USGA® GREEN SECTION

Record

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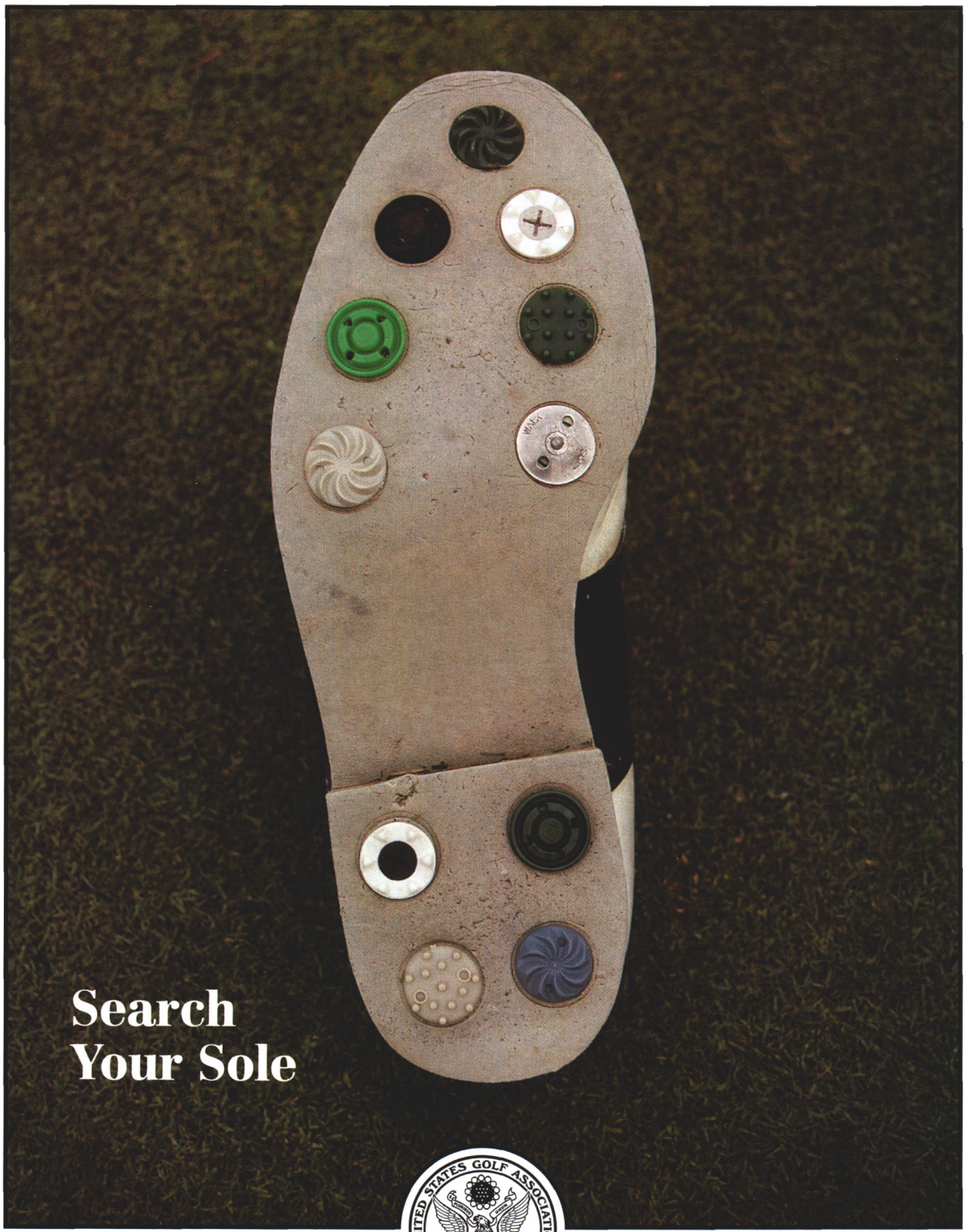

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A PUBLICATION ON TURFGRASS MANAGEMENT

BY THE UNITED STATES GOLF ASSOCIATION®

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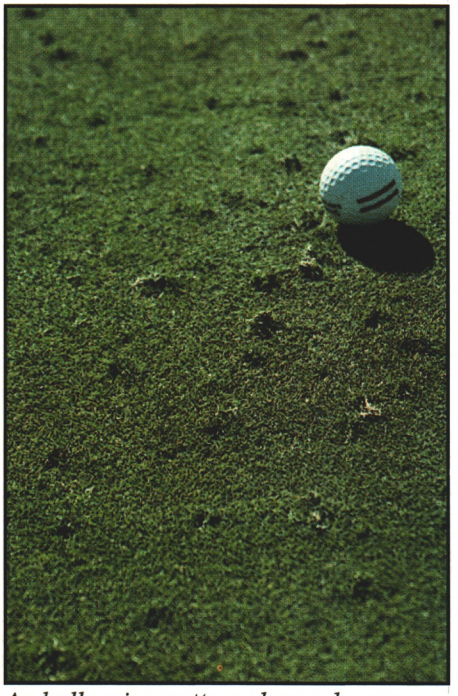
Volume 34, Number 5

Cover Photo:
There are now a number of alternatives available to replace the standard metal spike.



A challenging putt can be made more difficult with a "few" spike marks. See page 1.

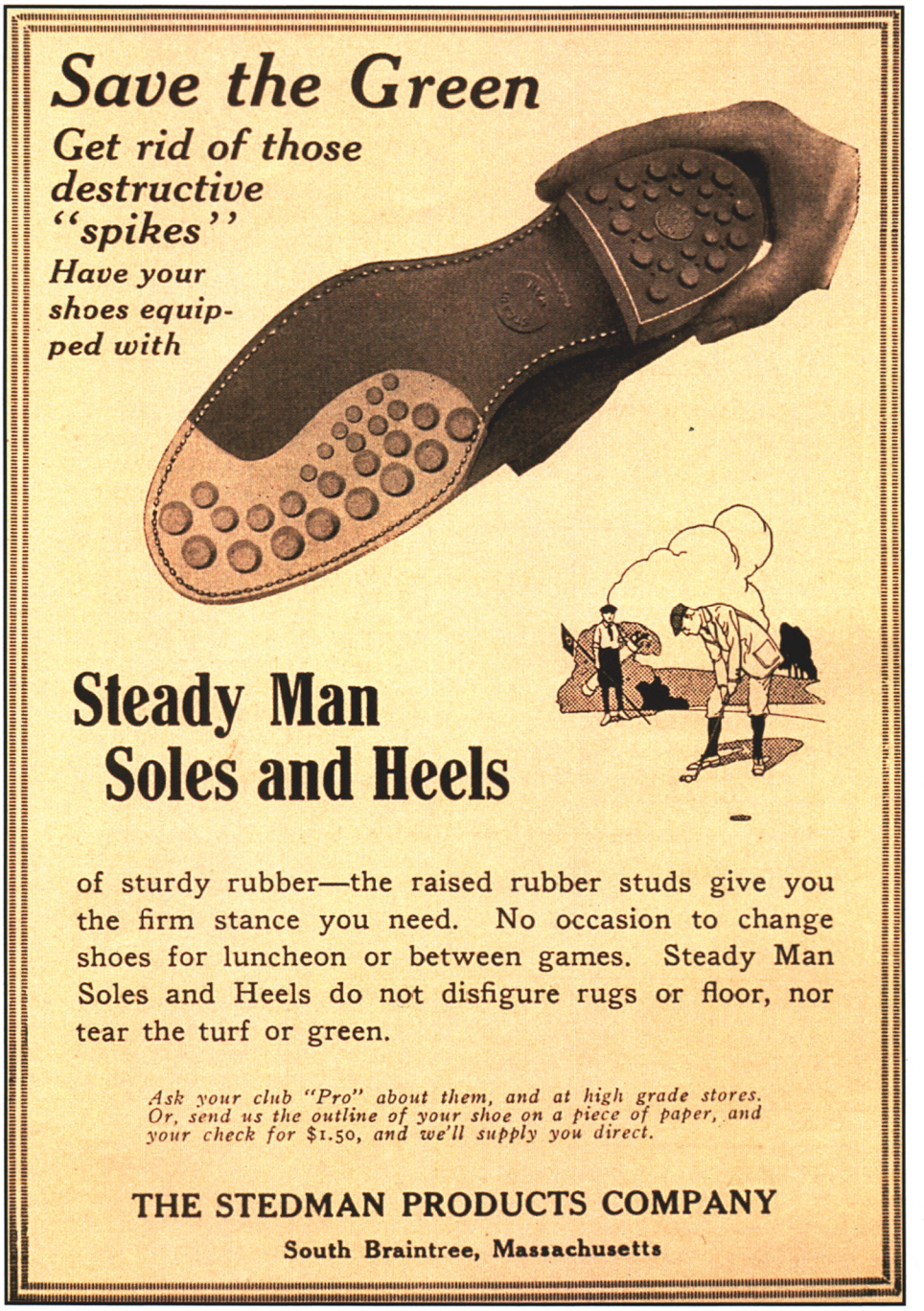
Super dwarf bermudagrasses were produced by irradiated dormant sprigs of Tifway 2. One of the progeny became TW-72. See page 11.

