MARCH 1975

USGA GREEN SECTION RECORD

A Publication on Turf Management
by the United States Golf Association

USGA GREEN SECTION RECORD

A Publication on Turf Management by the United States Golf Association

VOL. 13, No. 2 MARCH 1975

Published six times a year in January, March, May, July, September and November by the UNITED STATES GOLF ASSOCIATION, Golf House, Far Hills, N.J. 07931. Subscriptions: $2 a year. Single copies: 35c. Subscriptions and address changes should be sent to the above address. Articles, photographs, and correspondence relevant to published material should be addressed to: United States Golf Association Green Section, P.O. Box 567, Garden Grove, Calif. 92642. Second class postage paid at Far Hills, N.J. and other locations. Office of Publication, Golf House, Far Hills, N.J. 07931.

Dr. Fanny-Fern Davis received the USGA Green Section Award for Distinguished Service to Golf Through Work with Turfgrass. With her are Alexander M. Radko, Eastern Region Director, and Elbert S. Jemison, Jr., Chairman of the USGA Green Section Committee.

1975 GREEN SECTION EDUCATION CONFERENCE
Economony Measures for Survival

Dr. Fanny-Fern Davis 15th Recipient of USGA Green Section Award

Dr. Fanny-Fern Davis with her daughter, Mrs. R.B. MacWhortor, and husband, Dr. Everett Davis.

Dr. Fanny-Fern Davis of Valparaiso, Fla. accepted the 1975 USGA Green Section Award on January 24 at the Association's Annual Conference on Golf Course Management. The presentation was made by Harton S. Semple of Sewickley, Pa., President of the USGA, and Elbert S. Jemison, Jr., of Birmingham, Ala., Chairman of the Green Section Committee, in New York City.

The delightful Dr. Davis is the first woman to receive the Green Section Award, given in recognition of distinguished service to golf through work with turfgrass. She was accompanied to the presentation by her daughter and husband. The audience of over 500 gave her a standing ovation. Her work in the control of broadleaf weeds ushered in an entirely new era in golf course maintenance.

From 1943 through 1945, Dr. Davis was Acting Director of the USGA Green Section and at the time conducted experiments with the then new plant hormone regulators. Her work with turfgrass was certainly significant. The chemical 2,4-D (2,4-Dichlorophenoxacetic acid) became widely used for control of dandelion, plantain, chickweed, dock, buckhorn and other weeds. Indeed, golf course maintenance has never been the same.

Dr. Davis recalled those early days of 2,4-D research. Huge outdoor bonfires had to be built under oil drums in order to melt the wax in which 2,4-D was then dissolved. The first experiments to kill broadleaf weeds with it in grass were conducted on the fairways and tees at Chevy Chase Club in Washington, D.C. The work grew and additional testing was carried out by experiment stations throughout the country. Dr. Davis paid particular tribute to the research stations at Penn State, New Jersey, and Rhode Island. She recalled fondly her association with Fred H. Williams, Drs. John Monteith, Jr., and Fred V. Grau of earlier Green Section days, and Herb and Joe Graffis of *Golfdom* magazine.

At the close of World War II, Dr. Davis returned to her work with The National Capital Parks Service, part of the Department of Interior. Her research with 2,4-D continued and her findings are published in the paper, "Turf Weed Control With 2,4-D."

Dr. Davis is now 72 and Chairman Emeritus in biology at Okaloosa-Walton Junior College in Florida. Her enthusiasm knows no bounds. She is active in serving senior citizens and addressing herself to their problems. Through lectures, writings and television, Dr. Fanny-Fern Davis continues to make her contribution to the broad spectrum of life She closed her comments by reminding her "young audience" that "each day we grow older and each of us should start planning now for our later years."

GOLF THEN—GOLF NOW

A Champion's View of Course Conditioning Over The Years

by **RICHARD L. SIDEROWF,** Golf Club at Aspetuck, Easton, Conn.

It is a pleasure for me to be here today to be able to express my views on golf courses and golf course conditioning.

Several months ago, Al Radko asked if I would talk briefly at this meeting. Since then I have been jotting down ideas as they have come to me, hoping to get them into some form that would make sense and be interesting to you. As well as talking about conditioning, Al asked me to do so by contrasting British courses with our own.

At the outset, I want you to know that I am not an expert by any means on the subject. By way of having a mis-spent youth, I have played hundreds of different courses in this country and a few abroad, and in the process I have obviously formed some opinions as to what I like or dislike about a particular course. Also I might add that I personally am what one might call a traditionalist; my wife has at times called some of my views reactionary.

As an illustration of my philosophy, I thought I might use the example of graphite shafts. A great deal of time and money have been spent on their promotion. I really don't think they are better than steel. They may be, but why is it that Nicklaus, Snead, Boros, Trevino, etc. do very well without them. You might say, "Well Johnny Miller has used them." I would argue that Miller could probably go down to the local Hermann's sporting goods store, pick a set out of the barrel and still shoot 65!

When conditioning is being discussed, I think you must touch upon architecture because the two go hand-in-hand. That is to say, if a course is designed properly on the right kind of terrain, it is easier to maintain.

Why is it that the USGA, which is certainly a traditional organization, always seems to choose courses like Oakmont, Oak Hill, Winged Foot, Merion, or Medina for its Championships? And why is it that when it chose Hazeltine, there was a lot of criticism? I happened to play in the Open at Hazeltine, and I thought it was a very nice course. I think the fact that it was new and had a few tricky holes on it drew more criticism than was called for.

The primary reason for the USGA choosing these older courses is that the game has been played for a long time with essentially the same Rules and same equipment. There have been very few changes in the 25 years that I have been playing, and this has kept the game a very consistent one. I think this adds to the fun of the game. I first played Winged Foot about 20 years ago. The first hole took a drive and a 2-iron. Today it still takes a drive and a 2-iron. This is the mark of a great course, it is CONSISTENT.

Many clubs have set about changing their courses to make them tougher and trickier. This is fine with me. But to make them too tough is unwise. To me the true test of a good hole is when a good shot is played, the player is rewarded by being on the green near the hole. When a good shot won't get the job done, then the hole is too hard.

Recently courses have been built by people who aren't traditionalists and who seem to know little about golf. They decide they will have 300 bunkers on the course, because no one else has that many on *their* course. They do not have maintenance or conditioning in mind. They put them everywhere—on side hills—at low levels. They don't realize that every time it rains the crew has to fix the wash out, and when it doesn't rain the crew has to rake them. Chances are that 75 per cent of the bunkers on a course like this have nothing to do with the game. If a bunker isn't built to catch an errant shot, **why build it at all?**

I have seen new courses that have had trees right in front of the green. I mean large trees thirty feet in front of the green!! There the player stands with a 4-iron shot and the only way to get close to the hole is to be lucky enough not to hit a limb on the way through the tree. This is not golf because the fun of the game is eliminated.

Many of the courses are too long and have greens that are too big. When a professional has to hit a driver to reach a par 3, where does that leave 85 per cent of the golfing-world? They can't even get close to the green in one shot.

On the subject of large greens, there are several reasons why I dislike them: One is that

Old Course, St. Andrews, Scotland

Cypress Point, USA

to hit a huge green with a 9-iron takes very little skill. A short hole should have a small green that makes a short approach shot tricky and difficult, and that brings skill into play. Another reason is that a huge green eliminates many chipping and bunker shots, because even a very poor shot is on or around the putting surface. Also, it is often difficult to have good drainage on large greens.

I have only played on a few courses in Great Britain. All of them have been seaside courses, because this is where the R&A chooses to play its Championships. Therefore, I cannot speak for the inland courses over there.

This is where you can find tradition! The courses I have seen are probably exactly as they were 50 years ago with very few exceptions, and they continue to be great tests of golf. Very seldom do you find a bunker that was not designed to catch a particular bad shot, or a green that was not designed for a particular reason, such as luring the player toward a bunker or some heavy rough.

The members of these clubs take great pride in the tradition of their courses. Although the ground is almost sacred to them, they are not as concerned as we are that every blade of grass be bending the same way. They are more interested in the course being a good test of golf.

The most famous club that I have played at is Muirfield, in Scotland. I came upon an article by James Dent that I would like to read to you that will give you a little flavor of the club. It might not be Muirfield, but it certainly could be. It's entitled "Inadequate Duffer" and goes like this:

All of his life, a dignified English barrister-widower with considerable income had dreamed of playing Sandringham and one day made up his mind to chance it, although he was well aware that it was very exclusive. When he asked at the desk if he might play the course, the secretary inquired, 'Member?'

"No sir."

"Guest of a member?"

"No sir."

"Sorry," the secretary said.

As he turned to leave, the lawyer spotted a slightly familiar figure seated in the lounge reading the London Times. *It was Lord Wellesby Parham. He approached and bowing low, said, "I beg your pardon, your Lordship, but my name is Higginbotham of the London firm of Higginbotham, Willoughby and Barclay. I should like to ask a huge favor, really — if I might play this delightful course as your guest?"*

His Lordship gave Higginbotham a long look, put down his paper and asked, "Church?"

"Episcopalian, sir. And my late wife, Church of England."

"Education?" the old gentleman asked.

"Eton, sir, and Oxford — magna cum laude."

"Athletics?"

"Rugby, sir, spot of tennis and rowed No. 4 on the crew that beat Cambridge."

"Military?"

"DCCE sir: Coldstream Guards, Victoria Cross, Knight of the Garter."

"Campaigns?" "Dunkirk, El Alamein, Normandy, sir."

A difference in philosophy!

"Languages?"

"Private tutor in French, fluent German and a bit of Greek."

His Lordship considered briefly, then nodded to the club secretary and said:

"Nine holes."

The course is well-groomed but not overdone. The fairways are not watered, but since it is located near the sea, there is enough rain to keep them in good shape. The greens *are* watered and are very fast and true. You never get a flying lie at Muirfield. As most of you know, a flying lie is one where the grass gets between the club and the ball and causes it to fly with no spin. As a contrast, at many of our courses the fairways have become too lush. Even the most accomplished player cannot easily control a flying lie.

Muirfield is a greenkeepers delight. The mowing is simple because there are not a lot of trees and bunkers to mow around. A lot of the area is just left to grow. Obviously these are areas that a player should avoid. There are many bunkers, but all have good drainage and are easily maintained by hand. The greens are fair-sized but not huge.

One thing that is missing in Great Britain is mechanized carts. There are no asphalt cart pathes or worn down roughs or tire marks in the fairways. Cars are a fact of life in our country, but they certainly don't help the condition of a golf course.

In closing I would like to point out a few problems that I see at our courses and some possible remedies.

1. As I just mentioned, cars are a problem. Unfortunately, many clubs have become dependent on them for revenues. If each club could constantly educate its members as to the use of cars, it could help conditioning.

2. As I also said, bunkers are too numerous on many courses. Many of them don't even come into play. This makes maintenance very difficult. The new automatic trapraker is very prevelant now. This unfortunately leaves ridges in the bunkers. I would like to see the unnecessary bunkers plowed under and have the more strategic ones hand raked.

