

THE GREENERSIDE

Official Publication of the Golf Course Superintendents Association of New Jersey

Turfgrass can safely clean our water supplies

Editor's Note: The following article by Dr. Thomas Watschke contains information that would be of considerable interest to many members of your club and certainly to your greens committee. It's been reproduced with permission in the "The Greenside" as it appeared in the Spring 1990 issue of the "Journal of Environmental Turfgrass." See my editorial for details on this interesting magazine.

Finding 1: Water running off or passing through a well managed lawn is not likely to be of significantly lower quality than the tap water available in many cities.

Finding 2: Most chemicals applied to turfgrass are trapped within the thatch and rootzone areas of the plant and do not contaminate water supplies.

Finding 3: Lawns established with turfgrass sod are up to 15 times more effective in controlling runoff than seed-established lawns, even after three years.

Fears of adding to our pollution woes from homeowner or commercial lawncare are greatly unfounded and overstated based on the results of a three-year study of water quality impact conducted at The Pennsylvania State University. In fact, the results show that well managed turf areas have very little runoff and virtually no potential for chemical contamination. Applications of these findings to land-use, city planners and environmental interests are very promising.

Funded in large measure by the U.S. Geological Survey, this study was initiated in 1986 to examine the water quality impact of pesticides and nutrients used in the urban landscape. A total of nine test plots, with slopes ranging from nine to 14% were prepared for the study. Water runoff and leachate trapping and measuring devices were installed on each plot, followed by the installation of identical irrigation systems and soil preparation. A sophisticated array of scientific instruments and specialized computer apparatus were connected to monitoring devices to measure and record what was taking place on each test plot.

Three of the plots were seeded with a mixture of Kentucky bluegrass/perennial ryegrass/fine fescue, while three others were seeded with a "contractor" mix of annual rye, common Kentucky bluegrass and creeping red fescue. The final three test plots were covered with three-year-old

turfgrass sod grown from a blend of 100% certified Kentucky bluegrasses.

The plots were mowed weekly at a height of two inches and given four annual treatments of pesticides and fertilizers in accordance with label recommendations.

After establishment, irrigation was applied only when the need to collect runoff was scheduled (two days after the chemicals had been applied).

RUNOFF RESULTS

To examine the potential effects of turf on water quality as a function of runoff, Penn State researchers used

(Please turn to page 8)

In this issue

May • June 1991
Volume 14 Number 3



Editorial	2
President's Message	3
GCSANJ News	4
Turf Research Foundation Grant	7
GCSAA News	10
Superintendent Profile	11
Audubon Cooperative Sanctuary Program	12
Three important words	14
X marks the spot	15
Jim Gilligan's Column	16

THE GREENERSIDE

GCSANJ Newsletter is published six times a year by the Golf Course Superintendents Association of NJ, 66 Morris Ave., P.O. Box 359, Springfield, NJ 07081

*Ilona Gray, Editor
Glenn Miller, Ken Krausz,
Newsletter Business Staff
John Fenwick, Jim Gilligan,
Edward Walsh, Shaun Barry,
Paul Powondra
Contributing Writers*

*Please address inquiries to:
The Greenside, Editor,
P.O. Box 3672, Wayne, NJ
07474-3672.*

*For Ad Placement: Ilona Gray,
(201) 595-7172*

*Art and Typography by
Association Management
Corporation, Springfield, NJ*

© 1991, THE GREENERSIDE

GOLF COURSE SUPERINTENDENTS ASSOCIATION OF NEW JERSEY

66 Morris Ave., Springfield,
New Jersey 07081

Officers

*David Pease, President
Chris Carson, Vice President
Thomas I. Grimaldi, CGCS, Secretary
Martin G. Maniell, CGCS, Treasurer
Stephen P. Finamore, CGCS,
Past President*

Directors

District 1	District 3
Ken Krausz, CGCS	Paul Powondra
David Mayer	Glenn A. Miller
District 2	District 4
Lawrence W. Dodge	Robert Prickett
Chris M. Gaynor, CGCS	John Carpinelli

Executive Secretary

Judy Policastro

Commercial Representatives

Steve Chirip Shaun Barry

Opinions expressed in this Newsletter are the opinions of the authors and do not express the opinions or policies of the GCSANJ Board and its membership.

EDITORIAL



Important Benefits of Turfgrass

Golf courses have always been recognized as refuges for birds, some of which are considered desirables and others as unwelcomed guests. Whatever your opinion is of our feathered visitors, they are a unique piece of the urban ecological scene and often a good indicator of the quality of the environment in the area. The role of the golf course as an island of green amidst the asphalt and concrete of our state should not be underestimated. An ambitious cooperative program between the New York Audubon Society and the USGA has been established to work toward enhancing wildlife and habitat potential in golf courses. A separate article in "The Greenside" gives some details on the exciting program.

It's great to know that the same agronomic features of a good course also represent good ecological practices. Growing quality turfgrass helps improve the environment in at least nine ways: (1) by providing cooling effect during hot summer days; (2) grass blades take up carbon dioxide and some airborne pollutants and return to the air pure oxygen. A family of four can have their oxygen needs supplied by as little as 2,500 square feet of turf; (3) turfgrass can trap tons of dirt and dust; (4) playing on turf is safer for man and animals than artificial surfaces; (5) absorbs rainfall six times more effectively than a wheat field and four times more effectively than a hay field, which means sodded areas prevent runoff and soil erosion; (6) recovery rates among hospital patients are often quicker when their rooms view a landscaped area than patients with non-landscape views; (7) since 90% of grass growth is in the roots, turf always puts more into the soil than it takes out and, therefore, helps build the soil; (8) turfgrass root mass and supported microbes act as a filter to capture and breakdown pollutants which would otherwise enter the ground water; (9) quality sod provides an insect and worm population that supports birds and other wildlife.

Golf courses provide a link between the urban inhabitants and their countryside heritage by its yearly cycles of growth and color changes which can lift the human spirit and effect peoples' moods through feelings of serenity and privacy.

By practicing the art and science of good golf course management, the golf course superintendent is today's most productive urban ecologist.

Regarding this month's cover story, which was reprinted from "The Journal of Environmental Turfgrass", this scientifically based and objective information source is available from the American Sod Producers Association located at 1855 - A Hicks Road, Rolling Meadows, Illinois 60008, (708) 705-9898. This journal has been written to help educate the public to the environmental benefits of turfgrass. I particularly like the Volume II, No. 1, Spring, 1990 issue and refer to it frequently.

ILONA GRAY EDITOR

PRESIDENT'S MESSAGE



HOLIDAY INN ANYONE?

David Pease
President, GCSANJ

As a young person growing up in New England, there was a place where the men and women of the field could meet for business and social purpose.

That place was called the local Grange.

We, as golf course superintendents, are also individuals of the field. Much like the farmers of New England, we have our own meeting facilities. Although the property and structures are not specifically owned by the Association, their use has been available to the golf course superintendent.

Golf, being the crux of our existence, has been the focal point of our meeting sites. Having monthly meetings at member clubs and golf courses has provided a proper atmosphere for continued Association business. Association business is not limited to the fellowship amongst members. Educational experience tops the list for congregating. The educational experience is gained through lectured guest speakers, or the swapping of ideas and techniques through course observation and conversation.

Over the ten years I have spent as a board member, one of our major problems has been acquiring monthly meeting sites at golf courses. We, as an Executive Board, cannot take the soft-boiled approach to the lack of meeting sites. The yolk of the issue is that we are now an endangered species looking for a nesting site.

I come to the general membership with a cry for help. The difficulty to obtain monthly meeting sites is at an all time high. This is not a new problem; we have been plagued with this problem for years. The "MEETINGS & SPEAKERS" Committee has worked long and hard with their attempt to obtain meeting sites. Advance scheduling has been difficult. The date of any particular meeting is pursued over a year and half in advance. Lack of support for meeting sites is just part of the problem. Cancellations and following the guidelines set forth by the surveyed membership are all hurdles the committee is faced with.

An informational survey was sent out to the general membership last fall. The "MEETINGS & SPEAKERS" Committee polled members on several issues. In particular, the cost of monthly meetings, meeting agendas and meeting formats. Based on the review of that information, meeting agendas and formats have been modified. The difficulty arises in trying to keep meeting cost down, coupled with permissible access to golf courses and clubs.

The bottom line is that the association has no port to anchor ship. Optional meeting sites would be hotels, fire houses and educational facilities, such as universities and high schools.

The Association applauds those individual members and Clubs who are constantly offering their facilities to the Association. We have over 200 potential golf course meeting sites within the association base. We need to tap that resource to lessen the weight of scheduling and to spread out the burden evenly and equitably.

