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fairway rough and lake banks. The height of cut is between .75 and 1.125, depending on the weather and time of year.

For our large areas of turf we use two Toro ground-driven seven-blade pull-behind rough units. We have chosen this type of unit due to its dependability, lack of major hydraulics and its weight.

The operators mow their own nine first and then switch over to mow the other nine. They double cut in areas where they can maneuver. Two mowers are necessary in our situation to provide a level playing surface so that the ball sits on the grass instead of in it. This helps keep our rough tight most of the year.

For all other bermuda turf areas where the pull-behinds cannot mow, such as areas between the sand bunkers and the green or sand bunker fingers, we use a four-wheel drive Toro 3500 diesel mower.

Although this mower is large and has major hydraulics, it provides an exceptional cut when operated properly. The operator must be cautious using this mower on slopes and around tree rings to

prevent a tire burn on the turf. We have found that with this piece of equipment it is best to have only one dedicated operator.

Our greens are Tifdwarf bermuda that are maintained between .156 to .125, depending on the time of year, weather conditions and overseeding with 100% Poa Trivialis.

The greens are hand-mowed approximately 300 days of the year. They are not mowed on Mondays, giving them a day of rest and also enabling us to fertilize, verticut, topdress, etc. We own eight Toro Greenmaster 1000s with four of them being used daily and the other four as backup and for special tournaments.

The change to walkmowers was made in 1992 in order to eliminate the triplex cleanup tire ring and to prevent hydraulic leaks. All mowing is done in the early morning unless we are in the beginning of our overseeding, when we start mowing about 10:00 a.m. dry with no baskets, so as not to pick up seed.

Perimeters are mowed four out of the

six days, depending on stress conditions. The direction of cut is changed daily using the clock method. Our Saturday cut is 6-12, also known as the "tournament cut."

For special tournaments we will double cut and/or roll to accomplish the desired speed. We always mow with baskets except the day after granular fertilization. Operators are also instructed to empty their buckets frequently, especially before making their perimeter pass.

Throughout the year we use PGRs, especially on fairways in the rainy summer months. They are also used on bunker edges and tee tops. We recently used them on our greens at low rates to help with the mutations and contamination.

We were happy with the results and have now made PGRs a part of our overall maintenance program in order to help reduce mowing.



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FGCSA Turf Research Update

For years the FGCSA has had a very active committee involved in bermudagrass research specific to golf courses. We have been involved with the University of Florida's Fort Lauderdale Research and Education facility and have supported our technician, Marcus Prevatte, who is responsible for upkeep of the bermuda observation plots.

Our yearly expenses for this operation range between \$25,000 and \$30,000 and we have enjoyed a great relationship with Dr. Monica Elliott, Dr. David Buchanan, Dr. John Cisar and all of the additional support personnel at the experiment station.

The funding for this project has predominantly come from the following sources

1. Proceeds from the Turf Expo sponsored by the South Florida GCSA.
2. Various donations by other FGCSA chapters.
3. Proceeds from fund raising golf tournaments.
4. Donations of cash or materials from companies.
5. Revenue from rebate programs like CIBA, GASH, Valent and Dow Elanco.

This year we have added the involvement of the Florida State Golf Association which promotes amateur golf and golf related services.

The financial philosophy of the committee has been focused around two goals which are to keep a year's worth of operating expense in reserve and encourage participation from companies if we are involved with product evaluation.

Another goal has been to keep a core group of individuals intact and add people when the situation warrants or people with an interest. The benefits of this program have been tremendous but there comes a time for change within the committee and a reevaluation of our state-wide programs.

Starting in the Fall of 1996, we have combined a majority of the individuals from the FGCSA Research Committee into the FTGA Awards (Research) Committee. They will still be two separate bodies, but there will now be a strong emphasis on continuity as we enter a new era of cooperation with the University and the turf industry.

With the advent of the Envirotron in Gainesville and the new research facility in Milton, Florida, we will be called upon to assist these new programs. As part of this new-found enthusiasm for turf throughout the state, the FTGA has begun working with IFAS to encourage hiring an overall turfgrass coordinator who can better serve the industry and the University.