3. With regard to greens, I think the use of the triplex mowers has hurt the greens. I have noticed a lot of skinning around the edges, and I believe the triplex definitely affects the natural grain of a green. I would like to see greens cut with a conventional mower—at least for tournaments.

4. Fairways could be cut narrower. This would save some cutting time and make some of the less difficult courses a little testier.

Unfortunately, everybody can't be members at Winged Foot or Muirfield. I do think that there are hundreds of great courses in the United States as compared with probably a handful in Great Britain. Rather than trying to condition them so that John Miller won't break 60—why not condition them fairly, and if some one is good enough to shoot a great score—so be it. That's golf.

The ninth hole on the West Course at Winged Foot Golf Club during play of the 1974 United States Open Championship.

Streamlining the Club Operation— A Club Official's View

by **EDWARD T. SCHNEIDER,** President, Winged Foot Golf Club, New York

(The following was prepared from an outline and notes taken during Mr. Schneider's presentation at the Green Section Education Meeting on January 24, 1975. Editor)

Club officials can and must play a vital role if club operations are to be streamlined. This is my second year as President of Winged Foot and it has been a great privilege and experience. We could never have successfully staged the 1974 United States Open Championship without a proper spirit of communication and cooperation within our club. Each Board member's own expertise came into play, as well as each of our department heads; i.e., the golf course superintendent, the golf professional and the club manager, all coordinated by the general manager.

In my opinion, one of the most powerful and important committees at any club is the nominating committee. It holds the key to the club's future. It is the selection of new Board members that forges the operational policy of the club. Unfortunately, nominating committees I have seen in various other organizations frequently become very cliquish. A friend wants to be on the Board and so he is nominated. The committee doesn't really check into his qualifications and determine what he can contribute to the club's needs.

I was invited to speak to our Nominating Committee at Winged Foot before it chose new Board members. The objective was to provide our Board of Governors with individuals having particular talents useful to the club. For example, there are seven or eight categories of special interest:

Public Relations—It's awfully important to have PR men in any organization, and especially at a golf club. They know how to handle matters properly. There are two ways of writing a letter and the PR man knows how to explain a point in a prudent and professional manner. He can eliminate a tremendous number of problems.

Lawyers—Of course, you do need attorneys. They can insure that things are done legally and in their right order.

Engineers and Plant Maintenance—Engineers and plant maintenance specialists on the Board contribute to long-range technical planning, to the maintenance of the physical plant, to a review of equipment maintenance requirements, heating units, plumbing facilities, etc. They can eliminate many long-range problems.

Insurance—Another extremely important catagory in any club operation today is insurance. Unfortunately, I can tell you of the fire we had in a grill room in 1973 with the United States Open coming up in 1974! The possible problems from such a catastrophe could make you nervous. But with professional people involved, the claim settlement was easily and properly done.

Restaurant—We have had people in the restaurant business on our Board and they have been of tremendous help in exchanging their experience and thoughts with the manager.

Practical Businessmen—This type of individual can be very helpful in planning and insuring that the club doesn't do something too extreme only to regret at a later date.

CPA and Financial Experience—Of course, someone with a financial background can guide the club in matters of money, tax situations, etc.

A funny thing happens at a club, I find, when we ask a member to serve on the Board. He is just delighted to do so and we rest easier knowing its going to be done in a proper way.

In a number of cases, two men at Winged Foot with similar professional backgrounds may serve on the Board at the same time. If there is a difference of opinion, what better approach is there than having two individuals from the same discipline come to an agreement or compromise made in the best interest of their club? The entire Board can then make the best possible decision.

Continuity within the Board of Governors is also essential so that there is the continuing flow and direction given to important decision making. I was interested in an article which appeared in *Golfdom* Magazine several years ago by Richard L. Viergever, then superintendent at the Olympic Club, San Francisco, Calif. He stated in part;

> Many clubs operate haphazardly. This is not surprising although of course it is wrong. The average club is run by a Board of Directors composed of businessmen who are engaged full time in making a living of their own and cannot afford to take the time required to run their clubs efficiently. This of course puts a premium on the management qualities of the three department heads common to most larger clubs.
>
> When the organization is set up properly, the professional, superintendent and manager should get together frequently to discuss the overall operation of the club; each with full knowledge of his responsibilities as well as those of the other two executives, and with no dissention or jealousy, but with a spirit of full cooperation. This is the only way that first class management can be attained. When this is the case, the club directors and committees can then spend a minimum of time running the club and still get maximum enjoyment from all facilities. The members will get more value per dollar spent regardless of the size of their budget or the membership."

At Winged Foot, we operate under a general manager concept. The course superintendent, club manager, golf professional, and the general manager hold frequent meetings. Communications are excellent and cooperation between all department heads is a vital factor in the successful operation of any club.

Streamlining the Club Operation— A Manager's View

by **E. GEORGE WETMORE,** General Manager, Tavistock Country Club, Haddonfield, New Jersey

If ever there was a need for a thorough streamlining of club operations, it exists today! If ever there was a need for sound fiscal policy in club management, it exists today! The economy has been caught up in an inflationary spiral and much concern is expressed at all levels of society as to how we can cope with runaway costs. Public utilities are fighting to raise their prices; fuel and food costs continue to move higher; the prices of fertilizers and chemicals have skyrocketed within a relatively short period. Indeed, I suspect that everyone has experienced real difficulties in staying within 1974 budgets.

The forecasters of doom are out in full force predicting the end to clubs as we know them, and, of course, none of us really believes that. A quick remedy for financial problems advocated by many club people in the past has been a dues increase or an assessment. It seemed a reasonable expediency. After all, if a member couldn't afford it, then he shouldn't belong.

Or should he?

How often have you heard this philosophy expressed in your club?

It is my contention that the management of clubs will find it exceedingly difficult to tag these increased costs on to dues fees. We have arrived at a point where we could well price ourselves out of the club business. We are not alone in facing up to economic difficulties. The problems are similar throughout the business world.

Our basic concern must be to resist irresponsible demands while at the same time we recognize the need to keep financial operations within the bounds of fiscal responsibility. Membership demands are insatiable, both in the clubhouse and on the golf course. Membership desires are frequently falsely equated with membership needs. "Add another waiter to the staff," exclaims an angry member who feels the service is a bit too slow. "Cut the greens more often," growls a golfer who has just missed his putt. "To heck with the cost, keep the men overtime," despite weather or other problems which may have interrupted planned schedules.

The next five years may bring us the greatest socio-economic change our country has ever experienced. The impact of this change will affect all businesses and people in all walks of life. The manager who is to cope with the challenges of the future will require ingenuity as well as an appreciation of the basic principles of sound management.

Green superintendents, club managers, golf professionals and other department heads responsible for making the management team work properly will be called upon to find new ways of cutting costs. You might be interested to learn how we have attempted to meet the challenge at Tavistock. We considered it an opportunity to serve club members, our community and, indeed, our country. We asked our membership to accept with good grace the sacrifices asked of them in order that the club might lead by example in accomplishing our goals. It is interesting to note that in electricity alone we saved 35 per cent in actual kilowatt hours used. Despite this, our electrical bill is running 50 per cent higher. Just think what it would have been had we done nothing.

Some of the specific measures employed to reduce our "on site" energy requirements were:

1. Temperature controls throughout the club were reduced to 65° during working periods and 50° during non-working periods. Certain areas were reduced even more.

2. Gas operated fireplaces were closed down and we returned to old fashioned wood burning in its place.

3. Cooking appliances were utilized in the most efficient manner possible.

4. Lighting was reduced in all areas of the club and employees instructed in conservation measures.

5. Locks were installed on all heating and air conditioning thermostats to prevent unauthorized persons from tampering with the controls.

6. The practice of shutting down air conditioning units for one or two hours during the peak periods of the day was instituted.

Additionally, all employees were made conscious of the need for proper energy control measures.

7. All mechanical equipment was checked to insure maximum operating efficiency. A side benefit of this was a real savings in repair bills.

8. The width of our fairways was narrowed, which reduced the amount of gasoline needed to cut them by approximately 37 per cent.

9. Employees were instructed to use gasoline-operated vehicles in the most efficient manner possible, turning off the engines whenever the equipment was not in actual use.

10. All openings which could lead to energy waste were searched out and sealed.

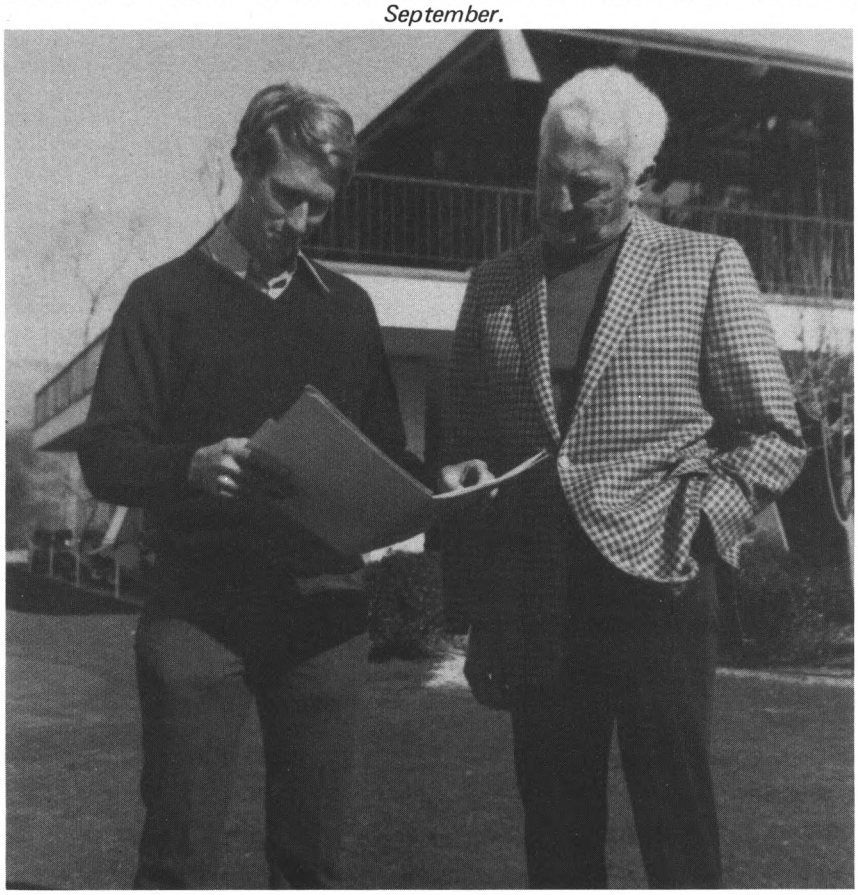
In addition, the membership was asked to participate by:

1. Organizing car pools for trips to the club.
2. Using fewer towels in the locker rooms.
3. Spending less time in the showers.
4. Advising management of any leaky faucets or ways to conserve.
5. By dressing appropriately in anticipation of lower winter temperatures.

There is some question as to the membership's reaction to these proposals, but with continued perseverance, we expect to make real headway.