I hope the lack of potential meeting sites is due to ignorance of the problem. A recent survey was compiled by Dave Mayer and Shaun Barry. This survey was sent out to members with golf courses. It is imperative and I urge all members to respond to this most important request. As an Association, we need to know where we can hang our hat, so knowledge can be obtained within the familiar surroundings of the golf course environment.

South Richmond Nursery Corp.

**ACCEPTING BID PROPOSALS
FOR 1991 PROJECTS**

GOLF COURSE RECONSTRUCTION

Green & Tee Expansion • Cart Pathways
Drainage • Sand & Grass Bunkers

BULK DELIVERED MATERIALS



(800) 552-9200

(718) 317-1400

INSIDE NY

SERVING THE TRI-STATE REGIONAL AREA



GCSANJ NEWS



MEMBERSHIP AND ROSTER CHANGES

Please join "The Greenside" in welcoming the following new members.

Golf Course Superintendent Category A

Joe Henry	Concordia GC
Michael Kline	Desert Highlands

Golf Course Superintendent Category B

Ken Sutherland	Tamcrest CC
----------------	-------------

Golf Course Assistant Superintendent Category B-1

Michael P. Juliano	Knickerbocker CC
Clark Weld	Pine Valley GC
Joe Cotone	Plainfield GC
James Sturm	Brooklake CC
Tim Garceau	Ridgewood CC
Kevin Hoban	Glenwood CC
John Challenger	Rumson CC

Comercial Category C

Blair Quinn	Wilfred MacDonald, Inc.
Dennis Wagner	Finch Golf and Turf
John Czerwinski	Golf Cars Inc.
Robert A. Fisher	PTM Sales
Michelle Poksary	JEP Sales
Charles Sciara	Environmental Tank Systems
Robert Finnesy	Tree-Tech

Other Interests Category D

Thomas Sharpe	Millburn GC
Dave Renk	

"The Greenside" would also like to congratulate the following members who have had their status changed.

A special "GOOD LUCK" to these three members!

Category A to Life

Tom Murphy	Flanders Valley GC
John Edgar	Old Orchard CC
Ben Dziedzic	Monmouth Park Jockey Club

Category B to A

Mark Antonaccio	Morris County GC
Eric Tomzick	Ramsey G & CC
Chris Kunkel	Picatinny GC
Pat O'Neill	Navesink CC
Ken Krausz	Paramus G & CC

Category B-1 to B

Mark Krivos	Old Orchard CC
Durbin Lareno	Flanders Valley GC
Jim Cross	Rumson CC

Category B to D

Joe Kunkel	Drew University
------------	-----------------

Category D to C

Joseph J. Theibault	JJ Theibault Landscape Design, Inc.
---------------------	-------------------------------------

Move From District 3 to District 2

John Fenwick	Basking Ridge
--------------	---------------

PUBLIC GOLF COMMITTEE ESTABLISHED

The GCSANJ has created a new committee as part of its commitment to serving the membership. As chairman of the Public Golf Committee, I would like to hear from any and all superintendents as to any way we can help you reach your maintenance goals.

(Continues on next page)



RALPH MCGILLAN
Excavating Contractor

Specializing in Lakes & Ponds

Over 25 years experience in building new ponds,
enlarging & redesigning existing ponds.
Can get all DEP permits

(609) 655-2281
17 Stockton Drive, Cranbury, NJ

Available in
New Jersey through
**Ferli-Soil
Turf Supply, Inc.**



6-2-0
Activated Sewage Sludge

Milorganite®

METRO MILORGANITE
365 Adams St.
Bedford Hills, NY 10507

Processed Only By
Milwaukee Metropolitan Sewerage District
Milwaukee, Wisconsin



Marty Futyma
(201) 322-6132



Due to the number of rounds, limited budgets and the pressure to keep the course open (if we are not open, we do not generate revenues), public courses have some unique problems. This is not to say that a superintendent at a private course has it any easier, as we all know, but some of the problems at a public course are different than those of a private course.

If you have a solution to the always controversial starting time system (hopefully you do not have to deal with starting times), let us know. Maybe you have a good system for controlling where carts run or where hand carts are pulled. I'm trying a new system to keep hand carts off the aprons; I'll let you know if it works out.

GCSANJ is out to serve the members well and towards that end, I would like any input on this subject or any way we can help. Please send any information or questions to:

Ken Krausz, CGCS
Paramus Golf and Country Club
330 Paramus Road

Paramus, New Jersey 07652
or call me at (201) 447-3403.

THE PGA SHOW - A CHANCE TO PROMOTE

St. Patrick's Day was another in a long line of great days for some early spring golf but many took their enjoyment of the game indoors to the New Jersey PGA Show at Fairleigh Dickinson University. We, the GCSANJ, had our promotional/public relations booth set up, strategically located at the entrance to the exhibit hall. Included in the booth were examples of tools of the trade, turf management textbooks and magazines, pictures of golf courses and golf course construction, and our own VCR player, continuously showing tapes relating to our profession. Our location and the look of our booth drew many interested observers and I want to thank Ed Walsh, Chris Carson, Ken Krausz and Shaun Barry for helping me field the many questions that were asked by those attracted to our display.

The remainder of the exhibit hall was filled with booths displaying the latest in golf merchandise from clubs to shoes. Members of the state PGA were busy giving golf lessons in the back of the hall and Shaun Barry even had the pleasure of attending a press conference with Dave Stockton (captain of the Ryder Cup team) as the recipient of all the questions. Shaun said it was very interesting and he was quite surprised at the determination shown by Dave when he spoke of bringing the cup back to the U.S.

Good luck, men!

Perhaps the most important benefit derived from our presence at the show is the strengthening of our relationship with the state PGA. Many pros stopped by the booth commenting positively on both our exhibit and the work that we do. They all offered a helping hand and George Sauer, the newly elected president of the PGA, informed me that all we have to do is ask and they will be right there for us. This was, indeed, very encouraging and furthers my belief that we all need to do some more work in strengthening our relationships with our home pros. The PGA Show, however, is a good place to start solidifying what must be a relationship of mutual admiration and respect. Continued participation in this show is a must.

**CHRIS GAYNOR, CGCS
PUBLIC RELATIONS**

AQUA-FLO
Inc.

Buckner[®]
DISTRIBUTORS

- Golf Courses
- Estates
- Athletic Fields
- Commercial
- Floating Aerators
- Custom Built Pumping Systems

25 years of quality service

AQUA-FLO, INC.
320 Basin Road • Hammonton, NJ 08037 (609) 561-1777
1-800-524-0895 (outside NJ)
4155A Westfax Drive • Chantilly, VA 22021 (703) 968-7081



GCSANJ NEWS



ANNUAL CHALLENGE

Each year "The Greenside" challenges Sky Bergen of Vaughan Seed Company to collect all the names of the GCSANJ individuals who attend the GCSAA Convention and Trade Show. This year Sky found 73 members, which is quite an achievement when you consider there were nearly 16,400 people in attendance! There were a few, however, who managed to escape his vigilante vision. These are: **Jack Brody** from Atlantic Mills; the **entire staff of the Steven Willand Turf Equipment Distributor**; **Ronald Olsen** from Pocono Turf Supply; **Alan S. Beck**, Linwood CC; and **John Fenwick**. What we don't know for certain is whether these individuals were practicing stealth techniques while attending the conference or whether Sky was simply statistically overwhelmed. Sky, I hope our standing challenge will be on again for next year's GCSAA Conference

WAY TO GO, SPRING MEADOW!

Spring Meadow Golf Course has been cited for excellence in 1990 by the National Golf Foundation. The award, which recognized 50 of America's 7,796 public golf facilities, was given to only two other courses in New Jersey.

The public Golf Achievement Award program is part of an ongoing effort by the NGF to underscore the importance of public golf to the growth and enjoyment of the game in America. The NGF launched the new program by asking member facilities to describe their best promotional and operational programs in one or more of ten categories: group promotions, speed-of-play programs, instruction, tee-time reservation systems, off-peak hours promotions, course pride programs, methods of increasing capacity, course maintenance, golf shop innovations and family golf programs.

**Products
you need.**

**People you can
count on.**

Whatever your turf-management needs—from fertilizers to fungicides—Pro-Lawn has a comprehensive selection ready for quick delivery.

But our representatives think it's important to provide more than just the latest products. That's why each rep is a turf-management professional who can diagnose problems, help you determine your fertilizer, chemical and seed needs, and keep you informed of the latest research.

So don't just call a salesman. Call a turf-management expert—your local Pro-Lawn representative.

Call the Pro-Lawn rep nearest you today.