Speaking as an 18-year volunteer, this kind of coordination should enable our industry to gain more valuable information with a lot less confusion. Funding the right individual will not be an easy task. In the meantime, Dr. Jerry Sartain will be working with the FTGA and the FGCSA to implement this cooperation between the associations.

The following is a suggested time frame for reviewing industry needs:

December— Committee meets with coordinator to discuss research needs and industry problems.

January— Requests for proposals are distributed to the University Experiment Station. Budget amounts are set by the committee.

February— Proposals are submitted and in turn distributed to committee members.

March— One day proposal review meeting. Proposal presentations by researchers. Breakout

meetings. Awards committee convenes for discussion and final decisions. Researchers meet with coordinator to discuss concerns. Discussions and approvals. Group discusses approved projects and ones that need further work for re-submission next year.

July — Experiment station to provide executive summary of ongoing projects and mail to committee members.

August or September — Researcher presentations at initial session of annual FTGA Conference.

We don't have all the answers, but at least a good first effort is being implemented to improve the current situation. One hurdle we will still need to cross is the industry requests for more product evaluation and how this fits into the University format.

Please give me a call for questions or comments.

K. D. Downing
FGCSA Research Committee Chairman

Editor's Note: Congratulations are in order! Kevin Downing was recently elected to the Board of Directors of the Florida State Golf Association. With this organization also involved in funding turfgrass research via the Cal Korf Turfgrass Research Program we now have strong representation in all major turf research efforts in the state.

ETHICS (*eth' iks*) *n.pl.* 1. *The principles of honor and morality.* 2. *Accepted rules of conduct.* 3. *The moral principles of an individual.*

"Morals are an acquirement — like music, like a foreign language, like piety, poker, paralysis — no man is born with them." — Mark Twain

That is the literal definition of the word, to clarify its meaning for each of us. The quote may be telling each of us that we must work at achieving and upholding morals, or ethics, such as our code of ethics for the Greater Detroit GCSAA.

On par with the President

Pertaining to that code of ethics, its interpretation and all of its ambiguity, allow me to present three fictitious scenarios that each of us could find ourselves involved in at any time during our careers as golf course superintendents. These three scenarios may or may not involve ethical or moral questions. You be the judge. Ethical questions can be

interpreted and argued by both sides of a conflict until each is blue in the face. In my humble opinion, there are simply too many excuses that can be dreamed up to explain away a question of individual morals or ethics when a much wanted, or much needed, job is available.

So as you read on you will find that I personally only have one thought on the matter of ethics — it is one simple idea. An idea that may enable us to prevent and to solve many of the problems associated with our code of ethics. An idea to put an end to the useless and often harmful rumor mills. An idea to, in the long run, strengthen professional ties amongst us all. I am certain there are many other possible ideas as well. This is just my one simple idea. I urge you to please consider its use. Its potential benefit could someday be realized by each and every one of us.

Scenario #1: Paul Annuia has been an assistant superintendent for three years. A head superintendent position that he feels qualified for is rumored to be available, but has yet to be

publicly advertised as open. Paul decides he would like to apply for the job. Before Paul proceeds any further, what should he do? Answer: Call the present superintendent.

Scenario #2: Harry Roote is a successful and well-known superintendent, employed at his present position for nine years. One day a member of the board of directors at a nearby country club plays golf at Harry's course and is duly impressed with the playing conditions. The member tracks Harry down on the golf course and proceeds to tell him that his club is very disappointed with its present superintendent and that they are letting him go. He further states that he has the ability to hire a replacement and asks Harry if he would like to have the job. Before Harry proceeds any further, what should he do? Answer: Call the present superintendent.

Scenario #3: Dolly Spot is a golf course superintendent who has a friend who owns a golf course across town. The friend just recently purchased the course and doesn't have much, if any, experience with the golf course industry. Since Dolly is a friend and has much experience with golf course management, the owner looks to Dolly for advice. He asks Dolly to visit the golf course, take a tour, and give him any recommendations that she may have on the care and upkeep of the property. Before Dolly proceeds any further, what should she do? Answer: Call the present superintendent.

