typically, someone with a lower swing speed would need a lighter shaft with less stiffness and someone with a higher swing speed would need a heavier shaft with more stiffness.

Club heads have also been adjusted with the new cavity-backed clubs and the principle of perimeter weighting. Cavity-backed clubs are designed to be more forgiving because the off-center strikes will travel straighter and longer than was previously possible with older technology. These clubs do this by having the weight taken from the back of the club head and placed around the perimeter - hence perimeter weighting. Because the club head has this weight behind the toe and heel of the club, when a shot is hit from either, the head remains more stable and does not twist. Anything that reduces twist in the club head at impact will result in more accurate, longer shots. Cavity-backed clubs now also tend to have lower centers of gravity to produce a higher launch angle for shots, which allows the ball to get airborne more easily. This makes hitting long irons considerably easier and less daunting.

With improvements in player swings and equipment, handicaps are decreasing. Golfers can now hit more greens and reach greens that they could not in

years past. This means that they are getting strokes on the greens because if a player with a high handicap is hitting the same amount of greens as a player with a lower handicap, the higher handicapper is getting more strokes based on their handicap. To fix this, courses are utilizing four to five different tees with different course ratings to establish a handicap based on the tees an individual regularly plays.

Besides changes in equipment, courses, and teaching, the players themselves are changing. Today, conditioning for golf is more important than ever before to improve performance and prevent injuries. There are more golf-specific stretches and exercises being promoted, when less than 10 years ago, it was rare to hear or see any information regarding conditioning for golf. Conditioning for golf was unheard of because golf was not considered an athletic sport, but it has become a key element to success of many tour players. Annika Sorenstam credits her captivating 2001 season, which featured eight victories, a 59, and LPGA Tour records for earnings and scoring average, to a strict exercise program she intensified in late 2000. David Duval, who started 1999 with a 59 of his own and a burst of victories that seized the No. 1 ranking from Tiger Woods, radically changed his body with a killer off-season program before the 2000 season. Tiger Woods himself was transforming his own swing and upgrading his training and nutrition, to lay the groundwork for what would become the finest 18-month run in golf history.



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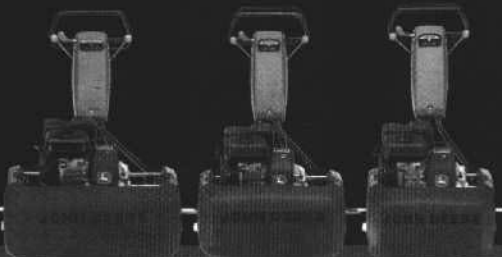




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Today, there are approximately 17,000 patents for new golf products. First, it was oversized club heads and long-distance balls. Now it's golf assisted by satellites. The global positioning system employed during the Gulf War is now being used to track the position of specifically equipped golf carts. This allows golfers to gauge the distance from the tee to the hole. But the GPS does not just read the layout of the course - it can tell a golfer about an approaching lightening storm and even order lunch. Golfers can also use the system to call for help in case of an emergency. A most recent innovation is the use of binoculars with a laser beam that detects reflectors in or on top of the flag sticks to tell a golfer exactly how far they are from the pin for each shot. Another new invention allows golfers to step into a videotaped silhouette of a professional golfer and then imitate the pro's swing. On the driving range, average golfers can compare their swings to those of the professionals.

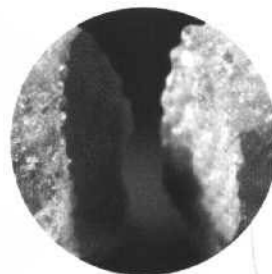
The latest innovations in both clubs and balls continue to make golf easier and more accessible for more and more people, which is one reason why the sport is so popular. PGA tour players are basking in the new technology of equipment because it is allowing the middle players to compete with the best. Players who are not as long off the tee like Jeff Sluman, Mike Wier, and Fred Funk can now compete with the longer hitters with the advantages of new technology. Driving distance, fairways in regulation, and greens in regulation have all increased within the past 20 years as a result of the new technology (see table below).