Lake Hopatcong, NJ 07849
Craig Lambert
201-663-3368

Langhorne, PA 19047
Ingrid Kern
215-750-1732

Wrightstown, NJ 08562
Brod Simpkins
609-758-7620

The future of turf management



RES. 201-992-2335

BUS. 201-227-7183

Alan G. Cruse, Inc.

GOLF COURSE & LANDSCAPE MATERIALS
DECORATIVE STONE • WHITE SAND • TOPSOIL
HUMUS-TEE & GREEN MIX • BARK MULCH
EARTHLIFE

Established 1953

460 HORSENECK RD.
FAIRFIELD, NJ 07004

★ **BENT GRASS** ★
FESCUE & BLUEGRASS

JADE RUN
TURF & SOO FARM

P.O. Box 425, Buddtown Road
Vincentown, NJ 08088

(609) 859-2400
1-800-332-1220



Tri-State Turf Research Foundation



Announces Grant

The Tri-State Turf Research Foundation has announced a research grant of \$28,500 for support of ongoing patch disease research being conducted by Dr. Bruce B. Clarke, Extension Plant Pathologist, Cook College, Rutgers University, New Brunswick, New Jersey. The award was announced on Dec. 5, 1990 at the annual banquet of the New Jersey Turfgrass Exposition in Atlantic City. In accepting the award, Dr. Clarke expressed his gratitude for continuing support from the Foundation and expressed optimism for 1991. "We have a good pesticide control program in place for summer patch. This year we want to further refine our timing and rate of pesticides and coordinate this with our cultural practices research to develop the most effective possible control program for this devastating turf disease".

Larry Pakkala, president of the Tri-State Turf Research Foundation and Golf Course Superintendent of Woodway Country Club, Darien, Connecticut, is enthusiastic about the future of the two-year old Foundation.

"We have a cooperative effort of four local asso-

ciations: the Metropolitan Golf Association; the Golf Course Superintendents Association of New Jersey; Long Island Golf Course Superintendents Association and the Metropolitan Golf Course Superintendents Association. Working together we can address turf problems common to all golf courses in our geographic area. We want to provide a vehicle for recognizing and supporting important research so that with the combined effort of golfers, golf superintendents and university researchers, we can provide the best possible playing surface for the game of golf."

Contributions to the Foundation for 1991 will be solicited from all tri-state area clubs beginning in May.

Please encourage your club to support this annual fund drive for research dollars to support our profession and professional management of turf.

GERALD FOUTAIN
TRENTON C.C.

For The Golf Course Superintendent Who Has Everything.



Only Banner® lets you prescribe just the right treatment for more than a dozen diseases.

grass roots
turf products, inc.

You can't grow GRASS without ROOTS

KEN KUBIK
(201) 361-5943

BERT JONES
(201) 686-8709

GOLF & COUNTRY CLUB SIGNAGE

INTRODUCING:

A Signage Program "Guaranteed" for the Life of Your Club.

Call for more information about our "Tomahawk" line.



DISPLAY PRODUCTS CORPORATION

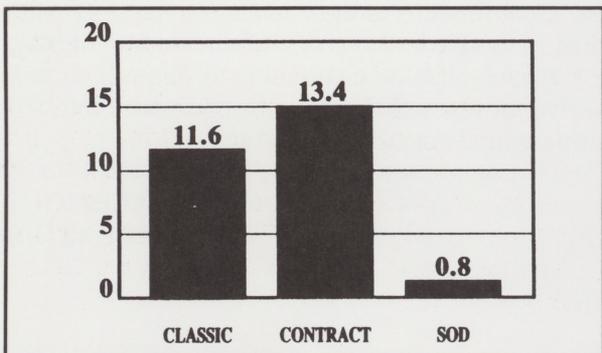
910 Fourth Avenue
Asbury Park, NJ 07712
(908) 988-5400
FAX (908) 974-8873

Turfgrass possesses cleansing possibilities

(Continued from page 1)

a carefully controlled irrigation system to uniformly apply known amounts of water to the test areas. After failing to obtain even the slightest amount of runoff from the sodded area with irrigation applications equal to a three-inch per hour rain, the system was revamped to create a six-inch per hour output in order to be able to collect runoff from sodded slopes for chemical analysis. According to rainfall probability data, a six-inch per hour storm in central Pennsylvania is not likely to ever occur.

CHART 1: RUNOFF, % TOTAL APPLIED



Comparison of runoff volumes from three turfgrass cover types/establishment methods.

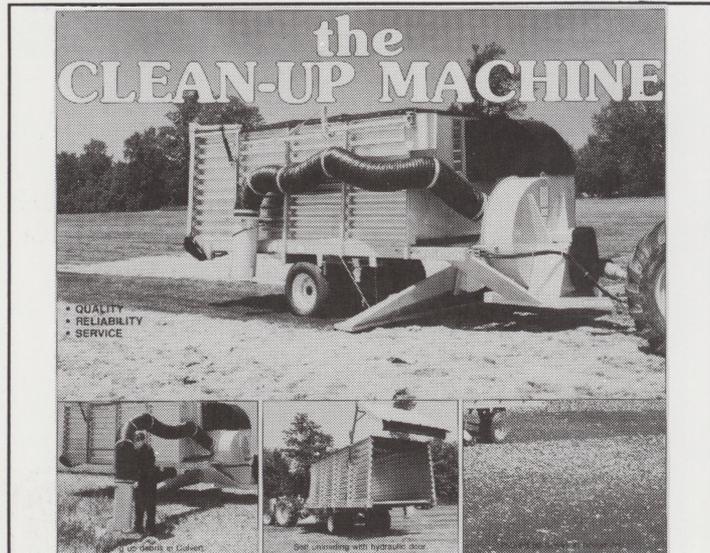
The sodded test plots proved to be 15 times more effective than either of the seeded plots at controlling runoff. Only 0.8% of all of the water applied was collected as runoff from the sodded areas while 13.4% ran off the "contractor" grade seeded area and 11.6% ran off the classic seed area. The 15-fold better runoff control advantage for the sodded slopes has significant environmental implications because there would also be less likelihood that the water would contain significant amounts of sediment, chemicals or other potential pollutants.

Leachate collection devices were also used to capture water percolating through the soil to determine its chemical composition.

CLEAN RUNOFF DISCOVERED

When analyzing the runoff and leachate at one part per billion (equal to one teaspoon of sugar in 1.3 million gallons of coffee), researchers found almost no detectable amounts of the eight pesticides and nutrients that had been applied to the turf. In fact, in a vast majority of the tests, the chemicals were not even detected or were below the federal drinking water standard (see Chart II).

(Please turn to page 9)



THE BROUWER-VAC . . . largest capacity Vac on today's market. The powerful suction head and blower provide the latest technique for vacuuming turf and hard surface areas. It provides an economical method of picking up grass clippings, leaves, twigs, pine needles and thatch from verti-cutting on sod farms, golf courses, parks and recreation areas and also trash and litter from hard surfaces in airports, parking lots, stadiums and highway shoulders.

FEATURES:
 Large load capacity
 Light weight construction
 Dual flotation tires
 Easy to operate finger tip controls
 Unloads in seconds with hydraulic driven conveyor
 80 in. floating suction head (Opt. extension to 120 in.)
 P.T.O. Driven
 Only requires standard tractor 35-45 hp

Double Eagle
 EQUIPMENT COMPANY, INC.
 285 Dayton Road
 Dayton, New Jersey 08810 • (201) 329-9292

Nutrient Pesticide	Federal Drinking Water Limit	Number of Sample Dates	Number of Dates Not Detectable	Number of Dates Below Drinking Water Limit
Nitrate-N	10 ppm	29	2	28
2, 4-D	100 ppb	24	10	20
Dicamba	210 ppb	24	8	23
Phosphate-P	N/A	29	9	N/A
Potassium	N/A	29	1	N/A
Pendimethalin	N/A	24	24	N/A
2, 4-DP	N/A	24	12	N/A
Chlorpyrifos	N/A	24	24	N/A

COUNTRY CLUB greenskeeper
Turf Products
Better Quality Turf Care From The Ground Up.

Lebanon
 TURF PRODUCTS

P.O. BOX 189 • DAYTON, NJ 08810
 P.O. BOX 180 • LEBANON, PA 17042

HOMOGENOUS BLENDED & SCU FERTILIZERS
 STRAIGHT & COMBINATION CHEMICAL PRODUCTS

Multiple purposes served by turfgrass



(Continued from page 8)

While there are no federal drinking water standards for many of the chemicals (indicated above by N/A), the runoff and leachate samples generally contained less potassium than the irrigation water that was used. This seems to further illustrate the grass plant's capacity to trap and hold many of the chemicals that a sound turf management scheme would require. It is also important to remember that the water samples analyzed were virtually collected in a situation analogous to "curb-side". In a "real-life" situation, considerable runoff water from other sources would already be in the street which would result in significant dilution of already low concentrations of chemicals.