USGA® GREEN SECTION
Record

The Metallic Mashers of Monocots: Golf Spikes!

Love 'em or hate 'em, spikeless alternatives are here to stay.

by LARRY GILHULY



The spike damage issue has been around much longer than people realize. This ad appeared in the June 1921 issue of Golf Illustrated.

IT IS ONE of the most common signs found at any golf course. It usually is hung outside the entrance to the clubhouse or when entering the dining area. It is simple. It is definitely to the point. It states, "NO SPIKES ALLOWED!" The reason is obvious, since we all know the damage metal spikes can cause to carpets and wood flooring. Then why, when spikeless alternatives are introduced to address the same issue on the golf course, do so many people passionately resist the concept? Why do so many others feel exactly the opposite?

A wise man once said, "Every old idea was a new idea at one time." Let's look at this *new* idea and discuss the positives and negatives of golf spikes and spikeless alternatives.

Spikeless Golf — A New or Old Idea?

Until the late 1800s, golf spikes or protrusions on the bottom of shoes were not even used. They were still a novelty when an event occurred in 1914 that has gone down in history as one of the worst calamities for grass growers. The flamboyant Walter Hagen won the U.S. Open that year in hobnail shoes! Thus, the metallic mashers of monocots were born, and a very willing public followed their heros, believing that they, too, needed the extra traction offered by these wondrous devices.

The USGA began studying the issue as far back as 1958. Dr. Marvin Ferguson, then research coordinator for the USGA Green Section, found that the conventional golf spike not only caused severe damage to the turf, but soil compaction and delayed recovery were additional problems

when compared with the effects of other shoes.

In 1982, studded shoes were reintroduced, having been tried during the 1920s; however, during wet conditions, golf course superintendents reported significant disturbance to putting surfaces from them. For this reason, Golf Shoe Study II was conducted by the Green Section to compare traditional spiked shoes to studded shoes. The results from this study again demonstrated that shoes with golf spikes were the most damaging during both wet and dry conditions. It further proved that golf spikes DO NOT help aerate the putting surface. They do exactly the opposite!

With the introduction of replaceable spikeless alternatives in the early 1990s, one study offered additional insight. At Ohio State University, researchers found that when compared to traditional metal spikes, golf balls rolled significantly farther and truer on dry plots where spikeless alternatives were used. There was also a *striking difference* between the spikeless and metal spiked treatments. The metal-spiked plots were *literally chewed up* after the 10-minute walking session. The spikeless plots looked healthy and could barely be distinguished from the control plots.

So, do you need additional evidence that golf spikes are bad for turf? Ponder these numbers. The average golf shoe has 11 spikes. The average number of paces taken on a green is 52. Therefore, each golfer leaves 572 (52 × 11) individual spike marks on every green. In one 18-hole round of golf, a single player will leave behind 10,296 spike marks. If the course receives 200 rounds of play, the total number of spike marks reaches 2,059,200 for one day! If the course averages 200 rounds every day for a month, the total reaches a staggering 61,776,000! Multiply this by 12 months (741,312,000!) and you can now see why putts are commonly missed and why golf course superintendents hate the damage caused by these instruments of destruction.

The Trouble With Golf Spikes

We have seen that golf spikes do cause considerable damage to putting surfaces. The problem with golf spikes, however, extends well beyond the documented research previously outlined. It includes one of the Rules of Golf, several parts of the golf course maintenance operation that do not involve the greens, and areas of the entire operation that significantly influence the bottom line. Consider the following:

1. Rule 16-1a. This Rule describes the circumstances under which a player is allowed to touch the line of a putt. Noticeably absent from the options is the ability to tap down spike marks. While the majority of players wish for a Rule change, apparently it will not happen in the near future. In reality, spike marks are addressed in The Rules of Golf in Section 1 under Etiquette. It states in the *Care of the Course* subsection, "On completion of the hole by all players in the group, damage to the putting green caused by golf shoe spikes should be repaired." As with ball marks, the player needs to participate in course maintenance by repairing spike marks, too.

2. Damage to concentrated traffic zones around tees and greens. Everyone is familiar with the paths that can be created by players funneling around a bunker or near a tee. The time spent diverting traffic, overseeding, sodding, topdressing, and aerifying means that other maintenance operations suffer.

3. Damage to teeing surfaces. Divots are bad enough, so why compound problems by allowing players to grind millions of metallic spikes into the teeing surfaces?

4. Clubhouse floor damage. The wear and tear on clubhouse and pro shop carpeting is another problem with golf spikes. Significant yearly savings could be realized by eliminating these floor destroyers.

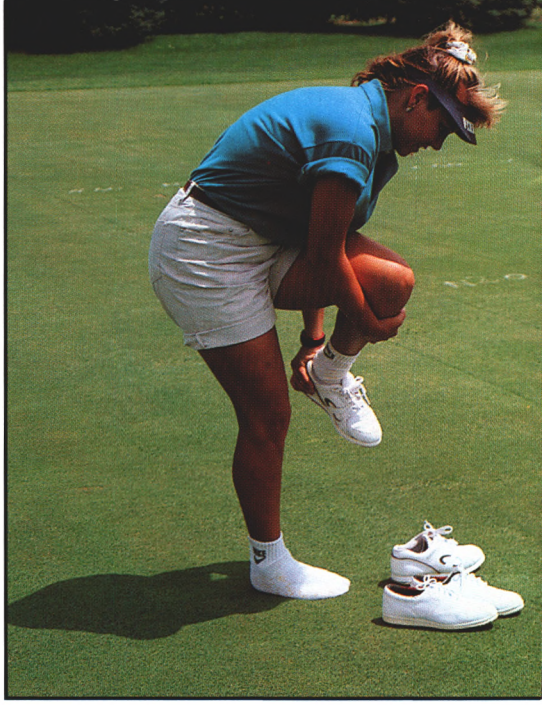
5. Damage to golf carts. Floor mats and the inside of power carts receive far less abuse when metal is removed from the bottom of players' feet.

6. Damage to cart paths. Significant wear occurs on asphalt paths in a short period of time. Concrete paths also can become worn; however, the real danger with concrete is the tendency to slip or catch a spike, thereby causing injury.

7. Damage to wooden bridges and ties. Golf spikes rapidly wear out these surfaces and a rubber mat cover is usually required to protect the wood.

8. Damage to artificial mats. Spikes rapidly wear out these expensive products, with the most abuse found at the practice tee.

9. Damage to mowing equipment. Ever see what a metal spike does to a finely tuned green, tee, or fairway mower? Given that the slightest nick can cause significant damage to mowing equipment and playing quality, a loose spike is like a land mine awaiting detonation.



The trouble with golf spikes is that they damage virtually every portion of a golf course. They significantly disrupt the putting surfaces, do untold damage to carpeting and floors, and are the mechanics' worst nightmare.

With all of this going against it, why does this seemingly insignificant piece of metal have so many avid disciples? Read on; however, you may not like the answers!

Five Fallacies Facing the Future

During the late 1980s, the spikeless alternative movement gained momentum in Boise, Idaho. Ernie Deacon, general manager at the Warm Springs Golf Course, faced the problem of damaged greens during the winter when spikes were allowed on frozen greens. After spikes were banned, the players rightfully complained about slipping when playing in tennis shoes on frozen turf. What to do? How about a spikeless alternative that would give acceptable traction and not crush the crown of the plant? With this idea, an alternative to spiked golf shoes was born. Everyone would immediately switch and life would be good for all players and golf course superintendents. Right? Wrong!

Why is it that so many players still are not convinced about the positive value of spikeless alternatives? While many simply have not become edu-

Penn State University currently is studying the effects of alternative versus conventional spikes.

cated on the subject, many golfers do not even want to talk about this subject with an open mind. Here are five observations that may help answer this question.

1. Safety issues. This is the big one! Many players are convinced that the spikeless alternatives are dangerous, even during dry conditions. If this were the case, why would more than 400 golf clubs, numerous golf associations, and several hundred thousand players eliminate golf spikes from their courses, tournaments, and feet? As noted trial lawyer and USGA Green Section committeeman Bo Links states, "There is no shoe that is completely slip-proof. You need to be careful walking down a hill in wet conditions, but spikes don't guarantee that you won't slip, either. Because of the many positives achieved by eliminating spikes, this is a compromise position that makes sense."