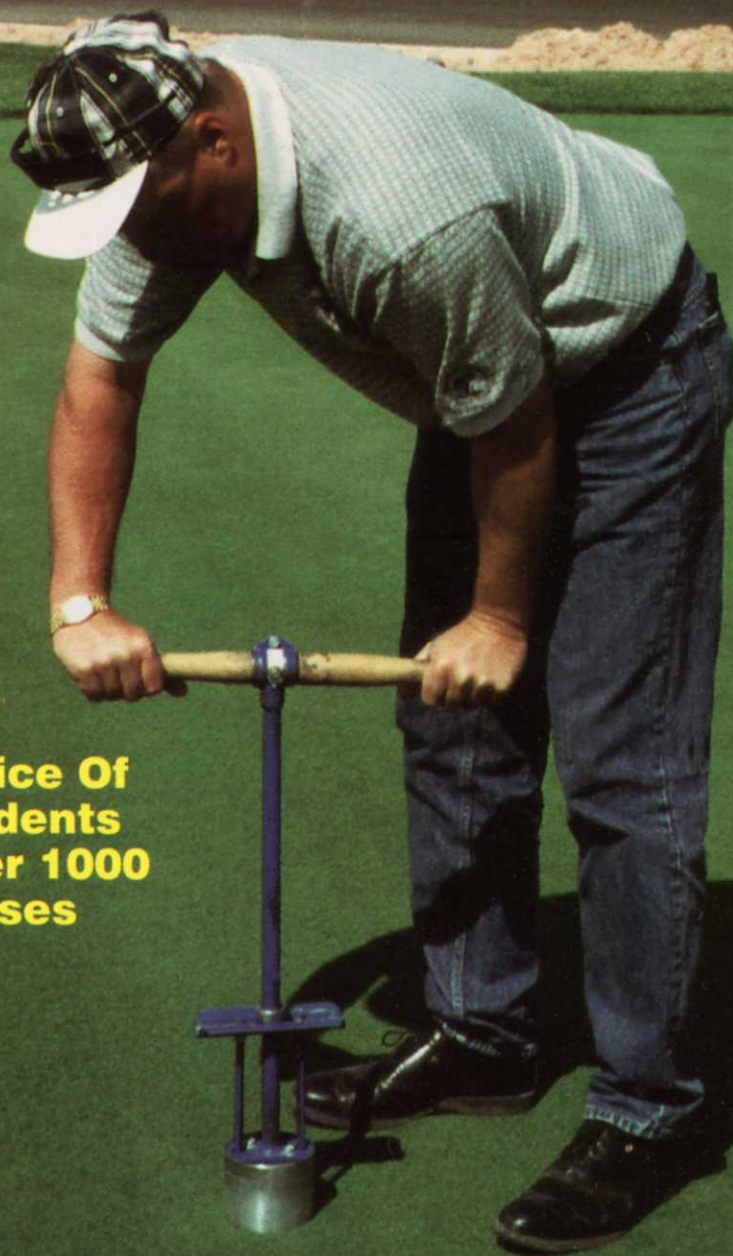
There you have it. That is my simple idea and my simple solution to 99.9% of all code of ethics dilemmas: Call the present superintendent. In each of the scenarios, a simple phone call could prevent an undesirable

Editor's Note Ethics vs job changes is always a thorny issue in our business where professional courtesy, personality, common sense, honesty and fairness all get tangled up with expediency, callousness and restraint of trade. I came across a simple straight forward attempt at educating others to the issue in Paul DuShane's President's Message in the Fall 1996 issue of Greater Detroit GCSA's newsletter, *The Patch of Green*. It's worth spreading around.

BY PAUL DUSHANE

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We could all do ourselves a favor to be as honorable and moral as we possibly can, whether pursuing job openings or offering a helping hand

situation from ever occurring. In scenario #1 and #2, Paul Annu and Harry Roote should call the present superintendent to:

1. Confirm that the position is open.
 2. Offer congratulations if the superintendent is leaving on his own accord, or condolences if the superintendent was let go.
 3. Question the superintendent on particulars about the position and the golf course.
 4. Ask for any advice or helpful tips.
- If unable to reach the present superintendent for some reason, such

as if he or she has already left the position, try phoning the individual at home if at all possible. Most superintendents will be happy to offer any information they can about a job.