Most important, we must think conservation from the top. We must lead by example. If we fail to extinguish lights or turn off motors as the result of our own negligence, then how can we expect our employees to be energy conscious? It is up to us to educate and motivate them in the right direction. It is up to us to educate our members and keep them informed

Steve Carlton, Superintendent (left) and Ed Haber, President-Manager (right) of Carmel Valley Country Club, Carmel Valley, California, discussing plans for course conditioning in preparation for the 1975 USGA Senior Amateur Championship to be held there in September.



as to why we are changing long held practices and procedures.

We are all well aware that the job can't be done without people. You, people interested in maintenance of the golf course, will be responsible for procuring the very best personnel available. How ridiculous it is to place a person of limited ability making a sub-standard wage on a tractor with the potential of doing thousands of dollars worth of damage if he mishandles that equipment. We must be meticulous in our efforts to attract and employ those with the necessary abilities. Once employed, we must motivate and provide them with the necessary training. The importance of these vital personnel practices cannot be overemphasized.

Remember, a good manager gets things done through people. Implicit to his success is the ability to make a poor performer good, a good performer better, and the best performer superlative. The result is a highly motivated, highly satisfied and highly productive work force.

The employee's personal development and work productivity are intrinsically related. It is to the club's best interest, therefore, that we devote sufficient time to personnel development. As managers, you must be aware that the success or failure of your employees is your success or failure and as they go, so go you! The future belongs increasingly to those who can teach their employees to manage themselves.

The need for continuing education for both employees and manager alike is obvious. Those who fail to find the time to attend educational conferences, management seminars, etc., must of necessity be left behind. It's essential that we meet with our peers on occasion to see what the other fellow is doing; to learn new methods and procedures through all of the educational sources available to us. This would include, of course, USGA Green Section Meetings, GCSAA Conferences and university-sponsored educational meetings.

Today's green superintendent must be sufficiently flexible to change with the times, and yet strong enough to resist malpractices suggested by well-intentioned individuals unaware of the real problems. He must be a thinker, a doer, a planner. We would all agree that successful managers are not necessarily people without problems, but rather people who have learned how to solve their problems. They manage to control their environment. For the green superintendent, his environment is the golf course, and its playing condition is a reflection of his ability and organizational capacity.

At Tavistock we are blessed with more than our share of competent people. Our golf course superintendent, for example, is not content with mediocrity, but rather he has a love for excellence and refuses to compromise his integrity. His attitude is positive, his goals precisely spelled out. How delightful to work with one so inspired, whose optimism, confidence and enthusiasm are a daily blessing.

Communication is an essential part of good management. Too frequently a green superintendent will fail to recognize the need for good communication between workers, department heads and the members alike. Let the members know! Take the time to tell them what's happening. Utilize every means of communication at your disposal. You can write articles for the club's Newsletter, use the bulletin boards, speak through the golf professional, the green chairman or club manager. Build a bridge of good public relations with your membership and it will pay off.

Finally, I would suggest that the green superintendent who can't stand the heat should stay out of the kitchen. Every golfer knows the proper techniques of the golf swing. They are all master chefs and, of course, who knows better than the average member how to grow grass? You will be deluged with all kinds of ideas as to what you should do or not do. A good superintendent will certaintly keep his mind open to new ideas, but he will also find the means to dispose of those thoughts which would prove of little value or even do considerable damage.

In my office hangs a print of Teddy Roosevelt with a philosophy expressed by him during one of his most trying times. It was given to me by a good friend, and it has pulled me through many difficulties:

> *It is not the critic who counts, nor the man who points out where the strong man stumbles, nor where the doer of deeds could have done them better. On the contrary, the credit belongs to the man who is actually in the arena, whose vision is marred by the dust and sweat and blood; who strives valiantly; who errs and comes up again and again; who knows the great devotions, the great enthusiasms; who at best knows in the end the triumph of high achievement. However, if he fails, at least he fails while daring greatly so that his place shall never be with those cold and timid souls who know neither victory nor defeat."*

Getting the Most Out of Golf Cars

by E. SADLER MORGAN, The Millbrook Club, Conn.

In the summer of 1971 the President's Council of the Metropolitan Golf Association, New York, decided that there was a serious lack of unbiased information on golf cars. The Council doesn't believe in the "collective wisdom of individual ignorance." This means that, regardless of the number of members on a committee, if the individual members don't know the subject and are not supplied with the correct information, they probably will come up with the wrong answer.

Since I was absent from this particular meeting, I was elected to do the research and write the *Golf Car Manual*. I have been told by a few people that the manual did for the golf car industry what Jack the Ripper did for door-to-door sales.

After doing a good deal of research, the manual was written and distributed by the Metropolitan Golf Association, (60 E. 42nd St., New York, N.Y.). There are, however, some conclusions which were drawn at the end of the manual. None of these conclusions have been proved wrong. (Probably since nobody ever considered it important enough to dispute the findings.) Some of them are thought-provoking and I would like to give them to you here.

1. Evidence shows that a club can do better financially if it owns its golf cars, rather than leases them.

2. Electric cars appear to be more advisable to purchase, unless they are precluded by terrain or necessary extensive use.

3. The successful operation of a golf car fleet is entirely dependent on good management and maintenance.

4. Evidence indicates that the newer three-wheel cars and four-wheel cars have about the same stability under most conditions. Therefore, since the three-wheel car is easier to manuever and may require less shed space, as well as perhaps not creating as much compaction, it appears to be the wiser choice.

5. Car fees should not be lower than caddie fees.

6. Caddies should accompany golf cars.

There are several other conclusions, but the subject has more to do with the topics suggested by the six given above.

CLUB OWNERSHIP BEST

Concerning the first conclusion, that a club can do better owning its cars, the method of procurement is of vital importance. It is not uncommon for car revenue to be the largest non-dues revenue of the club. This is true even at clubs where the car operation is not efficiently run. Cars have the distinction of being one of the conveniences a member can enjoy that doesn't draw from dues income. In some clubs it's the only one. The pool; it costs more than it brings in; the same is true of tennis courts, and for many clubs the restaurant results in a cost in dues. Golf cars are one of the few revenue producers.

The conclusion that it is better to own cars is true because it reduces the costs of middlemen to own them. Rentals mean that someone else puts up the money so the club doesn't have to do it. Relieving the club of the burden of putting up the money or credit to purchase the cars could be very expensive. The finance costs are passed through the club anyway, but this time they have someone's profit added on top.

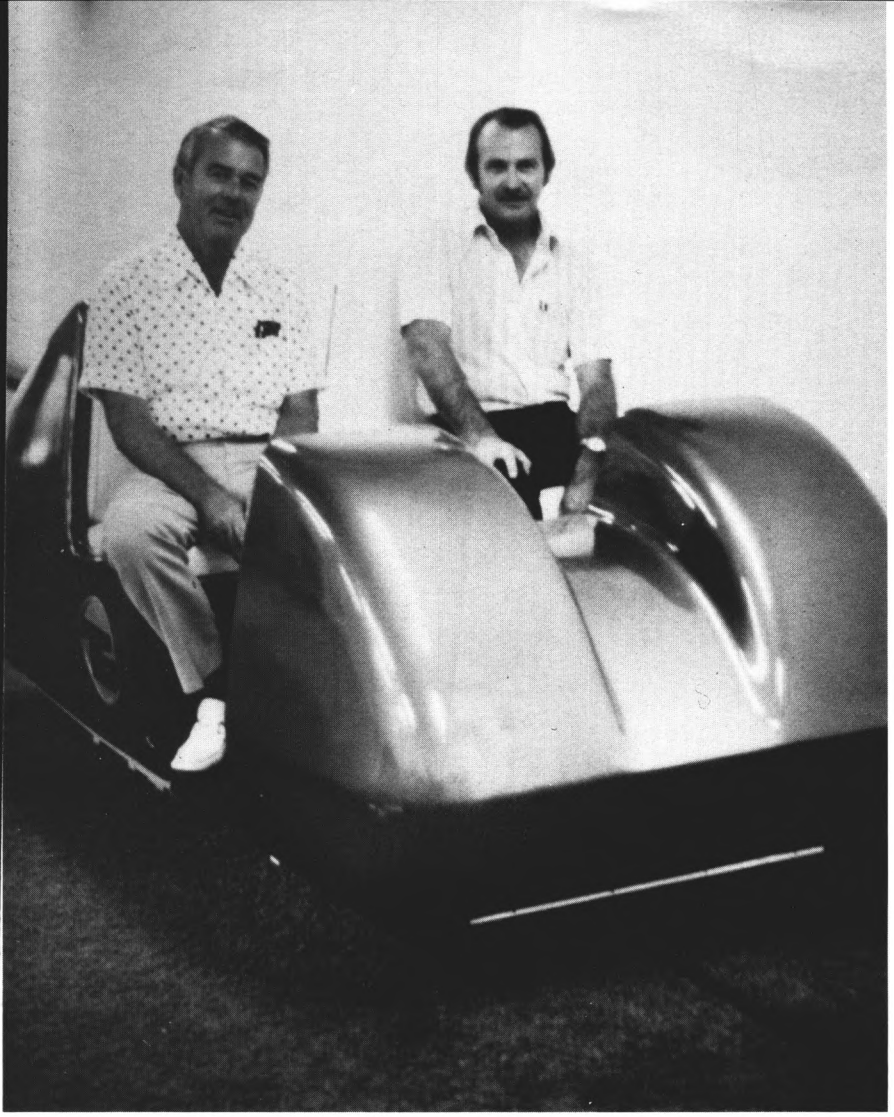
The argument that rentals avoid maintenance is just paying top dollar for avoiding a simple responsibility. Like so many "easy ways" it usually turns out to be the expensive way. Avoiding the first year repairs to cars nets nothing, since the cars are under a warranty the first year after purchase. It is during this first year when a club should be training its maintenance personnel, when dealers' service calls are being made.

Today there are even deals where the cars can be rented for a period of four or five years, while the rentals apply to the purchase price. This is a nice arrangement since the lease can be without any service, saving charges, while at the same time the car purchase is being done without straining the club's borrowing power. The dealer likes it because he can get the investment credit and depreciation on the cars.

Rather than get tied up on the financing of cars, let me say that the clubs who purchase do better. A club in Westchester County, N.Y., has just completed its first year of ownership after a history of leasing cars. The members are very happy with the change.