So is there a safety issue? There is if you are not thinking while you are walking down a wet hill or on a slippery wood walkway. So, avoid solid surfaces that could cause slippage. When you must walk on one of these surfaces, take small steps with complete foot contact. When going down an inclined turf area, plant the forward portion of the foot first to establish complete contact with the entire shoe. A fellow golfer was overheard recently, and he truly put this issue in perspective. He stated, "I've worn my spikeless shoes all winter long on a hilly golf course during one of the wettest winters and springs on record. It actually made me swing easier and, most important, *it made me aware of how to walk properly on a golf course.* In spikes, I probably would have slipped and fallen several times because of the mistaken belief that I was safe."

2. Traction during the swing. It is true that spikeless alternatives are not for everyone. They can be especially troublesome for those with a tendency to flail at the ball. The fact of the matter is that most players who have tried spikeless alternatives report a minimal loss of traction, even in wet conditions. If a player is consistently slipping, he should contact his local PGA professional for a lesson in balance.

3. Tradition. It has been interesting to read the many editorials and articles on this subject during the past several years. On the pro-spike side, the most outrageous editorial supported the need to hear the metallic click of spikes as the player walks on a hard surface. Tradition was the main reason cited. Since golf spikes have really only been popular during the past 82 years and golf was played spikeless before the time that Columbus sailed the ocean blue, it is agreed that tradition should prevail. That tradition is spikeless!

4. Closed-minded touring professionals. There have been more uninformed and outright incorrect comments from this group than any other one regarding this topic. Some have called spikeless alternatives *dangerous* without even trying them, and others turn up their noses as if they are downwind from a cattle yard. Perhaps the staggering sums of money available on the Tour offer some justification for their viewpoint, but why do they often state that spikeless alternatives cause the greens actually to be less smooth than greens played with spikes? Granted, this can happen with some types of shoes when the greens are overly wet; however, this problem is non-existent on firm putting surfaces.

Fortunately, there are a few shining lights who have given spikeless alternatives an open try and found them to their liking. Two-time U.S. Open winner Andy North has been spikeless for two years, and Raymond Floyd completed the 1996 Masters without leaving a single spike mark on the greens. Both have mentioned significantly improved comfort without traction problems. Others, too, are beginning to see the light; unfortunately, it may be a long time before we hear the pros stop complaining about spike marks costing them yet another tournament title.

5. Closed-minded club professionals. As with the touring pros, there has been a reluctance on the part of some club professionals in embracing spikeless alternatives. While the touring pros may determine trends in golf equipment based upon their play, it is the local PGA pro who can make or break this idea. At every course we have viewed during the past several years where spikes have been either banned or discouraged, it is the golf course professional working hand-in-hand with the golf course superintendent who has made the difference. As Walter Mattison, CGCS at Widgi Creek Golf Club, in Oregon, recently stated, "Many of the membership resisted the idea, but once they saw the results, they came around. Our Director of Golf, Walt Porterfield, took a strong stance, backed it up, and was the absolute key to the successful implementation of our policy that bans metal spikes." Now that is the mark of an open mind and a true professional!

The Present and Future of Spikeless Alternatives

When spikeless alternatives were introduced in the early 1990s, they didn't even make a scratch in the spike production market. From humble beginnings with 500,000 pairs of spikeless shoes produced in 1993, the numbers have steadily risen to more than 6 million in 1994 and 20 million in 1995. With several models currently available on the market, what makes these spikeless alternatives so attractive? Are there any negatives besides those previously mentioned? Yes, there are, but as you will see, the positives far outweigh the negatives. Let's explore the most-asked questions about these monocot massagers.

1. Do they eliminate spike marks? Absolutely! They are especially effective on bentgrass greens; however, Eugene Country Club, smack dab in the middle of *Poa annua* country, recently became the second golf course in Oregon to place a ban on spikes. When asked why the club decided to make this stand, golf course superintendent Chris Gaughan put it very simply, "There was a tremendous difference between the *Poa annua*-dominated greens before and after the ban on golf spikes. Spike marks were not the issue. Quite simply, the greens were

smoother. The players who played in the late afternoon really appreciated having the same course as those who play in the morning."

2. Do spikeless alternatives halt *Poa annua* invasion? No, they don't; however, by eliminating spikes, bentgrass greens are healthier and can better resist *Poa annua* encroachment. Realistically, this is an area that requires more research before claims can be made.

3. Are they more comfortable? Forgetting for a moment the superintendents' glee with the introduction of this concept, the most common positive comment we hear comes from players concerning how comfortable they are during and after a round of golf. For this reason, many older players or those with joint and leg problems find these alternatives especially soothing.

4. Should they be used during the winter? That is exactly why they were invented! In areas of high rainfall and warmer winter temperatures, the option of spiked or spikeless shoes should be determined by the terrain and those in charge. As mentioned earlier, just use common sense when walking and your backside will remain as clean as your frontside.

5. Do they minimize damage to non-turf areas? Put it this way: If you can eliminate a hard, metallic object from contact with a material that is softer, don't you think the softer object would last longer? That is why carpets, wood floors, cart paths, bridges, tee markers, wooden steps, benches, and artificial practice mats last longer when golf spikes are eliminated.

6. Do they last as long as metal spikes? Although there are spikeless alternatives that will last as long, this is one major drawback to the non-metallic alternatives. Experience has shown that some brands may last fewer than 15 rounds, while others continue to perform well beyond 30. The cost to the player may be higher, but the cost to the course is significantly lower.

7. Are they convenient to use? They are if you like the idea of finishing a round, walking into the 19th hole, going into the dining room for lunch, and then driving home without changing shoes!

8. Are they less damaging to new greens? If you want to open your course before adequate organic mat has developed, spikeless alternatives can offer an opening of four to six weeks sooner than the normal six-month waiting period for bentgrass greens.

The metallic mashers caught in the act.

9. Are they needed on bermudagrass greens? Although the results may not be as noticeable, it will help. Besides, aren't there enough other non-turf advantages to this program for every golf course?

10. Do they allow the superintendent to use fewer chemicals? More research is needed in this area, but if the greens receive less damage, then it is logical to assume that the healthier grass will resist disease, insects, and weeds.

11. How can we get started? This is perhaps the toughest question. Experience has shown that you must have the following key people on board before embarking upon your journey:

Golf course superintendent
Director of golf or head professional
Green chairman and the committee, if applicable
President and board of directors, if applicable
Men's and ladies' club representatives

Once these key players see the validity of this concept, an educational program must be started. Newsletters, fliers, notices posted in the locker rooms, and word-of-mouth should help educate players about the damage caused by spikes. Then, host a spikeless tournament for one day to see the difference up close and personal. If the field is very large, an even better approach is to play the course spikeless with a shotgun in the morning. For the afternoon, play with spikes only. After each round is completed, send the decision makers around the course to view the difference between spikes and no spikes. It will be noticeable!

The next step is to provide a trial period when spikes are eliminated. This can last from two to four weeks before a final decision is made. Depending upon your location, a year-round or growing-season ban will make a substantial difference in many areas at your golf course.

It's All Up To You!

Are spikeless alternatives in your future, or are they a passing fad for the feet? If what has happened in the first half of the '90s is any indication, they are here to stay and will only get better with time. Just think, someday we could all get together and laugh about the old days when we were crazy enough to wear the metallic mashers of monocots!

LARRY GILHULY *serves as director of the USGA Green Section's Western Region.*

GENE R. TAYLOR AND RICHARD H. WHITE

Charles Joachim, superintendent, and Bryan Grantom, assistant superintendent, provide members of the Texas A&M University Turf Club with history and general information about Champions Golf Club prior to conducting the resource inventory.

AGGIES IN ACTION

Texas A&M University turf club participates in the Audubon program.

by DR. RICHARD H. WHITE

GOLF COURSES are often criticized in the news media and by environmental organizations for conducting environmentally damaging practices. In reality, however, most golf course superintendents are as concerned about the potential environmental impacts of their management decisions as are many members of conservation and environmental organizations. Some golf courses have been managed for many years in ways that protect and enhance the environment. Similarly, many other golf course managers are altering maintenance of certain areas to enhance wildlife habitat within the course property.

Golf courses provide valuable open spaces, greenbelts, natural sanctuaries, and wildlife habitats, especially in areas of urban expansion. Audubon International, in conjunction with the United States Golf Association, created *The Audubon Cooperative Sanctuary Program for Golf Courses* (ACSP) to encourage and recognize golf courses that take a leadership role in conservation projects. The ACSP encourages habitat enhancement, establishment of Integrated Plant Management (IPM) programs, and protection and conservation of water resources. Participation in the ACSP offers the golf course superintendent and course officials valuable information through publications, telephone consultations, and on-site visits by special arrangement. The ACSP increases awareness about positive contributions golf courses make on behalf of the environment and the local community.