Communication between professionals can prevent many undesirable situations and uncomfortable or untoward feelings from spoiling a potentially beneficial relationship. The worst thing that could happen would be for the individual to say "no." At least in your mind you will know you tried to communicate.

To conclude this statement about ethics and morality, please ponder the following quote and remember its meaning as you deal with your fellow golf course superintendents on a professional level: "I would rather be the man who bought the Brooklyn Bridge than the man who sold it." — Will Rogers

We could all do ourselves a favor to be as honorable and moral as we possibly can, whether pursuing job openings or offering a helping hand.

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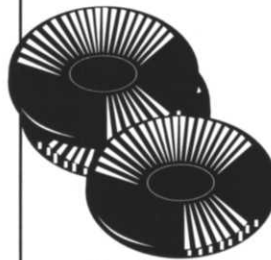


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Rub of the green Out of Bounds II

BY RANDY ASHTON, GCS

Southernness Golf Club

Having been in the golf course business for almost 20 years, I felt it was time to reward the people that have helped me survive its ups and downs.

The Agronomy Award: To the golfer who once stopped me while aerifying greens and insisted that I cease putting sand on the greens and start using soil instead.

Honorable Mention: To the individual who advised me that if I watered the greens for two hours every night during the summer, I would not have a care in the world.

The Health and Safety Award: To the obese golfer who approached me with a

beer in his hand and a cigarette dangling from his lip, demanding to know what I was spraying on his greens and if it would kill him years later. I assured him he had nothing to fear from any chemical I might spray.

Honorable Mention: To the golfer who plays golf because his doctor told him to get more exercise. This is the same fellow who always uses a golf cart to drive up to the slopes and park on collars. I have seen him get some useful exercise, however. He may spend five minutes or more trying to dig his golf ball out of the cup with his putter.

The "I Leave My Brains at Home When I Pick Up a Golf Club" Award: This is a tough one. I have noticed that when seemingly intelligent people get to the golf course their reasoning ability, eyesight and hearing leave them. How else do you explain a normal-thinking human looking directly at a yardage sign that states, in bold letters, "Wet Paint," then reaching out to touch the sign,

promptly becoming agitated, and expecting me to do something about it.

But this award, I believe, should go to the golfer who, after approaching a roped off area and squeezing through a two-foot walkway with his cart, kneels down and bends metal stakes and tells you, when confronted, that he thought the opening was for golf carts.

I cannot blame only golfers in this business, so my last award goes to some of my previous employees. I watched them do many strenuous tasks like laying sod all day in the August heat, weeding and edging bunkers and I tried to determine what the most distasteful job in this business actually was.

The Toughest Job in Golf Course Maintenance Award: To the employee who finds the act of pulling the dip stick out of an engine and checking it unbelievably loathsome.

Editor's note: Credit Georgia GCSA's magazine, Through the Green .

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Turf Trivia

Editor's note: Here's another installment in the series of little publicized or overlooked benefits of turf — golf or otherwise. I hope you take the opportunity to copy them and put them up on locker room or pro shop bulletin boards. It's an easy way for you to help educate the golfing public at the grass roots level.

Soil Building

Topsoil takes thousands of years to develop. It is lost quickly by wind and water erosion. Turfgrasses finger many fine rootlets into all crevices of the soil where they grow and as they decay, they turn clay into topsoil! Grass is the most effective plant in conditioning the soil.

Lawn grass roots are continually developing, dying off, decomposing and redeveloping. Every individual plant of Kentucky bluegrass produces about three feet of leaf growth each year under favorable growing conditions.

The average lawn produces clippings at the rate of 233 pounds per 1000 square feet a year. By leaving clippings on the lawn and allowing them to decay in place,

the equivalent of three applications of lawn fertilizer is made.

This process builds up humus, keeps soils microbiologically active and, over time, improves soils physically and chemically. Microorganisms in the soil feed on grass roots.

Worldwide grassland soils are best in terms of productivity. Grass improves the soil by stimulating biological life in it and by creating a more favorable soil structure for plant growth (*Hamm 1964*).

Erosion Control

Lawns protect our natural soil resource. Grass roots hold the soil in place, and grass leaves act as a covering to protect soil particles from blowing or washing.