| Average of top 10 PGA  | 1982      | 1992      | 2002      | 2003      |
|------------------------|-----------|-----------|-----------|-----------|
| Driving distance       | 270 yards | 275 yards | 298 yards | 302 yards |
| Fairways in regulation | 73%       | 73%       | 73%       | 75%       |
| Greens in regulation   | 71%       | 71%       | 71%       | 76%       |

In fact, this year at the Phoenix Open, the field averaged 301.3 yards off the tee. In 1993, the longest

drive to date was 388 yards, and in 2003, at the height of technology, the longest drive to date is 446 yards.

Technology has impacted golf course design, maintenance practices, clubs and balls, teaching, and the players themselves. Golf course design features include more tees, narrower tee shot landing areas, strategically placed hazards, and more contouring on the greens. Courses are also being maintained differently with the utilization of better equipment designed to increase green speed. Clubs are now designed to match player's swings and maximize distance, consistency, and accuracy. Dimple arrangements on balls are being dispersed and varied to reduce drag and let the ball fly further. Finally, players themselves are discovering how important conditioning and a healthy diet are for optimum performance. In 1997, the evolution of the game of golf was stimulated by the performance of Tiger Woods. Who would have thought that the performance of one man would lead to the most incredible advancement the game of golf has ever witnessed? ♣



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# Keeping Pace

By Pat Norton, Golf Course Superintendent, Nettle Creek Country Club

Keeping pace, as we normally understand it, refers to that very noble effort of a few years back in which busy public courses sought to teach public linksters a strong measure of golf etiquette...to teach them to play 'ready golf'...to teach them the concept of 'keeping pace'...with the preceding groups and with the four-hour clock.

Like many other public courses...we have a series of signs that we installed in those days, and still use along the route that golfers follow here that state 'Keep Pace Today!' Our other version

states 'Are You Keeping Pace? A Four-Hour Round Equals 13 Minutes Per Hole!'

So...for many seasons now I've been traveling this course letting these signs speak to me on an almost daily basis. Most days I let them ask me if I'm keeping pace on relatively simple matters like progress of the crew out ahead of the golfing horde...or keeping pace as far as progress of course conditioning versus the amount of work yet to be done this week!

In late May...after a particularly frustrating management group

meeting...in which the hot topic was upcoming summer golf pricing and lackluster golf revenues year-to-date...my signs spoke to me in a new and ironic way. The sign between the fifth and sixth holes innocently asked me 'Are You Keeping Pace?' In my agitated state...I blurted out... "Hell no, we're not keeping pace...and you damn well know it!"

Well...that was May and it's now August...and we're still not keeping pace with our budget and our finances in general. Not keeping pace. Much to my

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dismay...once again the actual revenues year-to-date at this golf course are not keeping pace with our budgeted amounts for 2004.

After all of the off season budget meetings, planning sessions, and optimistic talk about how 2004 would be different...and better...and yield more financial fruit...it is no better.

In fact...our financial situation...in the humble opinion of this simple, yet very veteran superintendent...is worse today than a year ago when the economy was supposedly worse than present day August 2004.

Our total income through August 9, 2004 is a very substantial chunk less than at the same point in 2003. Some of the shortage is in membership sales...lots of good golf course choices for the public out there. Some of the shortage is merchandise sales...and some is due to less food and beverage sales. But, the critical part of the shortage is due to a decline in green fees, cart fees, and outing revenues.

In our off season planning...our ownership expressed their view that green fee discounting is a dead end street and that we should be reestablishing a base greens fee price of around \$40 weekdays and \$50 weekends. All other special pricing (twilight/early bird) would be based on these standards...emphasizing little or no summer discounting!

As a result, our \$30 weekday May golf course became a full \$40 weekday June golf course...which equates to a full 33% price increase versus the month beforehand. And when comparing to the summer of '03...we went up again a full one third. Last summer...by the way...we were packing them in at \$30 weekdays/\$25 for seniors.