More than 2,200 golf courses participate in the ACSP, and many take the first steps to become a registered participant in the program. Some,

Teams and Team Members Conducting the Resource Inventory at Champions Golf Club

Team	Photography	Property/Adjoining Land Use	Plant Inventory	Wildlife Inventory	Superintendent Information
Leader	Jay Stine	Dan Burkett	John Ferraro	Mark Peloquin	Brad Waters
	Chris Barker	Larry Rider	Sharon Morton	Scott Fuller	Gene Taylor
	Todd Terry	Jason Gaudreau	James Huntsman	Chris Cunningham	Kurt Sewell
		Chris McCallum	Eric Siebold	Zac Pettiete	John Waver
		Matt Brewer	William Boaz	Wade Warms	Belew Ellis
			Stephen Grochett	Brad Fryrear	

however, do not follow through with the program because they just can't seem to complete the first step — a Resource Inventory. The Texas A&M University Turf Club felt that the ACSP is an important and valuable program, and its members became interested in helping golf courses achieve success in the ACSP program.

The Texas A&M University Turf Club is a student organization whose members are primarily undergraduate students enrolled as Agronomy majors in the Turfgrass Management Option in the Soil and Crop Sciences Department. Many of the Turf Club's members are interested in pursuing careers as golf course superintendents. The Turf Club members decided to become involved because they wanted to: 1) increase awareness about positive golf course contributions to the environment and the community; 2) encourage habitat enhancement, establishment of IPM programs, and protection of water resources; 3) assist golf courses, through cooperation with the golf course superintendent, in fulfilling the requirements to become a Certified Audubon Cooperative Santuary; and 4) enhance the educational background of club members through close interaction with golf course superintendents and application of principles learned in various college courses.

The Texas A&M University Turf Club felt it could be most helpful in the ACSP process by gathering data and helping golf course superintendents complete the Resource Inventory. The Turf Club decided that it could:

- Take photographs to include in the Resource Inventory that show views of water features, natural areas, wildlife enhancement projects, and areas for specific conservation recommendations.
- Determine specific golf course features such as the approximate acres of out-of-play turfgrass areas, in-play grass areas, and rough (if unknown).
- Determine specific land features on the property such as the approximate acres of woodland, prairie, wildflower meadow, and other habitat, and describe adjoining land and land uses around the course.
- Assess water features on the course, such as lakes, ponds, wetlands, creeks, streams, and rivers, including average length and width of each on the property.
- Determine wildlife information, such as species of plants, including major trees and shrubs, mammals, birds, reptiles and amphibians, and butterflies and insects.
- Cooperate with the golf course superintendent to accumulate other pertinent information about the golf course and management of the course.
- Prepare a formal copy of the Resource Inventory for review and submission by the golf course superintendent and other appropriate course officials.

The Turf Club contacted Jean Mackay, Education Director of Audubon International, to discuss participation in the program and find out about golf courses in Texas that had registered in the ACSP but had not completed the Resource Inventory. Ms. Mackay provided names of several courses, one of which was the Champions Golf Club in Houston, Texas. Jay Stine, the 1994-95 Turf Club president, contacted Charles Joachim, golf course superintendent at Champions, about whether he would be interested in having the Turf Club assist with the conduct of the Resource Inventory. Mr. Joachim was extremely interested and welcomed the Turf Club's involvement. Jay Stine and Mr. Joachim arranged a day for an initial site visit, and the Turf Club began planning and developing strategy for completing the inventory.

Developing Teams

The Turf Club decided that the most efficient way to complete the inventory was to develop teams that would be responsible for specific sections of the Resource Inventory. Dr. Richard White and Wallace Menn, faculty advisors to the Turf Club, served as project co-

Vegetation around streams and lakes is groomed to the water line in many areas that affect play. However, Champions Golf Club allows native trees, vines, and

ordinators. Five teams were selected based on information requested by the Resource Inventory form provided by Audubon International. The teams that emerged included: 1) Property/Adjoining Land Use, 2) Photography, 3) Plant Inventory, 4) Wildlife Inventory, and 5) Superintendent Information.

Jay Stine was the photography team leader with responsibility for obtaining photographs to illustrate existing features of the course. Brad Waters, superintendent information team leader, was responsible for gathering information from Mr. Joachim about management practices, existing habitat enhancement and conservation projects, integrated plant management programs, and other pertinent information that the superintendent could provide. Dan Burkett led the property/adjoining land team. His responsibility entailed defining adjoining land use, providing course maps and property descriptions, and providing data about water features, woodlands, buildings, turf, and other areas on the course. John Ferraro, plant inventory team leader, was responsible for providing a thorough inventory of major tree and shrub species. The wildlife inventory team, led by Mark Peloquin, was responsible for providing an inventory of mammals, birds, reptiles and amphibians that exist on the course.

shrubs along the water line of many water features in an effort to naturalize and enhance habitat for wildlife.

The Turf Club started the site visit by listening to a general overview of the history and management of Champions Golf Club by Mr. Joachim. Then, teams went to work to gather the data needed to complete their portions of the Resource Inventory. By the end of the day, each team had conducted a thorough inventory. After the Turf Club returned home, team leaders assembled the information obtained during the site visit and provided a written report. The reports from each team were combined to complete the Resource Inventory report. The Resource Inventory was then submitted to the Champions Golf Club for its review and subsequent submission to Audubon International.

Other Important Potential Resources

The information required for the Resource Inventory is not difficult to obtain. However, conducting the inventory does require a commitment of time. Setting aside a few minutes each day for this project is probably better than trying to do it all in a couple days. Local environmental organizations may be a potentially important resource that can help with the process and expand the member/public component of the ACSP.

The plant and wildlife inventory may be the most difficult facet if one wishes to obtain a thorough list of plants, insects, mammals, and birds. The requirements of the Resource Inventory in these categories are minimal, but many golf course officials, members, and superintendents desire a more complete species list. Often, organizations and individuals are available to assist in these areas, and the Resource Inventory provides a good opportunity to become involved with local conservation groups. Local wildlife and Audubon societies, and other bird-watching groups, may be able to provide assistance with wildlife and bird species identification. Local garden clubs and native plant societies may be willing to provide lists of native plants and also may be willing to help conduct plant inventories. There may also be course members who have expertise with plant or animal species and can provide assistance with the inventory. Member involvement in the ACSP process is important. Some golfers may have valuable expertise that can be utilized.

The Turf Club was able to obtain a list of birds, featuring their relative abundance and season of occurrence, for the Champions Golf Club area from a local wildlife society. Lists such as this one are a useful guide, but the birds listed should be verified as occurring on the course. Bird lists for particular areas are also useful for determining the birds that can be expected and ones that deserve special attention. Local birding or wildlife organizations can be valuable resources in determining current and future bird and wildlife populations.

A Native Tree Selection Guide also was obtained from the Coastal Region of the Native Plant Society of Texas by the Turf Club. Although this guide was not useful for identification purposes, the guide does provide useful information about trees that attract butterflies, provide fragrant leaves or flowers, and entice birds. This guide will be useful to the superintendent and club officials in deciding which species to plant to enhance wildlife habitat.

Future Involvement

Although the A&M University Turf Club is not affiliated with Audubon International or the United States Golf Association, its members believe that the ACSP is important to golf courses, the community, and the environment, and it will continue to assist with this program. The Turf Club members who help conduct a Resource Inventory gather excellent experience and will be more likely to participate in this program in the future.

One of the primary missions of the Texas A&M University Turf Club is to promote turfgrass education. Participation in the ACSP is an extension of the turfgrass students' education to a unique turfgrass/environmental laboratory. Members of the Turf Club are the next generation of turfgrass professionals. In a decade when environmental issues and concerns are at an all-time high, it is encouraging that these students have accepted the opportunity and responsibility of becoming leaders in environmental stewardship.

DR. RICHARD WHITE *is a professor in the Soil and Crop Sciences Department at Texas A&M University in College Station, Texas. In addition to conducting research and teaching turf management courses, he also serves as advisor to the Texas A&M University Turf Club.*

CHOOSING THE BEST APPROACH

Don't bump the "bump and run."

by DAVID A. OATIS

IN MANY WAYS, the game of golf has changed tremendously from its humble beginnings some 400 years ago in Scotland. It began as a game played on naturally windy sites that were maintained more by Mother Nature than by man. However, the game has now been transported around the world, and our ability to irrigate and fertilize, coupled with the demand for green turf and better playing conditions, have undeniably and dramatically altered the style of play.