ELECTRIC VS. GAS

The second conclusion drawn at the end of the manual was that electric cars appear to be the better purchase. This ties in very closely



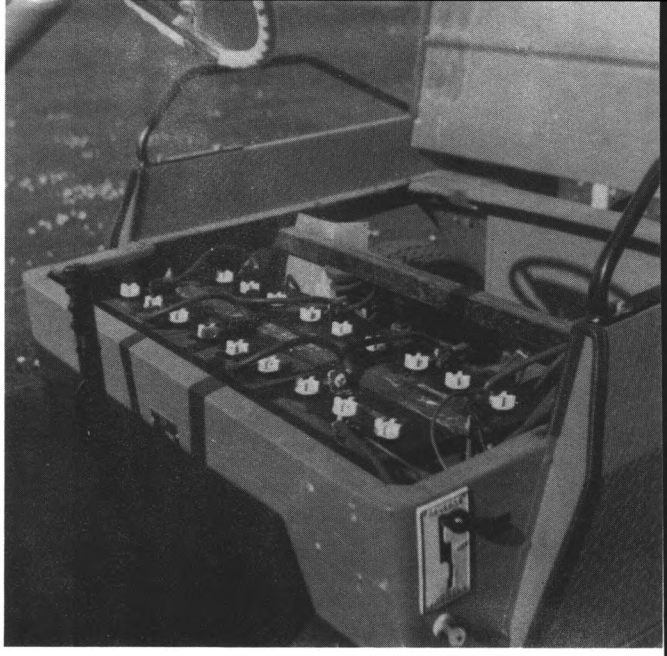
An experimental monorail golf car. No wheels on the turf!

with the third conclusion that the successful golf car operation is dependent upon good management and good maintenance. The two items are really adding up to the most important quality your car fleet can have—longevity. Buying the cars the proper way is important. It's also very easy to understand. Longevity is different. Acquiring this virtue is more than a wise selection of type of car, dealer and method of finance. Once these things are done, the project is over. Extra years of car life represent gravy, income without procurement costs. Your fleet should and will last from 10 to 12 years if longevity is sought. Building longevity is more difficult because it has to be done over a period of time. It takes understanding the problem for what it is. About 60 per cent mechanical and 40 per cent political.

Electric cars are simpler than gasoline machines. They have fewer moving parts and the number of things that can cause breakdowns is far fewer than in the gasoline-powered vehicle.

The common thing about almost all golf car breakdowns is that they make the member believe that the cars are worn out and need replacing. This feeling among the members is extremely dangerous. Being forced to replace your car fleet is a serious blow to the profitability of your fleet operations. I needn't tell you there are few things more aggravating than a breakdown on the course. A breakdown can change a mild, agreeable member into a crusader for a fleet renewal.

Very few people outside of the industry can tell a 1967 car from a 1972 car. There are several reasons for this. The manufacturers make very few changes in car design, and people just don't care so long as the car does its job. It is to this end that maintenance programs must be geared. The other part of protecting the fleet after breakdown avoidance is in the image your cars present. Ash trays should be emptied, floors swept or blown off and the score card holder must be replaced if it breaks.



Electric cars are simpler than gasoline machines.

Rattles must be tested for and eliminated. Seat cushions should be recovered when they are ripped. A good cleaning with Fantastic or other modern cleaner weekly will do wonders to keep up the appearance of the fleet.

GOOD MAINTENANCE

Golf car parts are made by the automobile industry. Differentials, axles, drive shafts, armatures, windings, brake linings and drums are all automobile parts. These parts last in automobiles for thousands of miles. Golf cars in this area average about eleven miles a day on busy courses. Assuming six days a week for seven months for ten years is only 20,000 miles. This 20,000 miles is done at low speeds over grass, really not too much of a strain for auto parts. These auto parts constitute the major cost of a golf car. The other parts, relays, brushes for the electric motors and tires are the parts that must be replaced occasionally, but their cost is not substantial. Replacing golf cars due to the failure of relays, or because the brake or accellorator pedal sticks is like replacing your car because the ash tray is full.

We talked before of the disasterous effects of breakdowns. When operating electric cars the principal cause of breakdown while on the course is battery failure. Battery failure is closely followed by "last gasp" operations of dying batteries on the final holes. When the last few holes start to look like the road to El Alamein, with the dead golf cars on each side of the fairway, you have waited too long. You have let your batteries run down and members' tempers run up. This stretching of the batteries may result in a shortened life for the cars themselves.

Two quick rules that can save a great many of these problems, as well as allowing you to cover for a less than perfect battery maintenance program are as follows:

A. Renew the battery every two years. Don't try to make them last an additional year. Almost always you will be caught.

B. Establish a program where cars get even use. Don't let the low numbered, odd numbered, old cars or any other group do most of the work. Each car should get the same number of rounds each week. It is important.

Recent developments in the battery industry offer new, higher capacity batteries for rougher terrain courses. Some that could not consider electric cars a few years ago have them now.

3 WHEEL VS 4 WHEEL

The fourth conclusion was that three-wheel cars are not a great deal less stable than four-wheel cars and coupled with other advantages they should not be discounted on the basis of a great additional risk of personal injury. This statement always draws some comment from any group. Perhaps a quick explanation is in order; then some of the advantages of the three wheel machine.

Almost every golf car has the clubs on the back; the power unit is usually just forward of the rear axle; the batteries are over and just forward of the rear axle; and the weight of the passengers is principally behind the center of the car. This means that the center of gravity of the car is not very far forward of the rear axle. In order for the car to capsize, the center of gravity must move to a line outside the axle. The front axle has little to do with the stability of the car except when the force is for the car

A three-wheel car with the seat showing the batteries position.

to tip to one of the front corners. Many car accidents seem now to be ones of drastic steering or gross negligence on the part of the operator. It is for this reason that tiller bar steering should be discouraged on three wheel cars. As with automobiles, it is difficult to build in protection against operator malfeasance.

The three-wheel can be steered in a much tighter turning radius, requiring less shed space for storage. It has 25 per cent less tire trouble and maybe even better than that. With one tire on the front, it is impossible for the front wheels to get out of line, which creates wear on the tires and on the golf course. The mechanism for steering the single front wheel is less complicated and much less susceptible to mechanical problems.

As explained before, there is little weight on the front wheels of a golf car anyway, so that spreading this reduced weight over two tires instead of one is of little consequence from a straight compaction standpoint. There are those who feel that making three tracks rather than two is better. I think the three track is better since compaction is not the killer that fatigue is. Two tires over a blade of grass is more killing than one regardless of weight.

CAR FEES & CADDIES

The last two conclusions are that car fees should not be less than caddy fees and that caddies should accompany cars. It would be wrong to displace caddies just because many people would prefer to save money on a round of golf. I also think it is wrong to gouge those who use the cars. It must be remembered that there are a percentage of people who don't have a choice, they must use a car. The reason may be medical or matrimonial. (He has to play with his wife.).

Perhaps a mid road approach could be used. Pricing members out of clubs by making golf too expensive would be too bad. These people, usually older, need the club and in these days of no waiting lists, we must say that the club needs them. Some sort of program should be investigated to require a caddy but at some reduced rate. Caddies to find golf balls and reduce waiting for trap raking and the like make their use practical. Keep in mind that the caddies' greatest contribution is the speeding of play. Perhaps "B" or apprentice caddies could perform this function at a reasonable cost.

Now let's talk about getting the most out of your golf cars. Like any business enterprise you must obtain your capital assets in the most economical manner possible. We discussed this and recommended procurement by purchase, thereby cutting the initial cost to the minimum amount. Keeping the cars operational for as long a period as possible will cut the per year acquisition cost substantially.

INCOME

After having reduced these direct expenses as much as possible, we then have to discuss the other area of profit contribution—income. Use of the golf cars should be encouraged. Revenue from cars will be helpful in the overall operation of the club and could represent an increased incentive to membership. Suppose that a discount were offered on car use after five in the evening? Perhaps it would encourage members to come out and play nine holes on summer evenings. Normally the cars would be

producing no income, but such a plan might generate a fair revenue from the otherwise idle cars. Tying this program in with an informal buffet supper may encourage couples to participate. Giving members additional opportunity to play golf may make the difference between keeping him and losing him. A program like this could substantially lower the cost-per-hole-played for the suddenly pressed member. How many resignations have we seen where the member states that he can't get to use the club enough to justify membership. The resignation justified by statements like "my resignation will open the membership for someone better able to use the facilities" are passe. Today there is no member waiting list to use the facilities.

The question is often presented that the cars do more damage than they could ever justify. Can this income compensate for the bare places on the course, the paved paths just where a ball might land?

There are several answers to this question. The first is that clubs may not be able to afford not to have the cars. Many prospective members can't play without them. The other answer is that the damage factor is not as great as it is made out to be if properly controlled.

The first two answers, they attract members and supply income, are not to be turned aside in these times by the average club. Today the principal thrust is income. Memberships, golf cars or anywhere else it can be generated is welcome and to be encouraged.

The third answer, that the damage isn't all that great anyway, is controversial; but looking at the facts brings the problem into better focus.

There are few courses today that don't have at least one, and probably more, golf cars and variations of golf cars running around the course now. They are carrying men and equipment from place to place. Triplex mowers are a good deal heavier than a golf car. Fairway mowers apply more weight per square inch where they bear on the ground than golf cars do when fully loaded. Based on this, although compaction is a problem, golf cars are not the only causes of it. It would even be safe to say that the major contribution of golf cars to compaction is not so much their weight, but the volume of traffic.

LIVING WITH ABUSES

In most cases, the most flagrant abuses of the course with car operations are the result of either thoughtlessness or ignorance. Stop to think. How many golfers would take a divot out of a putting green? Very few, and when they did, they would be embarrassed and do immediate repair work. The same applies to damage caused by golf cars. If their drivers knew better, they wouldn't do the damage. Cars operated by those as knowledgeable as members of the maintenance staff don't cause much damage.

The problem is really a matter of education of members and reminders for continued care. Take a simple one. At the beginning of the year, lines of chalk should be put down 30 feet from greens. This is a common rule "don't bring the cars closer than 30 feet from the green." The problem is that many people can't judge thirty feet very well. The lines will show the proper distance. When the lines disappear at the end of a week or so the lesson will have been taught and the replacement of the line will not be needed for the rest of the season. If you see that people are forgetting, put the line out again. Lines in specific areas where you don't want cars should either be chalked off or chained off. Remember that too many chains create a problem for the maintenance crew. A good permanent marker is a bush or a tree to break up traffic or block a bad area.

Areas that restrict traffic should have paved paths. These spots will be bare anyway, so try to restrict the traffic to the path and save as much square footage of grass as possible. Paths, with curbs, should be provided on all severe up and down grades. Paths up steep grades make it easier on the cars, and if curbs keep the car from leaving the path, cars will not be tipping over trying to go sideways on too steep an embankment. Signs on these hills stating that path must be used are helpful, but not as helpful as chains preventing cross country travel in these areas.

My feelings about restricting cars to the rough are mixed. If the course is not soggy from rain or not wilting from excessive heat, I think the traffice would do less damage when spread over the entire golf course. It will definitely speed up play. All car traffic in the rough means that the areas just adjacent to the fairway will soon be bare, or worse, yet, paved. A shot three feet off the fairway may bounce off a paved path and go out of bounds, while a shot 15 feet off will be in lush rough. It seems unfair to me.

HERE TO STAY

Cars are with us today. They are as much a part of the golf course scene as the tractor, the triplex mower, and the drain grate. None of these things is pretty, but as times change these things become imperative, along with their unpleasant side effects. Before restricting them from proper use, we should do a serious job of weighing the advantages and disadvantages. The desires of the majority of your members should be considered. Members are the key to club survival. Some of them bring problems with them. Those in club administration cannot, in these times, run roughshod over them.

Good Records —— An Economic Necessity

by **ALPHONSE BARAUSKAS,** Avalon Lakes Golf Course, Ohio

Effective decision-making requires a foundation of objective information concerning any business operation. This is the objective of a good record-keeping system. Good record-keeping is characteristic of most successful businesses, while inadequate records are typical of firms that fail.