POTENTIAL APPLICATION OF FINDINGS

When combined with the other known attributes of turfgrass such as conversion of carbon dioxide to oxygen, cooling effects, entrapment of particulate pollution and reduction of noise and glare, turf's water filtering capacities make it a very good candidate for additional environment improvement projects.

Directing urban runoff waters across turf and possibly into grass covered basins could provide not only a water cleansing effect, but also assist in:

- flood control and thereby a related reduction of waste water treatment facility requirements;
- pollution control from parking lot and/or animal feedlot runoff waters; and
- reduction of siltation and topsoil losses at construction sites, farm fields and highway rights-of-way.

While additional research is required to determine the surface areas of turfgrass needed to best serve its purposes on various soil types, grades and natural runoff amounts, considerable progress is being made in recognizing the many unique capabilities of the seemingly simple grass plant.

What has been right under our feet for many years is beginning to be recognized for the contributions it can make to improving our environment. Just as it is man who is creating environmental problems, it will be up to man to better understand and properly use the tools of environment improvement we have available to us, particularly turfgrasses.

Dr. Thomas L. Watschke is a Professor of Turfgrass Science at The Pennsylvania State University, University Park, Pennsylvania. He is the Director of the Landscape Management Research Center, where he coordinates the research activities of faculty from five departments in the College of Agriculture. He is a past-president of the Northeastern Weed Science Society and chairman-elect of the Turfgrass Division of the American Society of Agronomy. In addition to his teaching and research responsibilities at Penn State, he has written and spoken extensively on the subject of turfgrass and its role in the environment.

case
Turf Tractors

TORO

TORO
Turf and Irrigation Equipment

Hahn
Precision Spray Equipment

STORR TRACTOR CO.

3191 U.S. Highway 22
Somerville, N.J. 08876
201-722-9830

1385 Lakeland Ave.
Bohemia, L.I., N.Y. 11716
516-589-5222

Poa Free

Pennsylvania Grown PENNCROSS

BENTGRASS SOD

CALL 800-USA-TURF or 717-898-5000



NEW JERSEY SUPERINTENDENT ELECTED TO LEAD INTERNATIONAL GOLF ASSOCIATION

The man elected to preside over one of golf's largest associations wants the public to know that golf course superintendents are more than just the people who keep golf green.

"Professionalism through education" is just one of the areas that Stephen G. Cadenelli, CGCS, intends to promote during his term as president of the Golf Course Superintendents Association of America.

"I never want to stop learning," says the 55th president of GCSAA. "I don't believe there is a substitute for education. I truly believe there will be no way to survive and function in this world as a turfgrass manager without a broad educational background. If I am remembered for anything after my year as elective leader of GCSAA, I hope it is for promoting education as never before."

Cadenelli has directed the construction and management of the Metedeconk National Golf Club in Jackson, New Jersey, since 1985. He was elected during the association's annual meeting in Las Vegas, Nevada, on February 12.

Cadenelli, 42, takes the helm of the growing international association at a time when environmental considerations are a top priority for the men and women who manage today's golf courses. "I'm proud of the role GCSAA has played in the move to environmentally sound management of golf courses, and I want the association to continue to point the way. We have broken a lot of new ground for the industry and it is imperative that we continue to set the example."

PRODUCT WARNING ISSUED

We have learned that DuPont has issued an immediate recall of all Benlate 50DF, Benlate 1991 DF and Tersan 1991 DF brand fungicides. These products should not be used or sold. Superintendents with any of these products should return them to the place of purchase for full credit.

Dupont believes the products may have been contaminated with low levels of atrazine and could, therefore, injure turfgrass or other plants. The company plans to keep the products off the market until they can verify their purity. Superintendents can contact DuPont at (800) 441-7515 if they have questions.



WHITE MARSH, MD.

1-800-899-SOIL (7645)
FAX (301) 335-0164

Sterilized Top Dressing

Our top dressing is formulated especially for your area to specifications recommended by leading universities and testing laboratories.

EXCLUSIVE! All materials are thoroughly mixed and sterilized by indirect heat in our special process. The sand particles are actually coated with a mixture of top soil and peat humus for a completely homogenous mixture that will not separate during handling and spreading.

Computerized blending of soil mixtures for a superior growing medium.

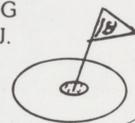
Green and tee construction materials and mixes conforming to specifications are available.

Custom on-site soil blending and testing with a portable computerized blender to meet your specifications are available.

JOSEPH M. MERCADANTE, Inc.

PAVING, EXCAVATING
SOUTH ORANGE, N.J.

762-1195



PARKING LOT AND
CART PATH

CONSTRUCTION

DRAINAGE SYSTEMS
TEE BUILDING
GRADING

SUPERINTENDENT PROFILE

GLENN MILLER CALLED TO DUTY

Back on Friday, August 24th of last year, Glenn Miller and close neighbor, Bruce Peeples, were talking about the winding down of the summer golf season. After preparing Manasquan River Golf Club for the USGA Girls Junior Tournament, as well as supervising construction of the new maintenance facility, Glenn was looking forward to easing off a bit. At 2:00 a.m. the next day, his Air Force Reserve unit at McGuire AFB was activated, and on Sunday TSgt Glenn Miller was on his way to Saudi Arabia as loadmaster of a C-141B Starlifter transport. He had absolutely no idea when he would return.

Glenn grew up in Manasquan, attending the local schools, as well as nearby Ocean County College where he earned an Associates Degree in civil engineering in 1982. He caddied at Manasquan River through high school, and in 1977, he joined the Air Force Reserve with three friends. After completing basic training and attending various USAF technical and aircrew survival schools, Glenn returned to Manasquan River G.C. as a member of the grounds crew in early 1979. Jim McNally was the superintendent at the time and Glenn's brother, Pete, was his assistant.

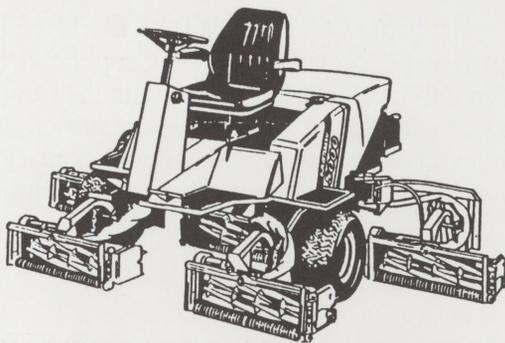
In 1982 Jim McNally moved on and Pete Miller became superintendent, asking Glenn to be his assistant. As he was preparing to get married and needed a full-time job, Glenn decided to put civil engineering on hold. The club sent him to the Rutgers Winter School in 1983 and 1984, and in December 1984, he was named as superintendent at Manasquan River, his brother having left to pursue other interests.

Since that time, Glenn has upgraded the irrigation system and refurbished the pump station, as well as instituted an ongoing tee and bunker reconstruction program. He told me that he wasn't so sure about having the USGA Girls Junior event there, but in retrospect, it was a rewarding experience. The course conditions generated numerous letters of praise and appreciation.

In discussing Glenn's Reserve duties, he pointed out that until last year's activation, he was able to meet his service obligation by flying missions on convenient week-ends throughout the year, instead of the customary one weekend per month and two weeks of active duty in the summer. That changed last August, and as this is written in early April Glenn remains on active duty status. He has

(Please turn to page 18)

NEW FAIRWAY 5000 SPECIALIZED FOR TOP-QUALITY FAIRWAY MOWING



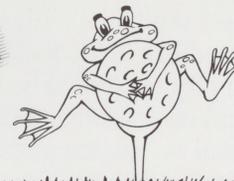
- Five cutting units, hydraulically controlled
- Wide 106" cutting width
- Excellent hill-climber
- Ultimate in operator comfort
- Three-wheel drive PLUS
- Very productive—produces top quality cut (80 cuts/meter) even at 6mph top speed
- Lightweight and compact for easy transport
- Fully interchangeable cutting units

RANSOMES
FAIRWAY

CONTACT Turfgrass Division
at

Steven Willand, Inc. (201) 579-5656

PARTAC® GOLF COURSE TOP-DRESSING



TYPAR®
GEOTEXTILES & TURF COVERS

AMERICA'S PREMIUM TOP-DRESSING
HEAT TREATED

AVAILABLE IN BULK OR BAGS

ALSO HIGH-SAND MIXES, CONSTRUCTION MIXES,
CART PATH MIXES AND DIVOT REPAIR MIXES

DISTRIBUTED IN N.J. BY:

FARM & GOLF COURSE SUPPLY
HOWARD SCOTT, 215-483-5000

FISHER & SON CO.
FRANK FISHER, 215-644-3300

GRASS ROOTS TURF PRODUCTS
KEN KUBIK, 201-361-5943

TURF PRODUCTS CORP.
ERNIE RIZZIO, 201-263-1234

PARTAC PEAT CORPORATION
KELSEY PARK, GREAT MEADOWS, NEW JERSEY 07838

908-637-4191

The Audubon Cooperative Sanctuary Program For Golf Courses

This project, which has the cooperation of the New York Audubon Association, the United States Golf Association (USGA), based in Far Hills, New Jersey, and the Golf Course Superintendents Association of America (GCSAA), based in Lawrence, Kansas, represents a fine opportunity to promote the benefits obtainable from professional golf course management.