Soil erosion is one of "the most pressing environmental issues facing the U.S. today. Nearly 6 billion tons of soil wash or blow away each year, a figure now exceeding the total amount of erosion experienced during the devastating 'Dust Bowl' years of the 1930s." This soil erosion costs between \$6 billion and \$16 billion per year. All of us share in paying this cost (*Payne 1987*).

Wind causes loss of soil by erosion of bare earth. The lighter soil particles, lifted by the wind and held in suspension as dust, create a safety hazard by reducing visibility. Soil particles that are larger may be dropped and deposited, and in the process act as abrasives. Even a 2-inch bare spot on the ground can be subject to



- Minimal damage to course.
- Minimal labor to replace bunker sand creates opportunity costs.

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erosion, so plant densities of at least 70% are recommended. A good turf cover meets this need.

The most common soil-eroding agent is water. The impact of raindrops on bare soil displaces the particles and causes them to mix with water and be carried away. The leaves and stems of grass plants cover the soil and intercept the raindrops. They also help to control runoff by interfering with the water as it flows across the ground, slowing the velocity and allowing water to infiltrate the soil (Hamm 1964).

Turfgrass roots penetrate into the soil and hold particles so that they are not lost by wind and water erosion. Fine fibrous roots make up an extensive, branched system that is characteristic of the grass plant. Up to 90% of the weight of the grass plant is in roots (Brown 1979).

Grass binds the soil more effectively than any other plant. One single grass plant grown under ideal conditions has a tremendous root system — 387 miles of roots (equivalent to the distance between New York and Montreal!) Howard Dittmer at the University of New Mexico estimated that a Kentucky bluegrass plant can have 2,000 root branches (Owens 1980).

Roots also loosen the soil and add organic matter, both of which increase soil permeability so there is less water runoff. The denser the cover, the more efficient the turf is in preventing erosion (Watschke 1987), and grass plants remove soil particles from silty water. Studies show healthy lawns absorb rainfall six times more effectively than a wheat field and four times better than a hay field (Anonymous N 1987).

Plant transpiration pulls water out of the soil, helping to keep the soil from getting waterlogged (Margolin 1975).

When new roads are being built, grass seed or sod is put in place as soon as the proper grade is made in an area to prevent soil erosion. The medians are often protected by grass even before the road surface is put down because without such protection, soil would move with wind and water and cover the roadway (Heady 1968).

Golf turfgrass in the United States protects two million acres against soil

erosion. Numerous golf courses have been built on old waste landfills, turning unproductive regions into useful sites and undesirable locations into desirable ones. This is direct land conservation plus conserving topsoil by grassing highly erodible land with turfgrass (Payne 1987).

Silt has filled many water systems around the world. The U.S. Soil Conservation Service found that reservoirs with

dams averaging 30 feet high often filled in completely with silt in 29 years. Grass areas protect soil from eroding and prevent the loss of lakes and reservoirs (Heady 1968). They also lessen the cleanup of drainage channels (Schery 1976). These water storage spaces are important for water supply and also provide desirable recreation areas.

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No Rhyme Nor Reason

BY JOEL D. JACKSON, CGCS

Last winter when I wrote the free verse editorial titled, *The Superintendent*, it generated more calls and comments than any other editorial I had ever written. One fellow superintendent even sent me a framed copy of it.

So this year, I thought I'd share some other verses I wrote about golf courses. Don't panic. This isn't a trend. Consider it a belated Christmas/New Year's gift from an editor who thanks you for the opportunity to write about what we do. I hope the following lines conjure a memory or two or give you pause for thought about this great profession.

Fairways

Broad shouldered and muscular
Like pack animals
The rolling fairways carry the burden of play
Without protest

Seldom pampered and often taken for granted
Serving their masters in silence
While the greens, like spoiled children
Clamor for attention

The fairways become like the eldest sibling
Having to rapidly mature beyond actual years
To help the golf course family
Withstand the daily assault on its character

Sometimes they receive honorable mention
For their yeoman service
But mostly, they leave the spotlight and adulation
To their little brothers, the greens

Take a moment and praise the fairways
They carry us from tee to green in such grand fashion
Never asking much in return
Just a little respect and dignity

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