To the professional turfman, one of the most common elements that he deals with daily is the "WHETHER."

Were you aware that you can do something about the *WHETHER?*. . . Weather has always been a popular topic of conversation and it probably will remain so until control of the elements is a matter of routine.

Now to a golf superintendent, the weather is not just a topic of conversation, but his master, his servant, or his downfall. We cannot control the weather at this time, but thanks to radar, weather satellites and the weather bureau in general, we can receive timely information relative to climatic conditions. We must build our daily turf management routines on this information, and marshal our labor forces and equipment to accomplish what has to be done within the time allotted us.

So our plans are laid out, the men are ready, the materials are provided, and off we go on to the golf course with a variety of tools and euqipment designed to minimize the time factor in competing with the elements by accomplishing turf management procedures in the shortest time possible.

All will go well if you can depend on the *"WHETHER."* No, not the *weather* as it relates to climatic conditions, but the *WHETHER* whether your equipment will start, whether it will operate long enough to complete the task. It is this *WHETHER* that we can and must do something about!

The key lies in an effective preventive maintenance program. In order to produce excellent turf conditions within limited budgets and soaring labor costs, the reliance on time and labor-saving machines continues to grow.

As your equipment inventories expand, so does the need for an effective preventive maintenance program and a record system.

Though Avalon's two 18-hole golf courses are maintained with equipment whose cost exceeds a quarter of a million dollars, the need for a preventive maintenance system is applicable to all golf courses regardless of the amount of equipment they may own.

Having equipment ready when it is needed is very important to the golf course superintendent, because it contributes to producing and maintaining a well-groomed golf course. In addition, the saving of dollars realized by the reduction of the total cost in maintaining a golf course must always be uppermost in the superintendent's mind. He should always remember that every $10 saved by more efficient maintenance or repairs to his equipment, is the equivalent of $100 collected in green fees. (For this is $10 essentially converted into profit versus $100 of gross income required to achieve the same.)

In a discussion between Alexander Radko, of the USGA Green Section, and our green committee Chairman, Robert Cochran, Radko mentioned that the USGA Green Section had tried on many occasions to determine the average cost for mowing 1,000 square feet of green putting surface, the cost of raking 1,000 square feet of sand, or the cost of mowing one acre of fairway. Actually, it was this initial contact with Radko that encouraged us on the quality of our system of records. This system will not only answer those questions, but also by using it you can determine the cost of maintaining your green by individual process, or all of the processes ranging from mowing to changing cups, from spraying to fertilizing, or any and all other functions that you may feel important to your overall golf course management and cost accounting.

And the facts and figures will be your figures for your golf course. Radko was not seeking this information just to make conversation, but because he realized that in order to alleviate the high cost relative to golf course operation, you must stretch your budget dollar. By keeping records you can justify the expenditures you are making, but should the inevitable budget cuts occur, you have the information at hand to show the committee how the proposed cut in funds will affect your operation in terms of trees not trimmed, drainage trenches not dug, water systems not repaired, and labor-saving equipment not purchased.

The Record System

The smooth operation of any maintenance system depends upon the understanding and

completion of certain forms and records, plus the availability of all pertinent operator, maintenance and parts manuals. These forms, records and maintenance manuals provide uniform procedures for the control, operation and maintenance of equipment. In addition, it also provides a means for gathering cost data to justify expenditures, as well as to evaluate equipment. (This is precisely the information that the green committee and board of trustees want to know.)

Though your golf course may have a variety of equipment, the system followed at the Avalon Golf Course can be used for all equipment, regardless of the variety or the amount.

The information required by these forms is provided by the operator and the mechanic. This recorded information is then analyzed by the green superintendent, who recapitulates certain entries to condense data for committee, budget and progress meetings. These records also provide a consolidated daily record of all items of equipment used in each of the turf management and golf course maintenance areas.

Interestingly enough, although the system consists of five basis forms, the majority of the key information is provided by the operator and the mechanic. This information that takes just a few minutes to record will provide the pieces to a large picture puzzle—a picture of your operation that is completed at the end of one season or annual cycle.

Key to the System

The operator's daily operation and maintenance log is the foundation of the entire record and maintenance system. It is here that we deal with the most important and critical element of any maintenance program. . . . The operator and his equipment. (Figure #1)

It is here that the superintendent can check for work progress and problem areas. He can tell if the employee was working efficiently. He can also see if the mechanic has responded to the mechanical difficulties noted. it assigns direct responsibility for equipment to the operator and minimizes unreported maintenance problems. If used properly it will assist you greatly in doing something about the "WHETHER"—whether you will be ready to go when conditions warrant.

The employees' daily log is the only form that requires explanation to the employee. Actually, there is only one column that requires any real explanation, and that is the job code column. In order to identify a specific job, a job code number has been assigned. (Figure #2)

A four-digit number is used. The first two digits are assigned to specific areas.-We have assigned numbers in order of priorities and frequency of use. Example—The name of the golf game is "greens" so the area of greens has been assigned "01." The process performed with the greatest frequency is mowing, cutting or trimming, so this process has also been assigned "01." The combination of both numbers makes up the job number.

0101 denotes that the greens have been mowed; 0103—changing the cups on the greens; 0105—watering greens.

To give the system additional flexibility, a double "0" is provided so the employee may add in the "remarks" column any area or process not listed. This enables the superintendent to add, if he deems necessary, this new process or area noted. We have found that approximately 26 per cent of our labor hours will fall in the first 10 lines of the job code list.

The job code identification list (Figure 2) is posted in an area that the employees use for recording all work performed. The Employees' Daily Operation and Maintenance Log is located nearby in the shop. Here the men record their accomplishments of the day (Figure #1). The mechanic who makes the needed repairs or adjustments adds his "OK" in the same "remarks" column where the operator recorded his complaint.

With the exception of the employees' daily operation and maintenance form, the remaining four forms deal with just two columns. The monthly labor (Figure #3) and the annual labor (Figure #4) utilization forms deal with job numbers and total hours of labor. The monthly equipment and the annual equipment utilization forms, deal with equipment number and total hours of equipment operations.

The annual forms are the simplest to complete and the most indicative of your overall golf course operation. You can tell at a glance when you have fertilized or sprayed, watered or aerified, together with a manhour figure that tells you the cost of any specific operation, or the equipment used in performing these tasks. Beginning with the daily log, we shall now see how these forms are utilized.

The preventive maintenance requirements are geared to the information gathered from these forms. This data indicates the total hours of operation for each item of equipment and enables the superintendent to forecast engine overhaul requirements and specific scheduled maintenance. It also permits him to project equipment replacement needs.

The annual forms enable you to review items of equipment that have not been used to determine if the lack of hours was due to lengthy down-time or because of an inferior product or a change of requirements. Those items that show a high usage factor may warrant the purchase of a more efficient machine that may pay for itself due to less manhours used in accomplishing the same task.

The seasonal needs and usage of specific

equipment are apparent, and this information is used to schedule equipment for maintenance, and also when these items can be serviced for storage to prevent deterioration because of idle equipment. The frequency of use determines the frequency and type of service your equipment should receive.

The Annual Labor Utilization, together with the Annual Equipment Forms, provide a composite picture record of your complete operation. It is a tool that you can use to convince your Green Committee in any area where they may need convincing. Our records were the basis for the purchase of a new bunker rake, and with the passing of one season, our records show that the cost of the machine was more than paid for by the man-hour reduction in this area of operation.

We must constantly evaluate our overall operation and the effectiveness of the equipment we use in golf course maintenance, for today's newest design is tomorrow's obsolescence.

By reviewing your equipment records you will find that a great deal of your special equipment will fall into the category of "seldom used." Your records, together with your turf management requirements, will help you decide if ownership is really economical. (Sometimes rental cost of equipment is less than the interest cost on the funds required to make purchase of certain specialized, seldom-used equipment.) Though labor saving equipment is important, the total labor costs will continue to be the primary indicator of a successfully managed business.

In order to control operational costs, the golf course superintendent must supervise his employees efficiently and monitor his over-all operation constantly. A preventive maintenance system and a record system (other than those notes on pads provided by your friendly salesmen) are essential.

As a rope is made strong by weaving and intertwining a series of individual strands, so the weaving and intertwining of your preventive maintenance, record system, and personal supervision, gives your overall operation strength and efficiency, and also assists you in doing something about the "WHETHER."

Figure #1 **EMPLOYEE'S DAILY OPERATION AND MAINTENANCE LOG**

Avalon Lakes Golf Course **Date June 7, 1972**

INSPECT EQUIPMENT PRIOR TO USE

WEATHER: Sunny 50°-80°, 52% Rel. Humidity

Employee	Equipment Number	Job Number	Labor	Hours Equipment	Fuel Oil	Remarks Repairs Required
ULP	A-17	02-01	3	2½	2 gal.	OK
Bill	A-18	01-01	3	3	2 gal.	OK
TOM	A-19	01-01	3	2½	2 gal.	Hyd. Leak-Rt. Mower (OK Joe P.)
BONES	A-24 A-40	01-06	5	4½	10 gal.	OK-Back 9
BART	A-250					
	A-80	01-05	2	1½	2 gal.	1-3-5 Green
ULP	A-21	03-01	6	5	10 gal.	L. Wing Reel Hit Stone
JOHN	A-25 A-45	04-01	10½	9½	10 gal.	OK
ZEKE	A-110	11-01	2	1½	1 gal.	OK
JOE	—	10-10	2			
JOE	—	10-11	3			
JOE	—	10-12	3			
DEAL	—	19-00	9			Supervised Athletic Field
						Constr. For Church
AL	—	31-31	2			
AL	—	20-11	6			
Daily Total			59½		39 gal.	