So...understanding that Golf Retailing 101 says that raising weekday greens fees by 33% isn't the most intelligent way to attract

the basic public golfer...what's up with all of this stupidity?

During the meeting referred to at the beginning of this story...I expressed my views and opinions, albeit a bit belatedly. The initial company response to my heated outburst was that I should have expressed these views in February during planning time...while it was further stated that we needed to give this new pricing strategy some time. My strong feeling is that yes we did decide on stronger pricing over the winter...but that it became quite evident during May that such a huge increase in weekday summer pricing was not wise. Our weekend pricing went up only modestly for '04...but it did reach the magic \$50 mark for prime time weekend AM tee times. That was only a \$1.00 increase versus '03...but drew notice for being so expensive also.

After suffering through a rainy May...and a quiet June and July...it's becoming quite clear that our full price strategy has resulted in golf income that is far behind budget and way behind last year. What a huge and total surprise. I think I'll go crow

hunting to provide some nourishment for our overconfident young golf professional and our stubborn owner. They should both be quite hungry these days... Then...knowing that we've all 'shot ourselves in the foot'...my next stop would be WalMart to buy ourselves some bandages and clean socks!

I actually heard this statement of total ignorance and denial during our heated session..."Where else are they going to play?"...as if we have some sort of monopoly on public golf out here in corn country USA! Pointing out vehemently that there are approximately 10-12 new public courses within a 75 mile radius fell on deaf ears also.

Needless to say...it's been hard to understand, hard to accept, and a bit tough to see such a quiet, placid, empty golf course. This veteran superintendent always watches the first tee, checks the computer tee sheet, senses easily just how much golfers are/are not pushing us along during AM course prep, and knows full well how many \$\$\$ equals a poor, good, or great day...and definitely knows



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how to read an income statement and yes...the full monthly financial statement. He/she knows what must be done to keep pace.

It is as easy for me to see why we are behind financially and to somewhat second guess the situation...as it is difficult for the other decision makers to admit and promptly correct their mistake.

Before each and every other golf season that I've been involved with down here...we would decide on very moderate, palatable price increases...about two-three dollars...or maybe no increase at all. We would decide on green fees, member fees, food and especially beer/beverage pricing...at all times thoroughly discussing and agonizing over proposed increases.

Why do we then...in '04... suddenly feel that we are so justified in asking them to pay so much more for the privilege of playing our 'so expensive to operate golf course?' Do we not understand that the public golfer doesn't know...doesn't understand...and doesn't care about our operating costs? Did we forget that 80% of our clientele have to drive a considerable distance to get out here and that gasoline in early summer '04 was \$2.00/gallon and expected to go much higher? Do we really believe that the average weekday public golfer doesn't golf on a budget? Don't we all know that a quite high percentage of these golfers look for golfing value? Doesn't the term value refer to at least partially to the concept of price?

And...in a twist that hasn't been lost on this veteran observer...'superior customer service' was all but guaranteed at the onset of the season...as a sort of justification for increasing prices. During winter discussions...service and providing the NCCC golf experience became a reason for increasing prices...which by early August has waned to a sort of struggle to hold it all together for our golf staff. The service and dedication have declined over the

summer...but the increased price still remains.

Our past golf professionals also promised superior customer service...and to a point and for a time...they provided it. Then...at about this time of year...the burnout begins and everything suffers.

So...as our higher prices keep us falling further and further off the pace that our budget demands...how do we adjust? We watch expenses closely...and try to convince others that September 1 would be a great time to institute Fall '04 Special Pricing...and thereby salvage part of our income season.

During these tough times is when real leaders...in any golf endeavor...begin to grind it out. Veteran superintendents and golf professionals know how to keep

things on track and focus on the business...on the golf course...and not let personal difficulties get in the way. They know that overcoming these obstacles makes them stronger...and smarter...and tougher.