Perhaps the biggest change is that, in the United States, golf has been turned into an aerial game, and at many courses throughout the country, the "bump and run" shot is but a distant and fading memory that is revisited only during the British Open telecast. Traditionalists and better players still understand the "bump and run" shot and may even play it on occasion, but I submit that most of today's golfers view it with disdain and this is reflected in the maintenance of our golf courses. Golfers or green committee members sometimes exclaim, "We don't want them to run the ball up on the green!" Apparently, playing a *bump and run* shot is considered by some to be as tactless as putting out of a bunker! This notion is ridiculous and has resulted in thousands (perhaps millions) of golfers being cheated out of playing one of the oldest and most interesting shots in golf.

The higher-handicap players often are the most penalized. Too often, the objective in maintaining approaches is to provide healthy, attractive turf and good definition. This results in mowing patterns and maintenance programs that are based more on aesthetics than their effect on playability. The purpose of this article is to call attention to this important area of our golf courses and to offer suggestions for improving it.

Identifying The Problem

So how does one identify whether a golf hole was designed for the *bump and run* shot? Experience is perhaps the best teacher, but common sense and careful examination of the green, approach, and the bunkering can provide many clues. *Hard green* complaints often result when golfers experience difficulty stopping balls on greens. Although the greens could indeed be firm, this complaint also could be a tipoff that the hole is not playing the way it was intended (e.g., a very long approach shot to a green not designed to accept it).

The solution may actually lie in the architecture of the hole. Thus, the first step is to consider the architecture of the hole and determine what type of approach shot is required. Is it a short, mid, or long iron or fairway wood, and what is the orientation of the landing zone? Remember, it is much more difficult to stop a ball on a green from a downhill lie. If the shot required is a long one from a downhill lie, it may be that a low running shot is called for.

The next consideration is the orientation of the green. Does the green slope toward the landing zone, is it level, or does it slope away from the landing zone? The orientation of the green and the landing zone must be considered *along with the mounding and bunkering* around the green and approach. One of the questions to ask here is which way will the ball bounce if hit into the approach? Stand in the center of a green and look back toward the landing zone. Oftentimes, you can clearly see whether or not the approach was designed to receive a shot. It is vital to pay more attention to the topography than the existing mowing patterns since mowing patterns can change dramatically over time.

Finally, go out into the approach with a few golf balls. Throwing them into the approach to see precisely which way they bounce is a very instructive technique. With a few throws you can easily determine if the topography of an approach is receptive to this type of shot. You can also identify which areas of an approach produce the best results. Just be careful to consider different angles of play and be sure to disregard the existing mowing pattern.

There are many mistakes that can be made with the management of approaches. Following are a few of the more common ones.

Mowing Patterns

The roughs on either side of the approaches often are encouraged or allowed to grow inward, closing down or *pinching in* the approach. This can hinder or prevent players from running the ball onto the green and can be especially devastating on an old course that may have been designed specifically for that type of shot. Occasionally, rough is grown completely across the approach on a short par-4 or par-5. While this may be appropriate in some cases, it eliminates the *bump and run* shot and it is certainly not appropriate in all cases. If the objective is to increase difficulty, narrowing or elimi-

An impossible shot! A firm green that slopes away from the golfer and rough grown across the approach will cause problems for all but the very best of golfers.

nating approaches may not be the way to do it. This just singles out and penalizes shorter hitters and higher handicappers.

Mowing patterns are best changed in the fall or early spring in most climates, and this may be all that is required to correct the situation. However, regrassing is necessary for courses where different varieties are being grown in fairways and roughs. This will be discussed later under "Turfgrass Varieties."

Resiliency

Another common problem with approaches is that they are soft and thatchy. The phenomenon of lightweight mowing started more than 20 years ago when superintendents began mowing approaches with triplex putting-green mowers to eliminate the damage that occurred when large fairway mowers made their turns. Since then, the approaches at many courses have received more gentle treatment. This situation can lead to increased thatch buildup, which leaves approaches soft and unreceptive to the *bump and run* shot. Firm, properly defined approaches are essential for some holes to play fairly. For instance, a par-4 with a firm green that requires a long second shot should not have a soft, spongy approach or rough grown all the way across it. A ball hit into a soft approach is unlikely to bounce onto the green, and if the green is too firm to receive a shot, the player is left without a reasonable opportunity of getting his approach shot onto the green.

The solution for most thatch problems is to increase the intensity of the cultivation program. In the Northeast, aerification with large, hollow tines a couple of times annually, combined with one or two aggressive and several light verticuttings, usually is recommended. It may be necessary to employ this type of program for a few years to get severe thatch problems under control. Approaches also can be aerified and topdressed just as greens are; this is an option to consider if cultivation alone proves insufficient.

Irrigation

Irrigation of approaches is sometimes an afterthought, and inaccurate irrigation often results when older systems are modified or updated. Most older systems in the Northeast were designed to supplement rainfall, while many of today's new systems are designed to meet turfgrass water requirements even in an extended drought. The key with irrigation is to make sure that sprinkler coverage and control are adequate. There are many possible causes of poor coverage in the approaches, but having incompatible sprinkler heads or nozzles on fairways and greens is a common problem. Similar problems result if sprinkler spacing is incorrect. Poor coverage can create drought stress and localized dry spots in one area, and unhealthy, disease-prone turf and soft surfaces in

adjacent areas. Neither type plays well. In some cases, sprinklers designed to provide coverage for the approaches overlap onto the putting greens, and this situation creates even more problems.

Careful analysis of irrigation coverage is the first step in developing a solution. In most situations, individual head control is strongly recommended for greens and approaches so that the water requirements of the turfgrass can be met more accurately.

Unnecessary Obstacles

How many times have you seen unsightly valve boxes or sunken sprinkler heads right in the middle of an approach in front of a green? It isn't always possible, but try to avoid locating valve boxes or drainage grates in approaches where they might affect play. Soil settlement after irrigation or drainage work sometimes results in unsightly depressions that also can impact play. These areas should be leveled, as should any sprinkler heads that are located in approaches. The objective is to reduce their chances of affecting play.

Turfgrass Varieties

Approaches may be comprised of a mixture of different grasses, often a result of turf loss, grass conversion programs, or changes in mowing patterns. A mixture of bentgrass and annual bluegrass is the norm for fairways in the Northeast, but ryegrass also may be used in fairways and/or roughs. The darker color and different growth habit of the ryegrass can create a clumpy and mottled appearance if it is not present in sufficient quantity. This can be unattractive and can affect play.

Developing a better playing, consistent, and more reliable stand of turf in approaches is much the same as it would be for any other area of the golf course. Aerification, verticutting, and overseeding combined with proper fertility and water management generally are the keys to success. Sodding is always an option if the problems are severe enough and the desire to correct them is strong. Just remember that there are drawbacks to sodding, and the quickest solution isn't always the best. It is essential to use good quality sod. Sod with weeds, excessive thatch, or sod grown on an incompatible soil should be avoided. Choosing sod that is comprised of the same turfgrass varieties that exist in the fairways will help the new work blend better from an aesthetic standpoint. Proper timing of the work is important and will vary based on the climatic region and the turfgrass species being used.