SERVICE EQUIPMENT PRIOR TO SECURING REPORT ALL DISCREPANCIES NOTED

Figure #2 **AVALON GOLF INC.**

Job Areas

01-Greens
02-Tees & Collars
03-Fairways
04-Roughs
05-Sand Traps
06-Driving Range
07-Picnic grounds
08-Club House
09-Club House Lawn & Parking Lot
10-Maintenance Building
11-Avalon Inn, Lawn & Parking Lot
12-Cart Building
13-Cart Paths
14-Trees, Ornamentals
15-Lakes
16-Irrigation System
17-Drainage System
18-Shelter Houses
19-Public Relations Project
20-Carts
21-Tournament Special
22-Tennis Court Area
23-Bridges
24-General Office-37th Hole
25-Pro Shop—Avalon Inn
26-Woodlands
27-Standard Golf Course Equipment
28-Bag Room
29-
30-Aprons & "T" Banks
31-Records
32-Payroll
33-
34-
35-
36-
37-
38-
39-
40-
41-
42-
43-
44-
45-
46-
47-
48-
49-
50-
51-
00-Areas Not Covered (Describe in Remarks Column)

No. Process

01-Mowing-Cutting-Trimming
02-Changing "T" Markers-Trash Cans-Towels-Ball Washers
03-Changing Cups
04-Raking
05-Watering
06-Applying Fungicides
07-Applying Herbicides
08-Applying Insecticides
09-Fertilizing
10-General Shop Work
11-Repair or Equipment
12-PM of Equipment
13-Clean Up
14-Painting
15-Weed Control
16-Edging
17-Leaf Removal
18-Seeding
19-Sodding
20-Aerifying
21-Verti-Grooving
22-Verti-Cutting
23-Top Dressing
24-Dragging
25-Blowing
26-Clean Up Mowing
27-Liming
28-Spiking
29-Sweeping
30-Miscellaneous Labor
31-Administrative
32-Hauling
33-Capital Improvement
34-Steam Cleaning
35-Snow Removal
36-Sharpening
37-Ball Retreiving
38-General Supervision
39-Parts Run
40-Trenching
41-Rolling
42-Disking
43-Cultivating
44-Transplanting
45-Welding
46-Soil Shredding
47-Meetings
48-Loading
49-Job Training
50-Course Inspection
51-Applying Wetting Agents
00-Areas Not Covered (Describe in Remarks Column)

*Awaiting Assignment
**Equipment Breakdown

Figure #3 **AVALON LAKES GOLF COURSE**

Monthly Labor Utilization Record **MONTH: June 1972**

Job Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total Hours
01-01	5	7	5	4	11	4	6	8	7	7	6		7	7	3	6	9	5	6	5	6	12	3	5		6	3	6	6	6		165
01-05	6	3			3		2	2		12	7		8	2	8					3			4	5						10		75
01-06					10	6	5										11			4		6	9									51
02-01	9			2	9		3	2	4			15			17		8		7		11			3				9			110
03-01	7	2			7		6						9					4		4		7			5			7		3		61
04-01		9	13	6	10	4	10½	7	11			13			8				5			3½		4		4				2		110
10-10	4	4	3	4	3	2	2		3		4		6		5		5		6		5		5		5		5		4	5		80
10-11	11	12	11	8	11	5	3		11		10			6		16	20	14	11	10		12	8		8	5		10	9			211
10-12		1			2		3																	2			3		2			13
11-01				6			2				3		1					4				1	3						3			23
19-00							9																									9
20-11							6				4						4					8					6					28

Figure #4 **ANNUAL LABOR UTILIZATION RECORD** **1972**

Job Number	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Total Hours Avalon	Total Hours Lakes
01-01		96	186	199	195	206	111½	50½	7				1051	
	20	86	148	165	175	162	196½	89½	5½					1047½
01-05			28	62	110	97								
			84	75	75	110								
01-06		26	26	12	32	16								
		20	38	51	57	32								
02-01		49	100	108	95	89								
		48	78	110	96	97								
03-01		19	102	85	93	41								
		17	63	61	48	36								
04-01	4	20	138	139	149	80								
		3	175	110	113	86								
11-01														
		40	65	72	25	52								
10-10	100	110	50	20	30	70								
	140	150	72	60	100	60								
10-12	7	5	10	11	10	12								
	11	5	10	13	12	14								

The Golf Course Superintendent's Role in the Economic Squeeze

by **CHARLES G. BASKIN,** Superintendent, Country Club of Waterbury, Conn.
President, Golf Course Superintendents Association of America

The entire golf industry is being dramatically affected by the world's economic crisis. All phases of golf course operations are facing serious problems which are placing severe strains on the ability of the golf courses to survive.

Club management at all levels must be constantly alert and give top priority to the financial stability of the club. The golf course superintendent is a vital ingredient in the club's planning and management as we move through these troubled times. It is his responsibility to manage the golf course maintenance operation within the financial limits, as defined by the club's Board of Directors.

Let us look at a few of the many areas where the superintendent's role is of increased importance during this economic squeeze.

THE BUDGET

One very important area in which the club must utilize the knowledge of the superintendent is in the establishment of an operating budget.

The golf course superintendent is responsible for developing the budgets for all the departments he manages. The superintendent usually submits the golf course budget to the green committee and ultimately to the club's Board of Directors for approval.

The budget, which shows the allocation of the club's financial resources, should be based upon the end results that are desired by the club within their financial resources. The budget should take into consideration: the club's needs, problems to be solved, desired level of maintenance and anticipated revenues.

Most likely, there are several improvements that are desired by the club but due to financial limitations, not all can be accomplished during any one fiscal year. Projects should be given a priority rating and encompassed in the club's long range plans.

The superintendent must have all the necessary statistical information to properly develop and present his budget. He should have the supporting data that will properly relate to current economic conditions. This information must be transmitted to club officials who will be establishing club policies and giving final budgetary approval. After the budget has been approved, it is the superintendent's responsibility to develop a maintenance and project program to accomplish the club's goals within his budget's financial limits. Once the budget is adopted, the superintendent should keep the club informed as to the status of projects and normal maintenance and the effects of the economic conditions upon the budget and club plans.

While on the subject of budgets, knowledgeable club officials realize that if the level of maintenance is to remain the same, upward adjustments in the "double digit" area are required. On the other hand, if the club does not wish to raise the budget sufficiently to reflect the current economy, then club officials must assume responsibility for reducing its level of maintenance and corresponding member services.

Clubs are facing tough decisions as to whether to expand services, remain at the same level, or even reduce services in view of the current economic conditions. There are no easy answers.

FERTILIZERS AND CHEMICALS

Fertilizers are one of the basic supplies needed to maintain a golf course, and presently we are facing serious problems. The fertilizer picture is grim due to:

1. Skyrocketing prices which have risen over 300 per cent for some fertilizers recently.
2. Shortages caused by limited supplies coupled by increased demands.
3. Government intervention is possible with controls being placed on non-farm use.

The situation is constantly changing and the superintendent must keep abreast of the latest developments in order that he provide the best possible management.

Most golf course superintendents have established a fertilizer management program; i.e., a planned program having a built-in flexibility to permit on-the-spot adjustments when and if they become necessary for turfgrass production. The program takes many factors into consideration, including:

1. Species of grass.
2. Grass usage.
3. Soil test results.
4. Physical conditions of soil.
5. Chemical properties of soil.
6. Length of growing season.
7. Weather

Providing the best he can . . .

8. Types of fertilizer available.
9. Fertilizer costs.
10. Budget.
11. Labor availability and cost.
12. General management program.

It has been said, "Don't guess, soil test." Soil testing is an integral part of a fertilizer management program. Usually it is only necessary to soil test once every three years, unless one is on a strong soil corrective program. The results of the soil tests should only be part of the total information necessary for the establishment of a good fertilizer program.

The determination of the proper rate of application is very important. If one were to plot on a graph the plant response versus the rate of fertilizer application, one would find that many times the rate of application being presently used is on the flattened out portion of the curve. Reductions in fertilizer rates might not significantly reduce plant response.

I would like to suggest that superintendents experiment with a reduction, try 10 per cent, and see if there is a significant change in plant response. If a 10 per cent reduction doesn't significantly affect the plant, try 15 per cent. Keep reducing your rates until you notice a detrimental change in the plant, then increase your rate slightly.

Some of the first signs will be a reduced rate of growth and a decrease in plant color. A reduced rate of growth will also decrease the plant's ability to recover from traffic and wear marks will start to appear. Certain diseases are more prevalent under reduced fertilization while the reverse is true for other diseases.

The timing of fertilizer applications is even more critical in order that the plant can make maximum use of the applied fertilizer. Accurate application methods are very important. This means good equipment, proper calibration, well-trained crews and correct application procedures. Constant checks should be made while the fertilizer is being applied to ensure accurate applications.

Reducing the amount of thatch will increase the amount of fertilizer available to the living plant.

Increasing the height of cut slightly will help make the plant better able to take in fertilizer. This decision presents an adverse situation for the golfer and should only be a last resort consideration.

Water has a leaching effect on fertilizers. Therefore the conservative use of water in irrigation will allow more plant usage of the fertilizer applied.

THE GOVERNMENT

Government, at both the state and federal levels, is playing an ever increasing role with the

with what he has to work with.

maintenance programs on our golf courses. Government intervention is having its effect on just about everything we do, from the chemicals we use, the design of our equipment to our management practices. These governmental actions are having significant economic effects on our industry.

Governments have banned and restricted production of several chemicals used on the golf course. They are continuing their investigations.

For example, mercury-based chemicals, which have had a record of safe use on our golf courses as a broad spectrum fungicide are now banned or restricted in several states. The federal government will conclude hearings on mercury this June.

Chlordane, already restricted in some states, is under investigation at the federal level. They will start hearings later this year. Chlordane is a long-lasting insecticide that has been very valuable in the control of turf insects on golf courses for a number of years. There are no comparable products on the market.

The Williams-Steiger Occupational Safety and Health Act of 1970 (OSHA) adopts standards, and among other methods for accomplishing compliance, conducts inspections of workplaces, including golf courses, to determine whether standards are being met.

For many clubs, the cost for compliance has been very high. The cost if one is found in violation is very high. OSHA officials place the country club industry in the high risk category for fire and a medium risk for accident.

While many of the government's actions have served as useful instruments in upgrading the standards of our industry, others have had questionable value. In any case, the golf course superintendent has the added responsibility of keeping informed on all such regulations and he must make adjustments in his managerial techniques in order to continue to operate within the law.

SUMMARY

We are moving through a period of serious economic conditions for golf clubs. Our changing times necessitate a complete review of each operation. The golf course superintendent must keep abreast of all the latest developments. He must constantly strive to improve his managerial techniques by finding new and innovative ways to continue to manage the golf course within the bounds of financial stability.

In the philosophy of the golf course superintendent, today's challenges are today's opportunities. Today the most stimulating opportunity presented to the golf course superintendent is to overcome the many obstacles facing the golf industry.

Scalping on greens as a result of winter play.

A Winter Course for Your Club

by WILLIAM G. BUCHANAN
Eastern Agronomist, USGA Green Section

Golf in recent years has become a game played by millions, which is good in many ways. It does, however, create some problems, especially in the winter when many northern courses close. With more involvement, naturally there is a tendency to want greater use of each golf facility and to keep the course open for play all winter. Significantly greater numbers want to play almost any day when the course is clear of snow, regardless of the weather. This has become a universal problem for golf course superintendents, club managers and club officials.

Sound arguments can be summoned both for and against keeping a course open in winter. Golf is always a relaxing source of recreation regardless of weather; golfers want to keep their swings grooved by playing in the winter; club dues are climbing, hence the argument for increased use of the facility. A lot of golfers want to play all year, and perhaps something should be done to accommodate them. If the golf course is closed, they want to know why. What are the problems? Why close the course for winter?

Principally it is a case of possible damage to the turf. Without question from the agronomic point of view it would be in the best interest of everyone to keep play off the regular greens in winter. Winter play by even a few golfers can affect the quality of the course during the remainder of the year.

Perhaps if we are to have winter play, we should have a winter golf course. It could be laid out specifically for winter play, its holes interwoven among the holes on the regular course so that it avoids most of the controversial problems of playing the regular course in winter.

Take the regular greens and tees out of play completely, then design a shorter course within the framework of the regular layout. Make it

short so that it requires less time to play. Make it a course on which you can score about the same as your summer score.