The neophytes must learn quite rapidly that there is nowhere to run and hide...and there is no giving up. If they want to build a reputation...a resume...a career...and a family...whether in golf or any other line of work...they must stand and fight. They need to learn how to lead...as all of us learned during our formative years. They need to learn how to finish the task for this current year.

Then next year...if they still want to be in this business...they'll have a little bit of experience in keeping pace. ♣





# “If It Were Too Easy, Everybody Could Do It”

By Lori Ward Bocher

The entrepreneurial, philanthropic, and relational spirits are alive and well in Terry Kurth. He thrives on starting new businesses and watching them grow. He's deeply satisfied by giving his time, talents and treasures whole-heartedly to causes in which he believes. He puts his family high on his list of priorities and is quick to credit his wife, former bosses and university researchers for helping him get to where he is today.

Just listening to this Type-A personality talk about his life can tire out the Type-B personalities among us. But his voice is calm and sure and his demeanor is modest as he tells his life story. “I like a challenge,” Terry admits. “One of the things I remind myself when I get frustrated is, ‘Well, if it were too easy, everybody could do it.’ I am a competitor, whether it's on the golf course or in business.

“And I absolutely enjoy people,” he continues. “When people ask me to define my success, the thing I'm most proud of, besides my family, is the tremendous amount of friends I have. I tell my kids all the time, ‘Money can buy a lot of things, but respect isn't one of them.’ I would like to think that I'm respected within the industry. That's extremely important to me and I'm proud of that.”

At the age of 51, Terry has 25 years of experience in the lawn care business. Currently his entrepreneurial spirit lives through his role as Director of Development for Weed Man Lawn Care, a Canadian-based company that recently moved into the U.S. His philanthropic spirit was lifted by a recent \$150,000 gift to help endow the “Terry and Kathleen Kurth Wisconsin Distinguished Graduate Fellowship



in Turfgrass Management' at the UW-Madison. And his relational spirit exploded with the birth of his first grandchild this summer.

### **Madison native...**

But how did he get to this point in his life? Terry was born on the east side of Madison in 1953 where he attended school through the 5th grade. Then his father built a new home near Pine Bluff which is straight west of Madison, about seven miles from the beltline. He graduated from Mt. Horeb High School in 1971. “I met my wife, Kathy, in high school,” he points out. “I took her to Homecoming my senior year.”

Terry always knew he'd attend the UW-Madison. But he wasn't so sure about his choice of major. “I thought about ag engineering, maybe designing sewage treatment plants or something like that,” he recalls. “But I decided that the math requirements weren't my bailiwick. I enjoyed an introductory course in agronomy and after my freshman year I

worked one summer at the UW Ag Research Station in Arlington.

“My sophomore year I took a soils course with Dr. J.R. Love,” Terry continues. “He talked some about golf course work. He was like a mentor to me. He literally drove me out to Nakoma Country Club for an interview with Jerry O'Donnell who was superintendent there at the time. I was hired and worked there the summer of 1973 and 1974 and through the winter of 1974-75 with Randy Smith as the superintendent. I had no sooner been hired by Jerry when he moved to Scotts, Randy came to Nakoma, and Monroe Miller was hired at Blackhawk. So I've known and respected those guys forever. Randy was just an outstanding boss and gave me great training.”

### **Former superintendent...**

That training came in handy when, after graduating in 1975 with an agronomy major and business minor, Terry was hired as superintendent at the Peninsula State Park Golf Course - the one and only golf course at a Wisconsin State Park. He worked there from April of 1975 through the summer of 1976 and has fond memories of his short-term experience as a golf course superintendent.

“I was there during a droughty period, and the course had an antiquated irrigation system,” he recalls. “We had to bring a fire truck onto the course to water the greens early in the spring because the water hadn't been turned on yet. Once the water was on, we had to use a metal detector and pitch fork to find the quick coupler heads on the fairways.

“The summer of 1976 was very