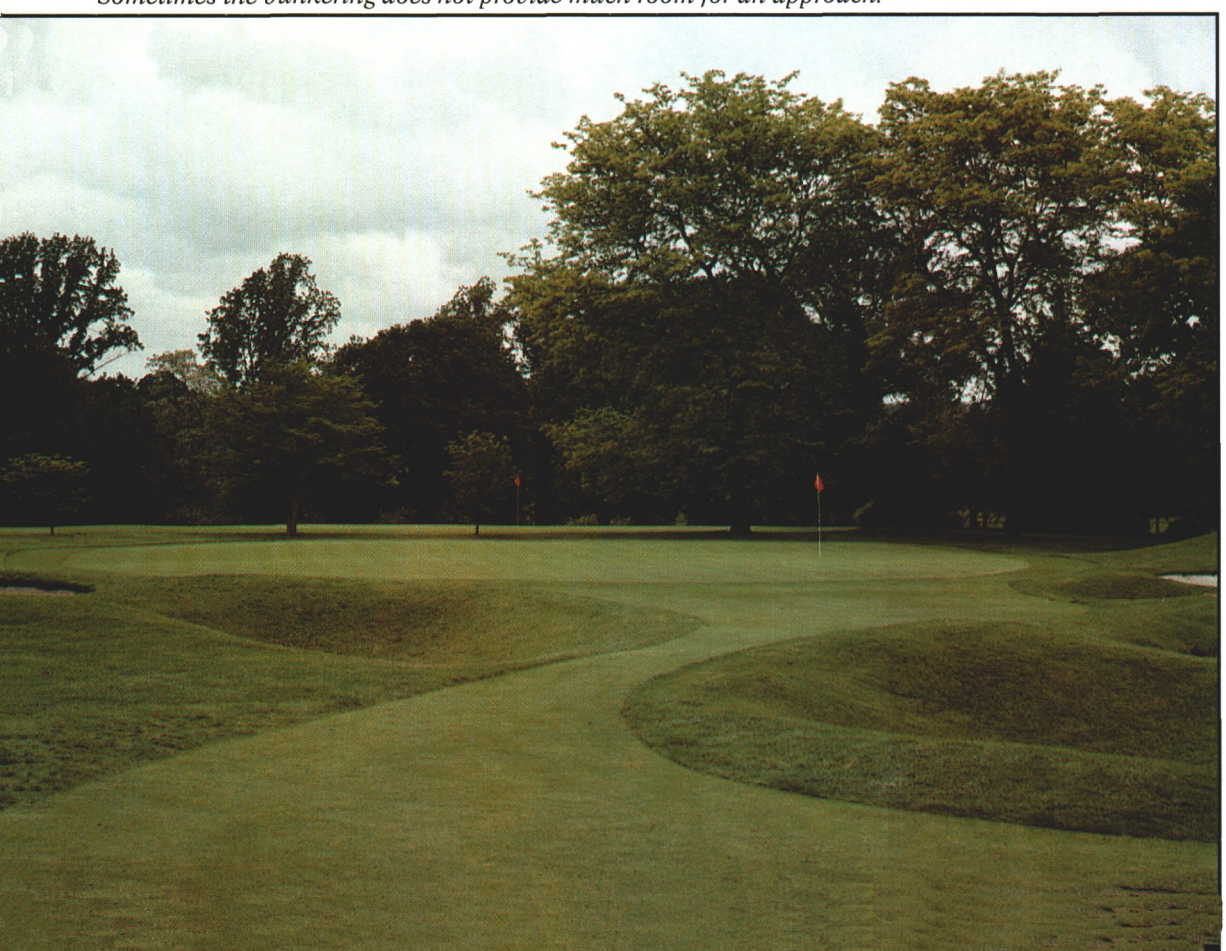
Traffic Patterns

Reducing traffic on approaches often is a key component in an approach improvement program, and you might be surprised by just how much traffic your approaches actually receive. Putting green mowers turn in the collar/approach area, approach mowers mow and make turns in them, and fairway mowers mow into and make turns on the approaches. Extremely narrow approaches may have even more problems with mower traffic. Throw in a little golfer traffic and it's no wonder that the turf sometimes suffers. Traffic and mowing patterns must be considered carefully and shifted regularly.

Conclusion

Taking the *bump and run* shot away from the golfer by pinching in the approaches or allowing them to become soft and spongy can unfairly penalize the golfer and detract from the design of a hole. Unfortunately, it seems that irrigation systems, the L-wedge, and televised golf have erased the *bump and run* shot from the repertoire of most golfers, and that truly is a shame. The low running shot has been a wonderful part of the game since its inception. It requires great skill and calculation, plus it is fun to play. More importantly, many courses, especially some of the older ones, demand that it occasionally be played. If you have questions about how your approaches should play, consult your Green Section agronomist during your next Turf Advisory Service visit or discuss your concerns with a competent golf course architect. Proper maintenance of approaches can put a wonderful shot back in your golf bag and add to the enjoyment and variety of how a golf hole plays.

Sometimes the bunkering does not provide much room for an approach.



DAVID OATIS *joined the USGA Green Section staff in 1990 as agronomist for the Mid-Atlantic Region. He currently serves as director of the Northeastern Region.*

TW-72: A Potential New Bermudagrass For Golf Greens

A bermudagrass for golf greens that can be mowed at 1/8-inch may be released soon!

by DR. WAYNE W. HANNA

THERE HAS BEEN a growing concern about the existing hybrid bermudagrasses used for putting greens in the Southern portions of the United States. Historically, bermudagrass has been the dominant putting green turfgrass for Southern courses, given its superior heat, traffic, and disease tolerance. Tifgreen and Tifdwarf, released by Dr. Glenn Burton in 1956 and 1965, respectively, initially provided acceptable putting surfaces when Southern greens were mowed at 3/16-inch or higher. But as demands on bermudagrass greens have increased in an effort to provide putting green quality comparable to bentgrass, problems with bermudagrass have become serious. Tifgreen won't hold up at mowing heights lower than 3/16-inch and is practically never used on greens in the Southeast today. Tifdwarf is the present industry standard, but this variety cannot tolerate today's lower mowing heights, demanded by golfers, for any extended period of time without decline. Mutation, contamination, and a lack of reliable planting stock also have resulted in golf superintendents and golfers losing faith in one of golf's most important turfgrass species.

Even if golfers would allow golf superintendents to mow the existing varieties at a higher height, everyone agrees it will be difficult to clean up the existing Tifdwarf and Tifgreen planting stock. Additionally, it is dangerous to have only two genotypes on all of the golf courses in the South. Development of genetically different, fine-textured genotypes would lessen the threat of the industry not having a suitable grass to plant if either Tifgreen or Tifdwarf suddenly became susceptible to a pest. By focusing on the development of new dwarf varieties and protecting their purity through new tougher certification standards, better bermudagrass greens for golf would result.

Breeding Program Objectives

In the mid-1980s, a bermudagrass breeding program was started at the Tifton, Georgia, Experiment Station to develop a new dwarf bermudagrass that would maintain good putting green quality at a 1/8-inch (or less) cutting height. After considering the possibilities for developing such a putting-green bermudagrass, we arrived at three alternatives: 1) select or induce (with radiation) finer-textured types in Tifdwarf; 2) make new *Cynodon transvaalensis x C. dactylon* crosses to produce new triploid hybrids; or 3) induce fine-textured mutants in an established cultivar such as Tifway 2 (released in 1981) that has been known for its heat tolerance and disease resistance. We decided to try the third procedure since much is known about this popular hybrid bermudagrass used on fairways, roughs, and tees. Two other benefits of working with Tifway 2 would be that the genetic diversity of bermudagrass greens would be increased by this method, and the time needed for testing would be reduced. On January 10, 1988, we irradiated dormant stolons of Tifway 2 with 7000 rads of gamma radiation. Sixty-five mutants were induced, 25 of which appeared more dwarf than Tifway 2. One of these, the most dwarf, we named TW-72.

Detailed Description of TW-72

TW-72 has several new agronomic qualities compared to Tifdwarf that should make it very popular with golfers and golf course superintendents. Although TW-72 has a lighter green color than Tifdwarf, it doesn't become as purple or red when nights become cool, since it lacks the red pigment of Tifdwarf. It produces a tighter and denser turf than Tifdwarf, especially at the 1/8-inch mowing height. Its close mowing tolerance produces a smoother, faster surface, and one with less algae growth. TW-72 had a Stimpmeter reading approximately 12 inches faster than Tifdwarf at The Landings Golf Club (Savannah, Georgia) test site last summer. At 1/4-inch, there may be less difference in turf quality between TW-72 and Tifdwarf, but our recommendation will be to mow TW-72 at 1/8-inch. Plenty of leaf tissue remains on this super dwarf even at the 1/8-inch mowing height compared to Tifdwarf. TW-72 tends to produce more thatch (because of the higher plant density) than Tifdwarf, but this can be controlled through verticutting.

Dr. Jeff Wilson observed more dollar spot on TW-72 than on Tifdwarf when plots were low on nitrogen, but no disease has been observed at Tifton on TW-72 when the grass received ade-

One test site to evaluate TW-72 is the practice putting green at Banyan Golf Club in West Palm Beach, Florida.

quate nitrogen. TW-72 appears to produce a stronger root system when growing on either a soil-based green (Tifton, Georgia) or a USGA-type sand green (Savannah, Georgia). We also have observed fewer mole crickets on TW-72 than on Tifdwarf at Tifton and at Savannah. At this point we cannot say whether the fewer mole crickets on TW-72 is due to non-preference, genetic resistance, or both. TW-72 did not appear to tolerate shade any better than Tifdwarf on the practice green at West Palm Beach, Florida.