How can this be done? It need not follow the regular course; it could go off in any direction bringing many new hazards into play. Begin planning in the spring. Select level, well drained areas in fairways for tees and green sites, and top-dress with sand at the rate of two cubic yards per 5,000 square feet in March, April, May, September and October and they should be acceptable for play from November through the winter. This presents all sorts of possibilities—you can tuck winter course greens behind fairway bunkers, or near other hazards to make the short course quite interesting. Winter greens need not be as large as regular greens, but they should be reasonably level and smooth enough to putt. Winter greens might be 2,000 square feet in size with a 2,000 square foot collar in order to provide a target approximately the same size involved in summer play, but one that requires less management.

If a winter course is established and is open to play regardless of weather, it takes some pressure off management. There are no decisions to make, no arguments concerning play on any given day. Come to think of it, the short course could also serve to play during adverse weather in any season! So why just one course? Why limit so great a physical plant to just one course when the question of winter play on regular greens and tees at many clubs is so explosive?

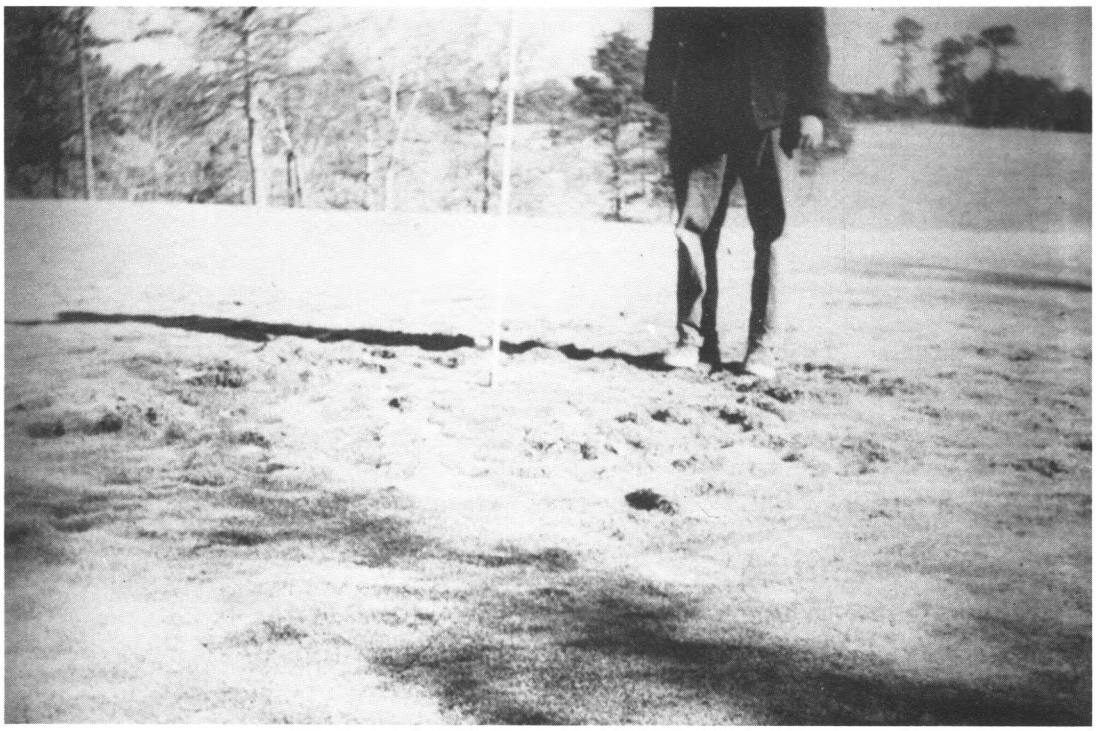
What effect does winter play have on regular greens? When are they safe to play; when are they unsafe?

Because there are so many variables, it is very difficult to precisely answer the question of "Play or no Play." The variables include the soil—its physical makeup, its physical properties and its moisture retention qualities; the grass plant—whether it is *Poa annua,* bentgrass, or a combination of the two; play—the amount and duration; and finally the weather—its extremes and fluctuations.

In the case of weather, changes occur daily or even hourly. Play at one time may cause no problems, but play even an hour or so later when conditions become unfavorable could cause serious problems to the soil and grass. The following reasons simply and basically outline the agronomics of it:

1. If the grass plant is hurt or even worn, at these times there is little or no regenerative growth to replace the injured tissue that has been insulating the plant's critical growing point or crown. The crown is

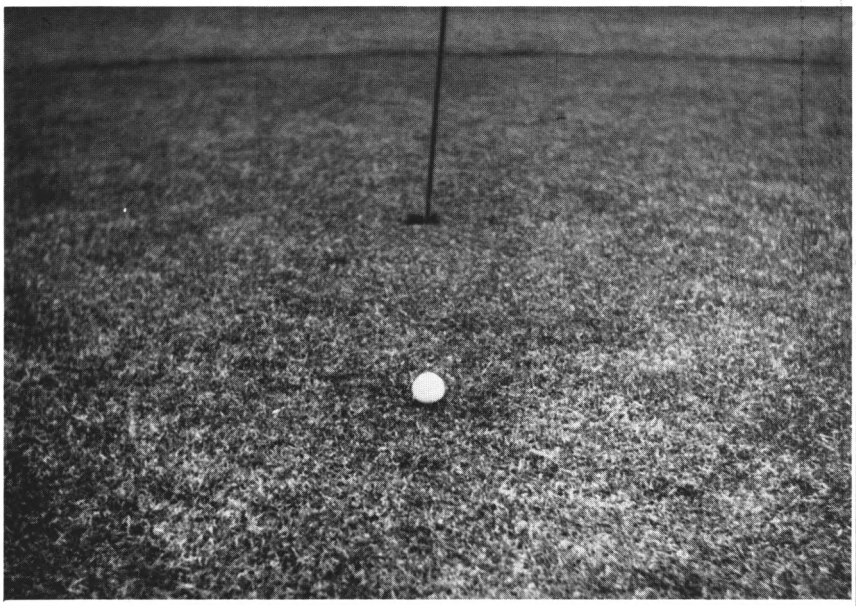
Winter play on greens can cause considerable damage on greens when the ground is not completely frozen.



Golf balls make ball marks in the winter as well as in the summer.

then much more susceptible to desiccation, diseases and direct low temperature kill.

2. In late fall or early winter when the frost first enters the ground, the grass blades become frozen and brittle. Traffic at these times will break and crack the stiff frozen blades, causing a rupture of the cell walls and a disruption of the protoplasym in the cell. This type of injury is sometimes referred to as "winter burn."
3. Soil, the medium that determines the performance, success and failure of the green can be severely, perhaps irreversibly harmed. Traffic on moist soil during these times of the year will result in detrimental soil compaction. As we all know, compacted soil brings on many problems.
4. Play on greens when there is standing water or slush can cause severe problems. Traffic forces this water or slush into more intimate contact with the crown of the grass plant already waterlogged. This then makes the grass plant more susceptible to ice damage and low temperature kill.



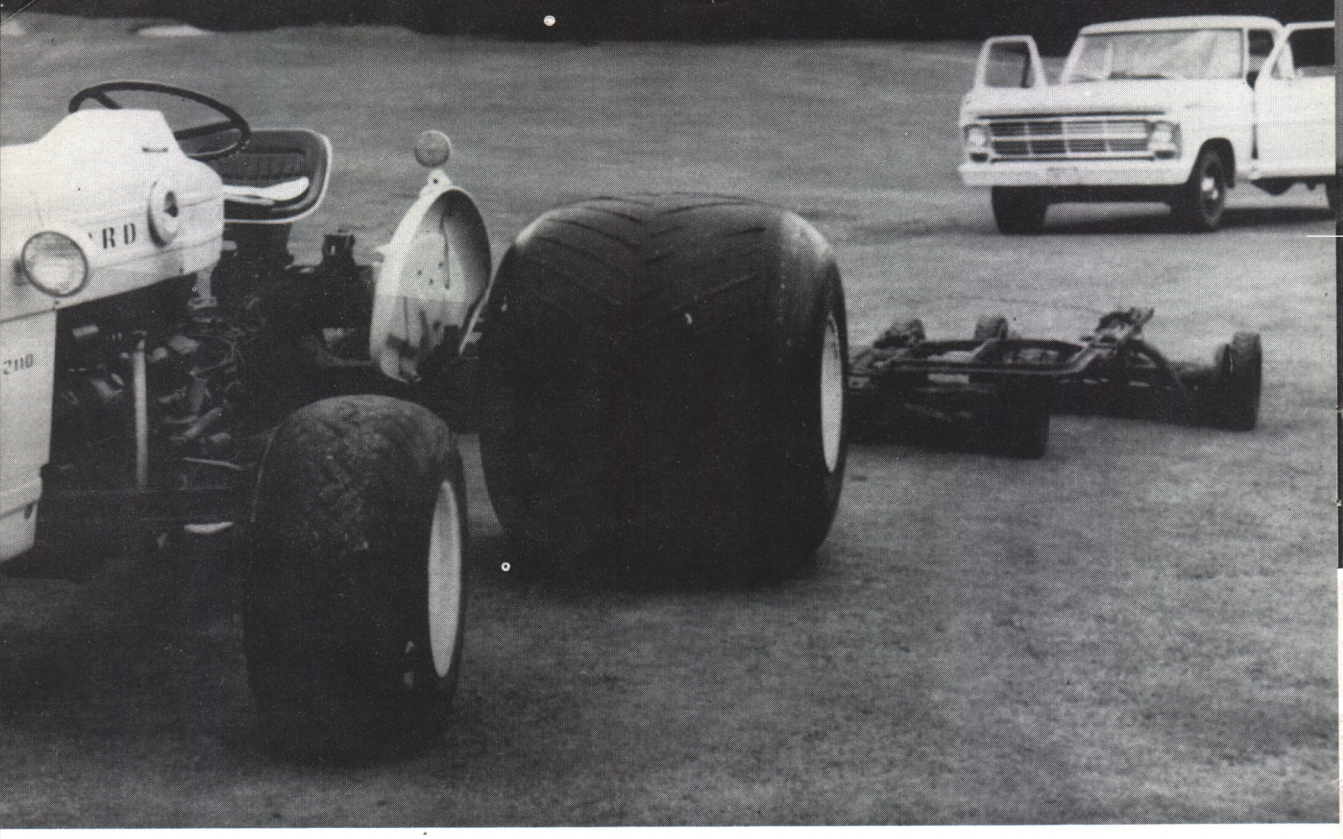
By planning and preparing a winter course, a very acceptable putting surface can be realized and no harm will come to the summer course.

Car traffic will injure frozen turf.

5. Some of the most serious types of injury occur to the grass plant and soil when the frost is just going into the ground (in the fall) and when it is just coming out of the ground (in the spring). When this is occurring, traffic on greens will tend to shear off the grass roots underfoot between the soft upper inch or two that thaws out first and the continued frozen soil further down. Besides shearing off the grass roots near the surface, soil compaction is also accelerated.
6. With any type of winter injury, there is a strong possibility that *Poa annua* will fill in the damaged areas. With more *Poa annua,* there is greater potential for summer turf problems.
7. When you have extensive winter play on greens there is usually more spring and fall maintenance work that must be performed to bring the greens up to their highest playing potential. Winter play is certainly reflected in the increased maintenance work involved in aeration, topdressing, spiking and overseeding.