The New York Audubon/USGA Sanctuary Program is described below complete with costs and registration information.

WHAT IS A COOPERATIVE SANCTUARY?

A Cooperative Sanctuary is a course that could be private or public. The owner, manager, or superintendent of the course has an interest in learning more about the wildlife and habitat potential of the course and a desire to work toward enhanced wildlife populations on the property. Essentially any course can become a Cooperative Sanctuary.

HOW DOES IT WORK? - The owner or superintendent must contact New York Audubon and express an interest in the program. The first step is to "register" the course with us. New York Audubon will furnish a simple Resource Inventory Workbook, which must be completed and returned to us. Information requested in the Workbook includes: A simple description of the course, a simple map of the course, a general description of the types of habitats found on the course (such as woodlands, wetlands, lakes, streams, etc.), listing of the types of wildlife presently known to utilize the property and goals for the course, as you see them. New York Audubon will help gather information concerning the course if needed, but most information in the registration process should be fairly easy to compile. After the Workbook is completed and returned, New York Audubon will review the material, and a Cooperative Sanctuary Report will be prepared for the course

and returned to course management. The report will detail steps that we recommend can be taken to enhance various wildlife habitats and so forth, to meet the goals expressed, or other goals that may be of interest to you based on the course description. Once this registration process is completed and a couple of follow-up items undertaken, the course will be "Certified" as an official Cooperative Sanctuary.

WHAT DOES THIS DESIGNATION MEAN TO ME?

Many people wonder if the designation means that there will be restrictions placed on the course. The answer to that is "NO", not by New York Audubon or the Cooperative Sanctuary Program. The only restrictions will be those that you as the owner/manager feel are appropriate. Many courses, for example, are private, and have wondered if the designation means they must open to the public at large. The answer is "NO", not unless you as the owner/manager want to open to the public. Superintendents have wondered if we would restrict certain activities on a cooperative Sanctuary. The answer again is "NO". You, as the manager, will make all final management decisions. We are merely looking for people to work within a positive and cooperative effort to enhance wildlife and habitat values of golf courses. We believe that this will not only enhance the course value for wildlife, but we know that property owners/managers that have considered wildlife in their decision making, have seen increased public appreciation and support for their efforts.

WHAT DO I GET FOR PARTICIPATING?

Each course that becomes part of the Cooperative Sanctuary System will receive a Certificate with the Cooperative Sanctuary certification number, one-year subscription to "Field Notes", our periodic Cooperative Sanctuary newsletter (the newsletter allows participants to share information

(Continues on next page)



TARGET ENVIRONMENTAL

- Environmental Audits
- Site and Remedial Investigations
- Underground Storage Tank Closures
- Environmental Drilling and Consulting Services
- OSHA Trained and Certified
- Single Source Contractor/Consultant

SERVING ENTIRE
MID - ATLANTIC
REGION

TARGET ENVIRONMENTAL CO., INC.

P.O. BOX 703/NEWFIELD, NJ 08344
NJ 609-692-7575 PA 215-735-7004 FAX 609-692-8685

MUNTHNER'S SPRAYING SERVICE, INC.

Complete Golf Course Spraying since 1947
Fairway Programs
References Available
Owner - Operator

Larry Munther
(201) 540-9764

9 Shadyside St.
Morristown, NJ 07960

Audubon Society offers special sanctuary program for golf courses

concerning their projects and ideas with others), Cooperative Sanctuary Signs, and the ability to network with many other people that are interested in the same kind of projects that you are. A sample press release for your use with local media, concerning Cooperative Sanctuary designation, will be supplied, that will send a clear message of your environmental efforts on the course. Finally, recognition on national and regional levels will be given annually through our Audubon Awards and Recognition Program. This will give recognition to those cooperators that do outstanding work on their property relative to wildlife, habitat and environmental enhancement.

WHAT DOES ALL OF THIS COST? - The Registration fee is \$100. This fee covers the costs associated with material development, printing, postage, development of the information that we will supply you concerning your course and specific projects that you can consider. After the property is registered and certified, there will be an annual renewal fee of \$100 for courses in the system to keep the property certified, to continue to receive newsletters and for new materials that will be developed each year.

For more information, contact the New York Audubon Society, Cooperative Sanctuary Program, Hollyhock Hollow Sanctuary, Rt. 2, Box 131, Selkirk, NY 12158.

FANCY STEALTH FACTS FROM FENWICK

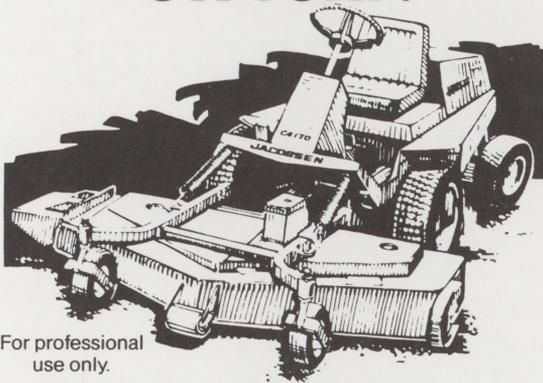
Could it be that our John Fenwick is out of Fancy Facts? This letter, reproduced in its entirety was found on his person while trying to avoid answering just this question. John obviously needs our help. So anyone who can respond to this letter is encouraged to do so. Editor

Dear Sky Bergen,

I was also at the GCSAA Trade Show in Las Vegas, Nevada. You probably did not see me because I was busy roaming for "Fancy Facts" on the trade show floor. As you know, Sky, I started to write this column to give our readers a chance to become familiar with the commercial people involved with GCSANJ. Please encourage your fellow representatives and salesmen to drop me a note at BRCC, PO Box 434, Basking Ridge, NJ 07920 and provide me with another year's worth of "Fancy Facts from Fenwick!"

Thanks,
John Fenwick

JACOBSEN. TOUGHEST CATS ON TURF.



For professional use only.

Jacobsen Turfcut Out-Front Mowers, Models T422D, T436G

■ Choice Of 22-HP Diesel Or 36-HP Gas Engine ■ Dual-Range Hydrostatic Drive Matches Traction Speed to Mowing Conditions ■ Rear-Wheel Power Steering ■ Choice Of 50", 60", 72" Rotary Decks Or 60" Fine-Cut Flail ■ Large 8.5-Gallon Fuel Tank

Wilfred MacDonald, Inc.

340 MAIN AVENUE, CLIFTON, N.J. 07014 • 201-471-0244

JERSEY . TURF . SPECIALISTS

• Deep Tine Aerofying Services •
The Solution to Compacted Soils

37A Elmtown Boulevard
Hammonton, N.J. 08037

Jack Montecalvo
(609) 567-9001

The three most important words



Ed-Ed-Ed—they are three important words. After reading the most recent edition of "The Greenside", I was saddened that Ed Walsh felt people did not like his candid expressions. Over the last 12 years as a member of the GCSANJ, Ed was the first to welcome me as a member from the other end of New Jersey. His unbiased opinions over the years have won my respect and I hope Ed continues his rhetoric in "The Greenside".

Ed, sorry, the Ed-Ed-Ed was only an abbreviation for our newly elected GCSAA President, Steven Cadenelli's three most important words, Education-Education-Education. Education, whether it be a two-or four-year college degree or even CEUs, they are only as good as the relative subjects that were studied. As a graduate from Penn State University in the "Two" year Turfgrass Management program, "Social Usage" was an important subject for an entire semester. While attending this class, I thought many topics were common sense until I started to attend meetings and educational seminars.