Testing Sites

TW-72 has been compared with Tifdwarf on a practice green or in replicated plots at the University of Florida Fort Lauderdale Research and Education Center by Dr. Monica Elliott; The Landings in Savannah, Georgia, by Ralph Hinz; Pinehurst Resort and Country Club in North Carolina by Tommy Brown; Banyan Golf Club in West Palm Beach, Florida, by Dan Jones; and in five tests at the University of Georgia Coastal Plain Experiment Station in Tifton, Georgia. Now TW-72 has been planted on greens by Bryan Unruh, University of Florida-IFAS, Jay, Florida; George Manuel, Pine Forest Country Club, Houston, Texas, where it is compared with Tifdwarf; and by Rodney Lingle, Memphis Country Club, where it is compared with Tifgreen. Dr. Richard White, Texas A&M University, College Station, Texas, is including TW-72 in a replicated test where many new dwarfs will be compared. Plans are being made to plant TW-72 this summer on greens in South Carolina, Florida, Alabama, and some Western U.S. states. The purpose of testing at multiple locations is to decide how broadly adapted TW-72 is to diverse environmental and management conditions when it is mowed at 5/32- or 1/8-inch. Data will be taken on such characteristics as turf quality, color, pest resistance, overseeding response, and response to various environmental and management conditions.

Stay Tuned

Overall, we are very pleased with the initial comments from golfers and golf course superintendents about TW-72. Testing at more sites will be done over the next two years to learn more about its range of adaptation. If it continues to perform well in these tests, a foundation field will be established near Athens, Georgia. If TW-72 is released, it will be a limited release to only a few selected growers. Growers will be given strict guidelines on the maintenance of the sod and sprig fields to maintain the integrity of the variety. No off-type bermudagrasses will be allowed in the certification fields, and if some are observed, these must be removed immediately. Golf courses probably will pay a lot more for TW-72 because of the inspection costs and the requirements of growers to do more to maintain the fields.

TW-72 is a bermudagrass with bentgrass putting-green-type qualities. TW-72 appears to be a strong potential new candidate for those Southern golf courses desiring to provide the best possible bermudagrass putting surfaces. We plan to release TW-72 at the end of 1997 or beginning of 1998 if it continues to do well in tests.

DR. WAYNE HANNA *is a research geneticist with the USDA-ARS at the University of Georgia Coastal Plain Experiment Station. He conducts breeding and genetics research on warm-season turf and forage grasses.*

KEEPING AN EYE OUT

Managing water quality on golf courses.

by RON DODSON

GOLF COURSES can play an important role in the quality of our water resources. Concern about the use and overall health and vitality of our water resources is important to everyone and has been a major factor in the management of existing golf courses as well as in the permitting of new courses.

Properly sited, designed, and maintained golf courses can positively affect the quality of water both on and off the course. The proper design, construction, and buffering of water features ensures adequate protection of ground and surface waters. In addition, golf courses can play an important role in protecting and improving the water quality of entire watersheds.

A water-quality monitoring program should be put into place to document positive results and to provide early warning of any possible problems. Monitoring programs may consist of simple testing of pH, dissolved oxygen, or even macroinvertebrate surveys. Some programs include more complex analysis for water chemistry and pesticide and nitrate residue testing.

Establishing a water-quality monitoring program is good environmental insurance. Some courses with streams have documented water-quality improvement as the stream leaves the golf course property, as compared with the water that enters the property. This kind of result not only documents a *no negative impact* resulting from course management, but an actual improvement of water quality that will benefit the greater community.

All golf courses should review their water-quality management practices and establish ongoing water-quality monitoring programs. The following golf courses (all fully certified in the Audubon Cooperative Sanctuary Program for Golf Courses) provide good examples of strategies for water-quality monitoring plans.

Dr. Bud Smart (left) of Audubon Conservation Services trains the Carmel Country Club staff in taking water samples.

Carmel Country Club (Charlotte, North Carolina)

Superintendent Hank Kerfoot has worked diligently to establish an effective water-quality testing program. He and his staff monitor water quality by regularly scheduled, comprehensive testing. Dr. Bud Smart (Audubon Conservation Services) developed a long-term plan for testing water quality at Carmel Country Club in Charlotte, North Carolina, after a site visit with Hank and his staff. The plan consists of sampling and analyzing surface water, groundwater, and sediment. Testing for pesticides also will be included based on the type of pesticide and time of year it is applied.

To reduce impacts to surface waters from course management practices, 20-foot *no-spray* zones were delineated around all water bodies where only hand-weeding is allowed. In addition, 15-foot vegetative buffers have been established alongside streams. The installation of a recycling system for the wash area and separate storage tanks for sprayer rinsate are also slated for the future.

Minikahda Club (Minneapolis, Minnesota)

Vegetative buffers have dual value: They provide valuable cover and food

for wildlife and they filter any runoff that may occur from the course before it enters the water features. The Minikahda Club has done an exemplary job of creating vegetative buffers around all water features, including three ponds and the entire length of a creek on the property. Not only do vegetative buffers exist along water features, but they are contiguous for approximately 500 yards, creating a valuable wildlife travel corridor.

One reason for the development of this strong water-quality management plan is the location of nearby Lake Calhoun, a popular swimming and fishing lake located within 600 yards of the course property. In addition to an extensive water-quality testing program conducted through Hennepin County, the course also has been chosen as one of four Twin City Metro golf courses to participate in a comprehensive study of water quality administered by the Hennepin County Water Quality Management office. To further help improve the quality of the creek that flows through the golf course, three ponds were constructed along the creek to provide flood control, increase filtering, and act as a sediment catch.

Baker National Golf Course (Medina, Minnesota)

This golf course has done an excellent job of restoring wetlands on the course and creating vegetative buffers around these specialized areas. Many of the wetlands on the property had previously been drained for agricultural purposes. These wetlands were restored, and Keith Greeninger, course superintendent, has worked hard to maintain extensive vegetative buffers that were allowed to grow around the wetlands to reduce any potential impacts from course maintenance practices.

Water-quality testing is another important issue at Baker National Golf Course due to its location along Spurzen Lake, a 70-acre lake that is commonly used for swimming and other recreational activities. About 80% of the course runoff drains into this lake, making the quality of the water leaving the course a vital concern. The first component of the course's water-quality program is regular monitoring of the water quality of course water features, including Spurzen Lake itself. Water monitoring stations sample nitrogen, phosphorus, pH, conductivity, heavy metals, herbicides, and fungicides. Long-term monitoring of leachate passing through a green also was used to determine appropriate adjustments in fertilizer use on the course. Finally, aeration, not chemical additives, is used to control any pests in water features to eliminate the use of pesticides and other chemicals in water features.

RON DODSON, *president of Audubon International, located in Selkirk, New York, travels extensively to visit golf courses involved in the Audubon Cooperative Sanctuary Program for Golf Courses and the Signature Program.*

This aerial view of a restored wetland at Baker National Golf Course demonstrates the vegetative corridors that interconnect the wetland areas, providing valuable wildlife travel routes.

Paul Vermeulen

Vermeulen to Head Up Mid-Continent Region

Paul Vermeulen has been selected to assume the position of Director, Mid-Continent Region, left vacant by Jim Moore's move to the USGA's new Construction Education Program.

Paul brings a wealth of experience to his new position, having served as agronomist in the Western Region from 1987 to 1995 before relocating to the Mid-Continent Region last year. During his time in the Western Region he also assisted other regions in making Turf Advisory Service visits, making him one of the most widely traveled agronomists on staff. While overseeing the activities of the Mid-Continent Region, he will concentrate his TAS efforts in the states of Iowa, Illinois, Missouri, Kansas, and Nebraska. Joining him to make TAS visits in the southern half of the region will be Brian Maloy.

Since joining the Green Section, Vermeulen has made more than 1,000 TAS visits throughout the country, written extensively for trade publications, and spoken at countless meetings and conferences. An undergraduate of Michigan State University, this Michigan native also received a Master of Science degree in Agronomy at Texas A&M University under the direction of Dr. James Beard. Paul will direct the region's activities from his current office in Mahomet, Illinois. The voice you hear answering the office telephone is his Office Coordinator and wife, Julie.

James Moore Takes the Lead on New USGA Program

James Moore, former director of the Mid-Continent Region of the USGA Green Section, has been named to the newly created position of Director, Construction Education Programs.

The program will begin by emphasizing the development of educational

James Moore

materials and seminars related to green construction issues and will expand to include golf course construction issues of all types. The format will take a *train-the-trainer* approach for golf course architects, builders, developer representatives, and golf course superintendents facing either new course construction or extensive renovation.

Jim served as director of the Green Section's Mid-Continent Region starting in 1985. During that time he completed more than 1,200 Turf Advisory Service visits, authored more than 50 articles in various magazines and books, and delivered more than 175 educational lectures and seminars. In addition to Jim's Bachelor of Science degree in Agronomy from Texas A&M University, he worked as a golf course superintendent and has extensive hands-on experience in golf maintenance and construction issues.

Jim brings to the Construction Education Program a love for public speaking, computers, and the science behind golf course construction to lend to his new role with the USGA. Jim will continue to work out of his office in Waco, Texas.