We realize that golf more than ever is a year-round recreational activity. When putting greens are properly constructed and maintained, and when weather conditions are right, winter play on greens can cause few problems other than a browning of the turf (winter burn). However, when conditions are not favorable, especially when the frost is just going in or just coming out of the ground, major problems occur. If play is allowed on regular greens, the days must be carefully chosen. Someone must make these day-to-day decisions with the future condition of the course in mind. It should not be kept open or closed simply because a nearby course is open or closed. Each course is an individual problem.

One way to insure against possible problems is to have and to use winter or alternate greens. These greens should be used the entire winter season or when the conditions for play on regular greens are unfavorable and injury to them could occur.



What's Going On in the Field

PANEL MEMBERS:
Holman M. Griffin, Mid-Atlantic Director
James B. Moncrief, Southern Director
F. Lee Record, Mid-Continent Director
Carl Schwartzkopf, USGA Agronomist
Stanley J. Zontek, USGA Agronomist

MODERATOR:
Wm. H. Bengeyfield, Western Director and Green Section Publications Editor

Bengeyfield: Gentlemen, our topic is "Economy Measures for Survival." As you travel this country, how much do you find golf clubs are planning to cut back on their 1975 budgets?

Moncrief: There is no question in my mind that most golf course maintenance budgets are going to remain status quo at best in 1975, if not actually reduced. Both resort and private courses are still going to provide the very best they can in actual playing conditions and quality, but the bloom is off the rose. Overall, I hear of budget cuts from 10 per cent to 20 per cent.

Record: In the Midwest we hear the figure of 10 per cent to 12 per cent budget cuts for a number of golf course maintenance programs. This may be accomplished either by using less manpower on the course, by cutting down on maintenance requirements such as narrow fairways (more roughs cut less often), less raking and general maintenance of bunkers, and greater use of labor saving equipment.

Zontek: An increasing shift to greater mechanization and smaller maintenance crews is definitely underway. And the manufacturers of equipment should be commended for the leadership they are providing. We now have aerators, top-dressing machines, sprayers, mist blowers and mechanical bunker rakes all able to move faster and get the job done more efficiently.

Schwartzkopf: Greater productivity of the worker is the key to maintaining good turf within a reasonable budget. For example, not every one may feel the triplex putting green mower is the greatest thing to ever happen to greens. But one man does get the job done

quickly and the machine is ideal for Saturday and Sunday use on greens. It also does an excellent job of vertical mowing and spiking the greens as well as regular mowing of tees! Because this machine increases productivity, it must be a "plus" piece of equipment.

Griffin: When discussing budgets, I frequently hear club officials and green chairmen comparing their course budget with the club down the road or others in their area. They seek an average figure and then compare their costs to it. But before this technique is followed in judging whether a budget is too high or too low, you might consider that an average budget will give you an average golf course. But even this is not necessarily true. There are hundreds of items that can cause a budget disparity from one course to another. Chevrolet and Cadillac are both General Motors products with a great many essential features in common. They do somewhat the same job, but there is a vast difference in initial cost, cost of maintenance and class. This analogy applies just as well to golf courses. The style you maintain is directly proportionate to the amount of money spent.

Bengeyfield: To pursue the labor situation a bit further, what are you finding in regard to women workers on golf courses?

Zontek: Female golf course workers, once a rarity in the Northeast, are now becoming more and more common. Because golf course work is quite seasonal and manual labor jobs in other industries frequently pay more, the male labor pool is often limited. Female labor on the other hand is usually available, and at prevailing country club wage scales, is in many cases higher than a woman can command as a waitress, counter clerk or even a typist. Remember, women deserve and should get, by right and by law, equal pay for equal work. The woman job pool is made up of those looking to supplement their family income, women who like outdoor work and more and more frequently, college women who have graduated in horticulture or agronomy and are seeking practical experience in their field. Where female workers have been employed on golf courses, their work has been reported as generally very efficient, neat, reliable and conscientious.

Bengeyfield: 1975 is going to test the talents of the golf course superintendent in many ways. One of them is the fertilizer shortage. What are your views on it?

Moncrief: The overall fertilizer situation, as far as I can see, will not be much different from what it was in 1974—high prices and still a tight supply. Golf courses are definitely cutting back on nitrogen use. The talk of controlling and channeling all fertilizers into farm crop production is disturbing to say the least. According to the Fertilizer Institute, Washington, D.C., only 3 per cent of all fertilizers used in the United States go into non-farm use. Of this amount, less than 1 per cent is concerned with turfgrass production.

Robert Steiner of the U.N. Food and Agricultural Organization says the real problem is that the developing nations are broke and shipping costs are the main issue.

Schwartzkopf: The smart superintendent will anticipate his needs and take delivery whenever the material becomes available. Use soil tests to determine P and K needs and, if possible, make maximum use of effluents and sludges.

Record: Along that line, when fertilizers became short in 1974, superintendents began thinking of what alternatives they might use to help tide them over until the situation was once again stable.

One superintendent in Northern Illinois turned to his City's waste water treatment plant to see if the activated sewage sludge which they had would be available; it was. Over 100 cubic yards of material was brought to his maintenance area and stockpiled for fall use. The sludge, which was digested by the aerobic method, was very odor free and in granular form.

The analysis of the sludge was 1.7 per cent nitrogen, .89 per cent phosphorous and 1.6 per cent iron. Heavy metals such as cadmium, mercury, etc., were not of concern; a city technician checks daily for their toxic levels. When fall came he applied one pound of actual nitrogen per 1,000 square feet to the rough areas; approximately 2,600 pounds per acre. There was a problem with debris found in the sludge. However, at the moment, the superintendent feels the positive aspects of this fertilizer source outweigh the problems. The results of his endeavors will begin to show in 1975. Will he continue using this material in roughs for the future? I believe so. As far as using the material on fairways, tees or greens is concerned, it is not practical to do so because of the tightly mowed turf.

Griffin: There are many ideas which come up from time to time for saving money, but most of these are dependent upon an additional outlay of cash to obtain greater savings. Take the fellow who needs two business suits and sees a sale on $200 suits for half-price. The two suits he needs cost $200, which means he has also saved $200. If he buys ten suits, he can be the best dressed man in town and save $1,000! The trick here is to establish the real need and supply that need with merchandise at the best possible price. If he only needs two suits, the $1,000 "saving" is really excessive spending. What we are really looking for is a means of cutting maintenance costs that are more or less fixed while still maintaining or improving the quality of our operation.

Bengeyfield: Thank you gentlemen, our time is up.

Utilization of all water sources is becoming necessary.

The USGA Green Section Turfgrass Service for 1975

The Turfgrass Service of the USGA Green Section again enjoyed an increase in total subscribers last year and looks forward to even greater membership support in 1975. It is the only non-profit advisory agency devoted solely to golf course turf, its playing conditions and its management. It has nothing to sell. The eight Green Section agronomists cover the nation and have made nearly 30,000 direct golf course visits to subscribing clubs in the past 23 years! Every USGA Member Club should subscribe to the Service. The cost is less than 1/3 of 1 per cent of most golf course maintenance budgets today. Why not put this highly trained team to work for your club this year?

Turfgrass subscribers receive the following benefits yearly:

1) Several direct conferences with a Green Section agronomist, in this manner:
   A) A scheduled half-day, on-the-course consultation, followed by a written report from the agronomist to the Course Superintendent and Green Committee Chairman or club representative. Second visits are available if needed at no additional charge and at the club's request.
   B) Consultation with the agronomist at local group meetings and turf conferences.
2) Assistance by correspondence and telephone.
3) A subscription to the USGA GREEN SECTION RECORD, dealing with golf turf affairs, six times a year, addressed to the Golf Course Superintendent. (This is in addition to the subscription sent to the Green Committee Chairman in connection with USGA Membership.)
4) A voice in the direction of turf research whose results benefit golf courses. The subscription fee covers all services and expenses; there are no extra charges for travel. (The fee for the Green Section Turfgrass Service is additional to dues for USGA Membership). A list of regional Green Section offices can be found inside the front cover.

APPLICATION FOR TURFGRASS SERVICE OF USGA GREEN SECTION
(Open to USGA Members Only)

Date_____, 19___

Full Name of Club or Course_____

Permanent Mail Address (street or box)_____

Post office _____State _____ Zip_____

Application authorized by: _____Title _____

Course Superintendent_____

We hereby apply for the Turfgrass Service of the United States Golf Association Green Section and certify that we are eligible for the class checked below.

We enclose the fee (see schedule below) for the current year ending December 31. The USGA GREEN SECTION RECORD is to be addressed to our Golf Course Superintendent (this is in addition to the subscription sent to our Green Committee Chairman in connection with USGA Membership).

This application is automatically continuous from year to year unless interrupted by advance resignation.

Check Proper Class:

_____ Less than 18 holes $280
_____ 18 to 27 holes $360

More than 27 holes:

_____ 36 holes $385
_____ Per regulation course in addition to 36 holes . . . . . $ 75

Please send receipted invoice

If a subscribing member feels it requires a second visit, or if the appropriate USGA agronomist feels a second visit is required, it will entail no additional charge. For each visit after the second, the fee will be $200.

USGA GREEN SECTION RECORD
MARCH 1975

TURF TWISTERS

WHEN CONTROLLING POA ANNUA

Question: I plan to experiment with some of the pre-emergence herbicides for *Poa annua* control on my greens. Just to be safe, is there anything I can apply after the herbicide has been put down to neutralize its action if too much injury begins to occur? (Conn.)

Answer: Yes. When using the bensulide types of herbicides (like Pre-San or Betasan) you could apply 5 pounds per 1000 square feet of activated charcoal. To avoid a mess, spray it on using a lot of agitating water. Then irrigate it well to get it into the thatch.

IN THE METRIC SYSTEM

Question: With the increased use of the metric system in turfgrass research and information disseminated at turf conferences, what are some handy conversion units one may use? (Minn.)

Answer: For quick reference and easy conversion, the following units may be helpful:

1 fluid ounce	=	30 milliliters
1000 sq. ft.	=	90 square meters
1 pound	=	0.45 kilograms
1 quart	=	0.95 liter
1 acre	=	0.4 hectare

WITH DIESEL VERSUS GAS

Question: With the fuel crisis again on our minds, the idea of using diesel tractors has been raised. Are they any more efficient? (Long Island, N.Y.)

Answer: At one time they could have been, but with the overall scarcity of all types of fuels and with the price advantage per gallon narrowing, any real advantage is apparently gone. Research done at the Ag Engineering Department of an eastern university has found that, in the long run after some years of service, the operating cost for fuel, maintenance, parts, labor and down time, the gas and diesel-engined vehicles were very, very similar. One other point; when diesel fuel is used, two supply tanks are needed in the maintenance area along with someone readily available to repair diesel engines. Diesels are used to power some golf course equipment but there is apparently no great gain in overall long term efficiency.