Seminars and meetings usually have a meal associated with them so we can continue to learn through conversation with our peers. It is at this time that the tension starts. The tension is not from what to say or who are the strangers at our table, but which napkin is mine, is he drinking my water, is that my roll, which is my salad, why am I always left with the little fork to eat my entree? I

have never been to a meal without someone at the table using the wrong silverware or someone eating my food. If something is so difficult and we spend an hour of each meeting eating, maybe we should get CEUs for starting and finishing with the correct table setting and food in front of our chair. I don't think the president or owner of our clubs would be happy if while dining with us, we used his napkin, ate his salad and drank from his water glass. Maybe the most important three words are Manners, Manners, Manners. Without manners, we might not get the chance for Drainage, Drainage, Drainage.

ALAN BECK, CGCS

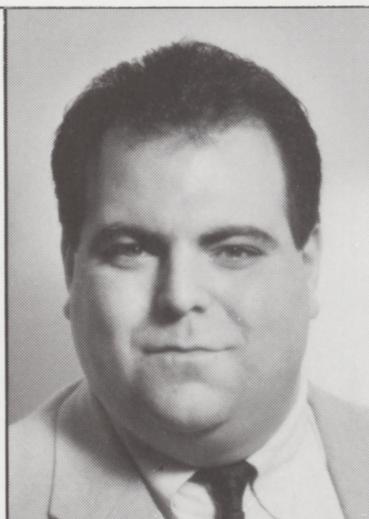
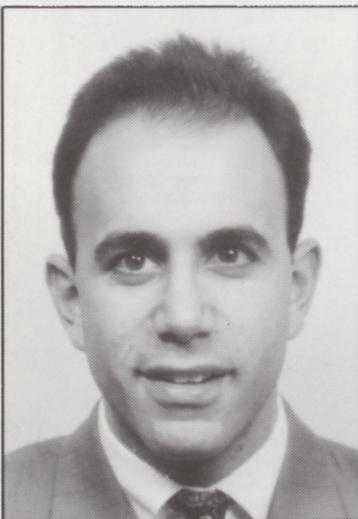
Specializing In White Trap Sand, Screened Top Soil, Washed Sand



Scale
(201) 297-3381

Office
(201) 422-3106

DALLENBACH SAND CO., INC.
BOX 333 • DAYTON, NEW JERSEY 08810



Richard Clifford *New Jersey Representatives* Michael Buchler

*We'll help you
take care of
your green*

We're the experts on personalized financial planning, salary continuation and insuring that there is a savings plan in place and ready for that

"rainy day". We want to help you plan for your tomorrow TODAY! Call us and be on your way to living a comfortable and safe life in a world full of eagles, birdies and beautiful drives.



Wilmington Financial Group

100 Chapman Road • Newark, Delaware 19714 • 1-800-727-7350



PROVIDENT MUTUAL

X marks the spot

You know you've been in this business a long time when every other call you get during the day is from a past assistant. I have always been real proud of the young men that I have been associated with over the years starting with my Colonia Country Club days right through my tenure at Ridgewood. Most of you don't know this but Dennis Krychowcky, now at Emerson (recently purchased by a Japanese company and now called Bird Hills C.C.), was the very first assistant I ever had.

When I came to Ridgewood, Dave Lerner, Rossmoor & Clearbrook, was the first assistant we hired. After Dave came Bill Luthin, Wilfred McDonald, Mike O'Connor, Basin Harbor Club, Vermont; Dave Heroian, Myopia Hunt Club outside of Boston; Joe Kennedy, Green Brook; Matt Ceplo, Westchester Hills; Dick LaFlamme, Lake Mohawk; Ray Sharo, Shemin Nurseries, Connecticut; Rick Evans, Windy Wes Golf Club, New York; and Greg Moran, Lesco. During this time, we also had some real good guys that got out of this end of the business like Bill Arnold, Dave Harrison and Paul Eckert. I've also had a couple of summer placement students who are now super-

intendents like Rob Klitz at Inverrary in Ft. Lauderdale, Florida and Bill Grace at Arrowhead Golf Club in Michigan.

The reason I mention these outstanding young men is because that is just what they are, outstanding. The ones still in turf management have made names for themselves as a professional. Each is representing our business in a way that makes this profession better for us all.

I also mention them because the people we hire and train are our future. If we look at each, assistant as a building block for our collective professions' growth, the golf course superintendent will continue to prosper. As they say in that cigarette commercial, "You've come a long way, baby". We have come a long way and we've done it through education, through hard work, through a game that has grown in leaps and bounds and, most importantly, through the future golf course superintendents we are training today.

ED WALSH, CGCS

Since 1923



Geo. Schofield Co., Inc.

P.O. BOX 110, BOUND BROOK, NEW JERSEY 08805

- White Trap Sand
- Construction Mixes
- Suprgro Topsoil
- Landscape Products
- Bagged Lime & Gypsum Products
- Top Dressing Sand
- Drainage Gravels
- Cart Path Materials
- Compost

OVER 60 YEARS OF QUALITY SERVICE

(908)
356-0858



Bentgrass Sod **Fine Fescue Blends**

Bluegrass Blends

Special Orders
Grown To
Specifications

**Tee and
Green Sod**

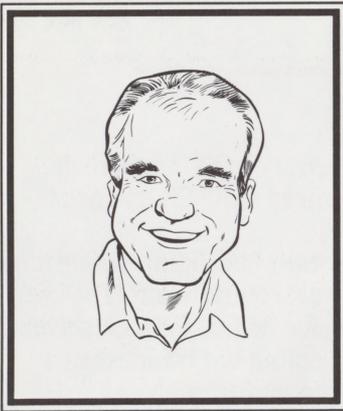
P.O. Box 418
Exeter, RI 02822

Phone 401-295-1870

or

401-789-8177

Fax 401-789-3895



Jim Gilligan's Column

What you are reading on these pages is not the usual prose of my mind but a realistic professional problem that will test my managing skills this season: "eight acres of sod laid down the last year on the slopes and surrounds of 60 rebuilt sand bunkers".

The rebuilding project is in the final phase this spring; it began last spring. Included in the project, but not discussed here, were 14 new Penncross tees, implanted on four holes. The project razed the existing bunkers and rebuilt a newly designed bunker in their place. The rebuilt bunkers are characterized by a flat sand surface with a sodded slope ascending to the green surface where it merges with the collar. At the confluence of the slope and collar, the elevations are mounded to keep surface water out of the bunker. The teeside of the bunker is level with the surrounding rough. This design concept minimizes

erosion, provides a consistent playing surface and the sand remains white.

When this design was presented to me, my first thought is they are replacing the existing sand with grass. My estimate now is that we have about 40% less sand in the new bunkers. The second thought I had was "The golfers won't be able to see the sand in the bunkers". To lessen the loss of the visual impact, we suggested using a mixture of bluegrass and fescue to provide a contrast to the monotone ryegrass/Poa turf. Our search led us to a sod field that had about 40% fescue; our hope was that the color and texture of the fescue would provide some contrast. Right now the fescues are hidden in the bluegrasses due to the establishment program that favors the bluegrass.

The turf management of the slopes on these rebuilt sand bunkers focuses on the mowing, irrigation and other cultural programs, fertilizer, biostimulants and wetting agents.

Mowing presented the first challenge. Instinctively, I knew we couldn't mow these slopes with conventional equipment, so we began a search for the most adaptable mower. I decided early to use a reel mower because of their flexibility. We ruled out rotaries because of their tendency to scalp the ridges, even the small type. We tested a number of units and decided to purchase the Ransome Turf Trak (Steiner). The Turf Trak is a four-wheel/eight-tire articulated unit with an optional three-gang reel unit mounted on the front. The operator utilizes the steering wheel and transmission stick to maneuver the unit across the slope. The eight-tire configuration adds balance and the articulation supports the unit and prevents slippage. This unit mows almost 90% of the slope and surrounds while the remaining areas are mowed with an air-flow rotary and line trimmer.

During the planning phase, there was some thought of installing a supplemental irrigation system in the new bunkers, but the thought was shelved because of scheduling and budgetary conflicts. Once the project was started and the first sod was laid on the bunker faces and surrounds, it was obvious additional irrigation would be necessary to manage the areas properly. We decided to wait until the rebuilding was completed before installing any irrigation. Coordinating the rebuilding and installing the irrigation could be a problem and we didn't want to delay the rebuilding. During the remainder of the project, the sod was irrigated manually until it knitted to the soil. There was enough rainfall last season to sustain the sod through the dry spells. A supplemental irrigation is being installed this spring.

The cultural management of these sodded areas included an application of starter fertilizer to the soil; an application of Milorganite at the half way mark (August 1990); an application of a complete fertilizer in the fall (October 1990). This spring an application of Scott's TGR

Full season, full course disease control.