Brian Maloy

Brian Maloy Joins the USGA Green Section

The USGA is pleased to welcome Brian Maloy as the newest agronomist on the Green Section staff. Brian will join Paul Vermeulen in the Mid-Continent Region and will provide Turf Advisory Service visits primarily in the states of Texas, Oklahoma, Arkansas, Louisiana, and New Mexico.

Brian has extensive experience in the turfgrass industry, and for the past ten years he has been located in Texas. Most recently, he managed operations as the construction superintendent at Great Southwest Golf Course in Grand Prairie, Texas. He oversaw the $1.3-million renovation and management of the private 18-hole golf course, including its new USGA greens, total bunker renovation, irrigation system upgrading, and many other aesthetic improvements.

Prior to his management of Great Southwest Golf Course, Brian spent time at Indian Creek Golf Course in Carillon, Texas, before moving on to the superintendent position at Oakridge Country Club in Garland, Texas.

An Iowa native, Brian studied at Iowa State University in Ames, Iowa, where he received a Master of Science degree in Horticulture and Bachelor of Science degrees in Agronomy and Horticulture. Brian and wife Maureen have two daughters, seven-year-old Mallory and 3-year-old Alliene. He will be based in Dallas, Texas.

Physical Soil Testing Laboratories*

The following laboratories are accredited by the American Association for Laboratory Accreditation (A2LA), having demonstrated ongoing competency in testing materials specified in the USGA's Recommendations for Putting Green Construction. The USGA recommends that only A2LA-accredited laboratories be used for testing and analyzing materials for building greens according to our guidelines.

Brookside Laboratories, Inc.
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Attn: Mark Flock
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(419) 753-2949 FAX

Thomas Turf Services, Inc.
1501 FM 2818, Suite 302
College Station, TX 77840-5247
Attn: Bob Yzaguirre / Jim Thomas
(409) 764-2050
(409) 764-2152 FAX

*Updated Sept. 1, 1996. Please contact the USGA Green Section (908-234-2300) for an updated list of accredited laboratories.

DON'T KID YOURSELF

*What's really **number one** in your life?*

by R. A. (BOB) BRAME

WE LIVE in a society that tells us our worth is determined by what we do — how we earn a living. We judge ourselves and others based on career position and performance. Although our jobs and performance are important, they are not the most important measuring stick. I would submit to you that life is about people. Relationships! How we interact with those around us.

Without question, golf is a great game. We all like playing the game, and every golf course superintendent enjoys the challenge of working with Mother Nature to condition the playing field. However, think about the *big picture*, which stands the test of time. How many of the golfers who play your course today will remember its condition five years from now? "Too long a time period," you say. "How could they?" Fine, how about five weeks, or even five days? In reality, golf course superintendents are evaluated each day about current conditions. Yesterday is gone, and it means very little in golf course management. How many of us remember the condition of the course upon which the U.S. Open was played ten years ago? How about five years ago? Maybe a few people remember a couple details about past national championship sites, but for most golfers such factors fade quickly.

Don't get me wrong. We should all take pride in our jobs and what we accomplish day to day. However, recognizing that some golfers can become a little obsessed and even emotional about course conditions, it's easy for the superintendent to get backed into a corner. The view from that corner would suggest that if the greens were a little faster or smoother, or the bunkers firmer, or the fairways greener, or . . . , everyone would be happy. It won't happen. There will always be something else, something more that someone wants. Do your best and go home. It's those nurtured relationships with family, friends, and golfers that endure and make a long-term difference, not golf course conditioning. Make sure your top investment is in what will still matter in five days, weeks, or years.

What's more important, the conditioning of the course or the people who play and/or maintain it? Golf is a wonderful game immersed in rich tradition, but neither the game nor the greatest of courses matches the beauty and value of nurtured relationships.

I can recall thoughtful deeds of others, directed toward me, from as far back as my memory takes me. How about you? Golf course conditioning comes and goes, even for the most experienced superintendents. The 1995 season confirmed this fact and brought to mind a statement most of us have heard. "There are only two types of superintendents — those who have lost grass and those who will." How true! We all want to avoid losing grass and the emotional outcry that goes with it; however, life isn't really about keeping the perfect golf course.

There are 51 references containing the word "grass" in the Bible. These references cite conditions that range from flourishing to withering. When studied more closely, the Biblical references to grass underscore something we all know, but don't like to think about. Like grass, our days are numbered. In 1 Peter 1:24 we find these words: "All men are like grass, and all their glory is like the flowers of the field; the grass withers and the flowers fall, but the word of the Lord stands forever." Truly, life is a precious gift! A gift we can use either for things that endure or wither and fade.

Remember, don't kid yourself. Life is not about the game of golf or course conditioning.

BOB BRAME *is the director of the Green Section's North Central Region.*

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Turfgrass Information File (TGIF):
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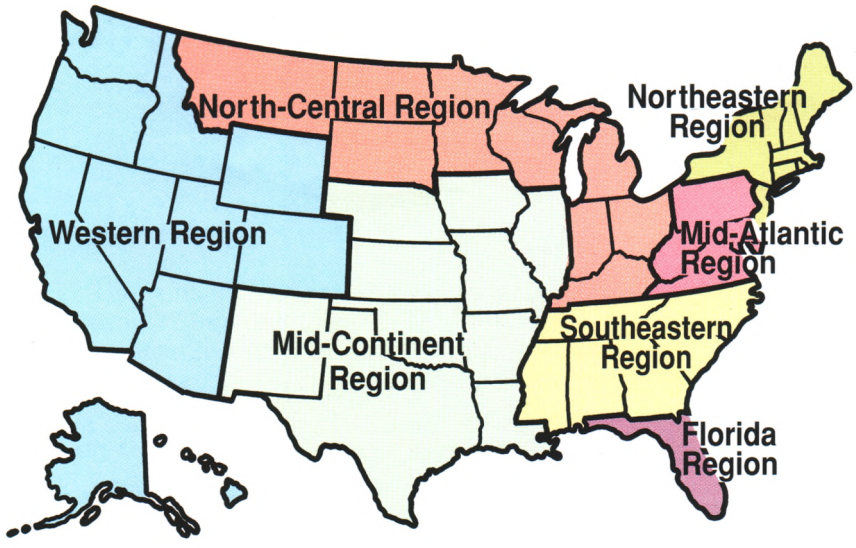

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TURF TWISTERS

RECOMMENDED

Question: Occasionally, I see advertisements for USGA-approved topdressing sand that meets USGA specifications. We are about to undertake an extensive renovation project and my Green Committee wants to use USGA-approved materials. Is there USGA-approved topdressing, and where can I find it? (Wisconsin)

Answer: The USGA neither tests nor approves products and materials for use in bunkers, tees, or green construction. A blend of sand, peat, or soil must pass a number of standardized tests that include sand particle size distribution, moisture-holding capacity, percolation rate, organic matter content, and other criteria before it meets USGA-recommended guidelines. The straight sand in these advertisements is simply passed through a set of screens to determine whether it meets one of the many criteria necessary to meet USGA recommendations. Keep in mind that sand is only one component of the construction mix, which must be thoroughly blended and tested before it meets USGA guidelines. The USGA does not *approve* products or materials, and we try our best to ensure that advertisements don't appear with this label. If you see such an ad, please send it to our attention.

REGULAR SERVICE

Question: We've recently installed a new pump station at our golf course. It was a major investment and we would like to maximize its potential. Is there a standard service schedule for pump stations? Please advise. (West Virginia)

Answer: Frequency of inspection has a great deal to do with water quality. Naturally, regular maintenance such as lubrication should be performed throughout the year. With regard to pulling the pumps and motors and sending them out for service, a three- to five-year interval is suggested. The servicing interval will be more frequent if there are high levels of particulates in the irrigation water. Wear can occur rapidly, and the efficiency and effectiveness of your pump station will be adversely affected. Many times, minor adjustments can be performed to maintain and enhance pump performance. Establish a maintenance schedule now to achieve the pump's full potential.

EMPHASIZES THE POSITIVE

Question: Will effluent water have any negative effects on my winter overseeding practices? (Nevada)

Answer: There are some positives and negatives associated with using effluent water in overseeding. Since effluent water typically contains higher salt levels (TDS), you can expect a slightly lower germination percentage. You may want to increase your seeding rate by 10% to 20% to compensate for the reduced germination. Overseeded grasses (e.g. perennial ryegrass and *Poa annua*) have a lower salinity tolerance than bermudagrass, so it is important to have a good aerification and leaching program in place to avoid poor growth due to salinity buildup in the soil. On the plus side, most effluent waters contain nitrogen and phosphorus that will aid in the growth of the seedlings during establishment.