RHONE POULENC AG COMPANY
P.O. Box 12014, 2 T. W. Alexander Drive
Research Triangle Park, NC 27709
919/549-2000

(Continues on next page)

Jim Gilligan's Column

will be made to all newly sodded slopes and surrounds. As an adjunct to the fertilizer, we will be applying root enhancing materials, bio-stimulants and wetting agents.

In order to improve the integration of the sod and soil, an aerification and/or spiking program will be attempted. We plan to use a Greensaire initially to prevent the sod from being torn loose; the steep slopes will present a problem; we thought a Toro Sand Pro Spiker might work. The Turf Trak with an optional spiker would also work.

The sand will be essentially maintained by hand raking. The mechanical rake will be used sparingly. The mechanical rake tends to wash the sand into the sod edges, diminishing the bunker edge. Edging the bunkers will be minimal so as not to destroy the design or to expose the soil that could contaminate the sand or to expose the sprinkler installations at the base of the slopes. We will attempt to maintain the edge by using herbicides that will prevent the bluegrasses from encroaching onto the sand.

The rebuilding of 60 sand bunkers and the new tees of four holes has changed the face of the Richmond County Country Club. It establishes a character to the golf course that had been lost through the years and it sets the pace for future changes. This project was accomplished with the foresight of the golfing members, the management skill of the professional staff and the building talent of the contractors.

PAVELEC BROS. GOLF COURSE CONSTRUCTION Co. Inc.

98 Evergreen Avenue
Nutley, NJ 07110

*Specializing in all
phases of Golf Course
Construction*

Field Drainage/Landscaping
Excavation

Tony Pavelec (201) 667-1643
Emil Pavelec (201) 939-6182

Dear Editor:

This letter is in response to some questions asked in the "Inquiring Minds" article on page 14 of the November-December issue.

I would like to give you some background information on myself: My name is Joseph A. Porcello. I work for the Essex County Department of Parks. I serve as the Superintendent of Essex County's three public golf courses and have done so for the past three years. They are Frances Byrne Golf Course in West Orange, Hendrick's Field Golf Course in Belleville and the Weequahic Golf Course in Newark.

In response to some of the questions asked, my answers are as follows:

The shortest hole of the 18-hole golf courses in the State?
Weequahic Golf Course, Newark - 5th hole - 101 yards

The oldest county golf course?
Weequahic Golf Course (9-holes at the time) - 1914
Rounds of golf: 1914 - 23,663, 1927 - 68,672
(based on County records)

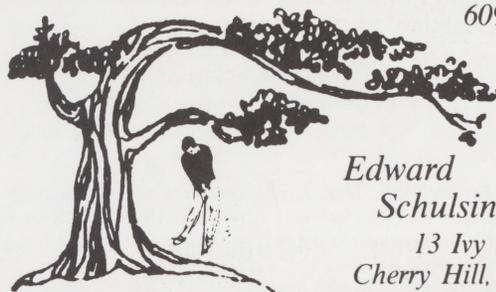
The 18-hole golf course with the least acreage?
Weequahic Golf Course - 69.4 acres

The courses with the most rounds of golf?
The Essex County Parks Department three public courses.
Combined rounds at all three courses: 167,000 in 1989

I hope some of these records hold up after all the other Superintendents around the state have sent in their information. Please feel free to call if you need clarification on any of this information.

JOSEPH A. PORCELLO

609-667-0939



*Edward
Schulsinger*
13 Ivy Lane
Cherry Hill, NJ 08002

**Horticultural Consultant
To The Golf Industry**

SUPERINTENDENT PROFILE



(Continued from page 11)

settled into a routine of working one week at the course and flying a mission to Spain or Germany and "down range" to Saudi Arabia the next. That does not preclude an occasional run to Thule, Greenland or a short domestic hop. The weekend before I visited him, Glenn had transported the President's limousine to Florida.

Glenn reflected back on the hectic days last summer following activation. He had no idea when he would be back to Manasquan River, with best guesses ranging up to three months. His assistant, Jim Cadott, with only 18 months' experience, was faced with taking temporary charge of a course that had just lost six summer helpers as well as having no idea when his boss would return. The course was preparing for fairway aeration and the weather had turned very dry. Of course, this was the time for the irrigation system to go down.

Fifteen days after he left, Glenn returned and helped Jim straighten out the problems, and then was off on another mission again a few days later. He recalled that first mission in the tense days of late August. His C-141B flew from McGuire AFB to Pope AFB, South Carolina and picked up its assigned load. As loadmaster, Glenn's

responsibility was to pre-flight the aircraft's cargo hold, supervise the loading and tie-down of all cargo and troops, and maintain the proper weight and balance for the load, all of which are critical for flight safety.

After leaving Pope AFB, the C-141B headed for Torrejon AB, near Madrid, but about 45 minutes east of the Azores, the flight engineer was stricken with appendicitis, and the crew had to turn back to the Azores to get him medical attention. They had to wait two days until a replacement engineer could be flown in, and the mission pressed on to Saudi Arabia. The 120 degree temperature and 95% humidity was like a wall of heat outside the open aircraft door, Glenn noted. That is definitely pythium weather.

As Glenn prepares for this year's golf season, he remains away every other week, usually to Spain or Germany and onward to the Gulf. He looks forward to being able to spend more time with his wife, Diane, a senior editor for a petroleum marketing information newsletter, and daughter, Diane Kathleen, now 16 months old. He does not look forward to any more sand trap jokes.

PAUL POWONDRA



SHEARON

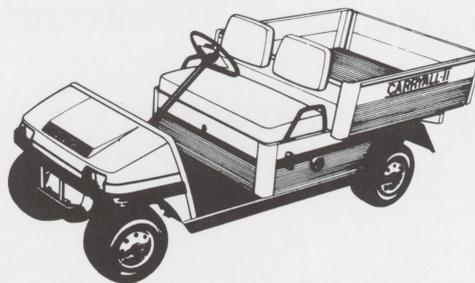
ENVIRONMENTAL DESIGN CO., INC.
5160 Militia Hill Rd., Plymouth Meeting, PA 19462

A FULL LINE GOLF COURSE ARCHITECTURAL
DESIGN-BUILD COMPANY SPECIALIZING IN:

- GOLF COURSE ARCHITECTURAL SERVICE
 - GOLF COURSE REDESIGN & CONSTRUCTION
 - GOLF COURSE IRRIGATION SYSTEMS
 - SEEDING, SODDING, GRADING
 - LARGE TREE TRANSPLANTING
 - ARBORICULTURE SERVICES
 - CLUB HOUSE & POOL DESIGN
 - FULL LINE LANDSCAPE SERVICES

We service Pennsylvania, New Jersey, Delaware and Maryland. For information contact our Pennsylvania office at 215-828-5488 or our New Jersey offices in Voorhees 609-424-1727 or Princeton 609-466-0666. Please ask for our client reference list. FAX # 215-828-9164.

Club Car Utility Vehicles



Out Perform, Out Maneuver, Outlast The Competition

Club Car's utility vehicles and personnel carriers, available in gas or electric. They are ideal for security patrols, grounds maintenance, and much more. Call to set up a demonstration.

Vic Gerard Golf Cars, Inc.
281 Squankum Road
Farmingdale, New Jersey 07727

ClubCar

T.M.

Tel. (908) 938-4464
Fax (908) 938-3211

Authorized Club Car Distributor

PATRON DIRECTORY

★ New Patrons for 1991

ALPINE TREE CARE, INC.

Complete tree care
Robert Mullane-Peter Orszulak-Brian Nadriczny
(914) 948-0101

AQUA-FLO, INC.

Irrigation System Designers and Suppliers
Phil Demarco - Jerry Purcell
(609) 561-1777 (800) 524-0895

AQUATROLS CORP. OF AMERICA

Manufacturers of Water Management Products
Andy Moore - Phil O'Brien - Drew Effron
(800) 257-7797

ATLANTIC MILLS INC.

Tee Towel, Shop Wipes and Sport Towels
Pete Donnelly - Jack Brady; (201) 774-4882

JAMES BARRETT ASSOCIATES, INC.

Golf Course Irrigation - Design and Consulting
Jim Barrett; (201) 744-8237

BLUE RIDGE PEAT FARMS, INC.

Top Dressing, Peat, Humus & Potting Soil
Gene Evans; (717) 443-9596

BRUEDAN CORPORATION

Yamaha Golf Cars - John Deere Turf Equipment
Bill Rapp; (800) 535-1500 (914) 469-2275

CIBA-GEIGY

Turf and Ornamental Products
Stephen Rezac; (201) 530-4252

★ W.A. CLEARY CHEMICAL CORP.

Somerset NJ
Bob Leslie; (201) 993-6696, (908) 247-8000

CONSOLIDATED STEEL & ALUMINUM

FENCE CO., INC. Fencing Contractor
Eugene T. McLaughlin; (201) 272-6262

ALAN G. CRUSE INC.

Golf Course Materials
Alan G. Cruse; (201) 227-7183 (201) 992-2335

DeBUCKS SOD FARM

Grower and Supplier of Bluegrass and Tall
Rescue Sod
Leonard DeBuck, Ray Dorsey; (914) 258-4131

DISPRO DISPLAY PRODUCTS CORPORATION

Manufacturer of Golf and Country Club Signage
Jerry Baine; (201) 988-5400

DOUBLE EAGLE EQUIPMENT

Turf Maintenance Equipment Clyde Ashton -
Jerry Pearlman - Stan Stevenson (201) 329-9292

EGYPT FARMS, INC.

Top Dressing and Construction Mixes
John Strickland - Jeff Lacour - Mike Witt
1-800-899-7645 (SOIL)

E-Z-GO/TEXTRON, INC.

New & Used Golf Cars & Turf Equip.
Tom Sauer, Branch Mgr.; John Myers, No. &
Cen. NJ; Paul Proter, So. NJ; (609) 586-4000

FERTIL-SOIL TURF SUPPLY, INC.

Greens Topdressing/Turf Supplies
Marty Futyma - Catherine Futyma
(908) 322-6132

★ FINCH GOLF & TURF COMPANY

John Deer Turf Equipment
Dennis Wagner - Mike Reynik - Ray Finch
1(800) 78-DEERE

FISHER & SON CO., INC.

Grass seed Fertilizers Chemicals
Allan C. Phillips - Frank Fisher - Mike Fisher
(800) 262-2127; (609) 478-6704

GOLF BY JANIS INC.

Golf Course Construction, Renovation, Irrigation
Al Janis; (301) 641-5108

GOLF CARS, INC.

Golf Cars, Utility Vehicles, Parts, Accessories,
Sales, Service; Jon F. Schneider, Gen. Mgr. -
Sandra L. Wunsch, Controller; (215) 340-0880

GRASS ROOTS TURF PRODUCTS, INC.

Golf Course Supplies, Ken Kubik - Bert Jones
(201) 361-5943 (201) 686-8709

★ GREENWOOD TREE EXPERTS

Full Service Tree Care
Bob Dubee; (201) 335-6650

JONATHAN GREEN INC.

Grass Seed, Fertilizer, and Turf Chemicals
Barry K. Green II - Ed Barbano - Rip Rippe
(201) 938-7007

HARFORD INDUSTRIAL MINERALS

Sands, Top Dressing Materials
Dorothy Stancill; (301) 679-9191

JEP SALES, INC.

Turf Maintenance Equipment
Jack Poksay - Bill Beverlin - Bob Morris
(609) 585-2300

REES JONES, INC.

Golf Course Architects
Rees Jones - Keith Evans - Greg Muirhead
(201) 744-4031

STEVEN KAY

Golf Course Architects
Stephen Kay - Ron Turck - Barbara Kotler
(914) 699-4437

KOONZ SPRINKLER SUPPLY COMPANY

Rainbird Irrigation Equipment
William Koonz; (201) 379-9314

LAWN & GOLF SUPPLY COMPANY

Specialists in Equipment and Supplies for
Maintenance of Turf
Sam Baird Jr.; (800) 362-5650

LESCO, INC.

Serving the GCSAA of NJ
Mike Oleykowski; (800) 321-5325

LEBANON CHEMICAL CORP.

Country Club Fertilizers & Chemicals
Steve Chirip; (717) 894-3133

LEON'S SOD FARM

Sod Grower
Samuel Leon - Irene Leon; (908) 996-2255

LOFTS SEED INC.

Turf Seed and Fertilizer Supplier
Dr. Rich Hurley; (201) 560-1590

LONGO MOTOR & PUMP, INC.

Electric motor/pump repair/sales
Cathy Hughes - Bob Tal; (201) 539-4141

WILFRED McDONALD, INC.

Turf Maintenance Equipment
Dennis DeSanctis - Ed Rockhill - Bill Luthin
(201) 471-0244

RALPH MCGILLAN

Excavating Contractor, Lakes & Ponds
Ralph McGillan; (609) 655-2281

JOSEPH M. MERCADANTE, INC.

Cart Path, Tee, and Trap Construction
Joe Mercadante - Lucille Mercadante
(201) 762-1195 (201) 763-0042

METRO MILORGANITE, INC.

Turfgrass Supplies
Rich Apgar - Joe Stahl; (914) 666-3171

MONTCO/SURF-SIDE

Wetting Agents/Defoamers
Robert Oechsle; (215) 836-4992

NOR-AM CHEMICAL CO.

Chemical/Fertilizer Manufacturer
Shaun M. Barry; (201) 846-8173

★ NORTHEASTERN ASSOCIATES

Sales & Service for Golf Course Industry
Vincent Dujets - Chuck Kolenut
(201) 227-0359

PARTAC PEAT CORPORATION

Golf Course Top-Dressing
Jim Kelsey (908) 637-4191

PAVELEC BROS. GOLF COURSE

CONSTRUCTION CO., INC.
Golf Course Construction
Tony Pavelec (201) 667-1643
Emil Pavelec (201) 939-6182

PLANT FOOD CHEMICAL CO., INC.

Manufacturer of Fluid Fertilizers
Ted Platz; (609) 448-0935

POCONO TURF SUPPLY CO.

Turf Supplies
Ron Olsen; (215) 672-9274

★ P & P EXCAVATING INC.

Excavating Contractor, Lakes & Ponds, Equip.
Rental, Grading
Bob Laner; (201) 227-2819 (201) 227-2030

PRO LAWN TURF PRODUCTS, INC.

Services for the Professional
Brad Simpkins (609) 758-7620

ROCKLAND CORPORATION

Turfgrass Chemicals & Fertilizer
Steve Stys
(201) 575-1322

R & S LANDSCAPING CO., INC.

Specialists for Golf Course Construction
Claus I. Raven
(201) 278-0616

GEO. SCHOFIELD CO., INC.

Golf Course Supply
Russell Balunis - Larry Gaham - Tom Casmer
(201) 356-0858

THE SCOTTS COMPANY - PROTURF DIV.

Turf Fertilizers, Protectants, Seed
Fran Berdine (914) 361-4105
Steve Rudich (215) 253-4003

SEACOAST LABORATORIES, INC.

Twin Light Turf Products
John C. Moynihan - Richard G. Baker
(201) 821-4769 (800) 522-4769

SEQUOIA TREE SERVICE INC.

Paul Portsmore - John Schaus - J.T. Kievit
201-891-0309

SHEARON ENVIRONMENTAL DESIGN

Golf Course Design and Construction
Chip Kern
(609) 466-0666 (215) 828-5488

STORR TRACTOR COMPANY

Turf Maintenance Equipment, Irrigation
Mary Lou Deschamps - Gene Tarulli -
Paul Granger
(201) 722-9830

WILLIAM STOTHOFF CO. INC.

Well Drilling, Pumps & Pump Repairs
William L. Stothoff III (Pete) - William E. Snyder
(201) 782-2717

SWEENEY SEED CO.

Seed (turfgrass)
A. M. Sweeney - Jeff Schockley - John Pew, III
(215) 275-2710

THE TERRE COMPANY

Seed - Fertilizer - Pesticides - Nursery stock
Byron Johnson - Bryan Bolehala - Pat O'Neil
(201) 473-3393 - FAX 473-4402

TURF PRODUCTS CORPORATION

Turfgrass Supplies
Ernie Rizzio - Buddy Rizzio - Ron Lake
(201) 263-1234

VAUGHAN'S SEED COMPANY

Turfgrass Seed & Fertilizer
George Rosenberg - Sky Bergen
(908) 356-4200

STEVEN WILLAND INC.

Turf Equipment Distributor
Mark Ericson - Bruce Pye - John Rizza
(201) 579-5656

Baltusrol • Bedens Brook • Canoe Brook •
Shackamaxon • Spring Brook • Timber Trails and others . . .

**What do the superintendents of these
prestigious golf courses have in common?**

They use the services of . . .

KOONZ

SPRINKLER SUPPLY

. . . the smart choice for all your irrigation needs



SERVICE EXCELLENCE

- Complete inventory
- Service assistance and technical support
- 25 years experience

QUALITY PRODUCT LINES

Distributors of

RAIN BIRD®

HUNTER®

WEATHERMATIC®

Sprinkler Equipment

KOONZ

Sprinkler Supply, Inc.

39 Waverly Avenue • Springfield, N. J. 07081

(201) 379-9314

Branch Offices: Wall Township • Toms River • Hackensack