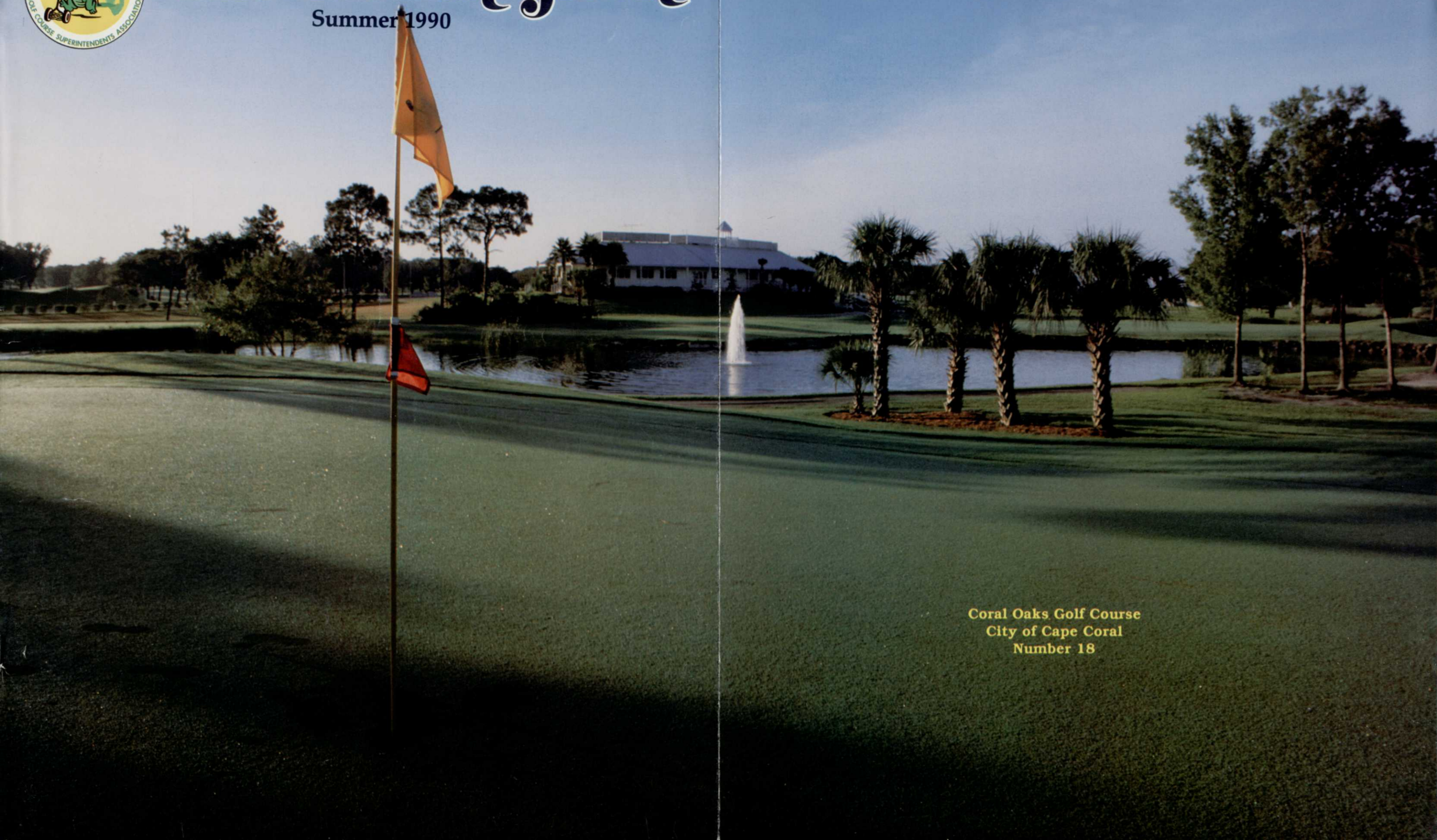




The Florida Green

Summer 1990



Coral Oaks Golf Course
City of Cape Coral
Number 18

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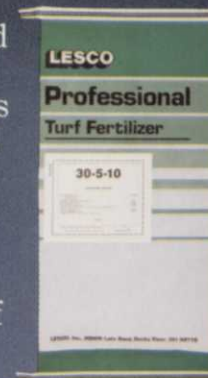
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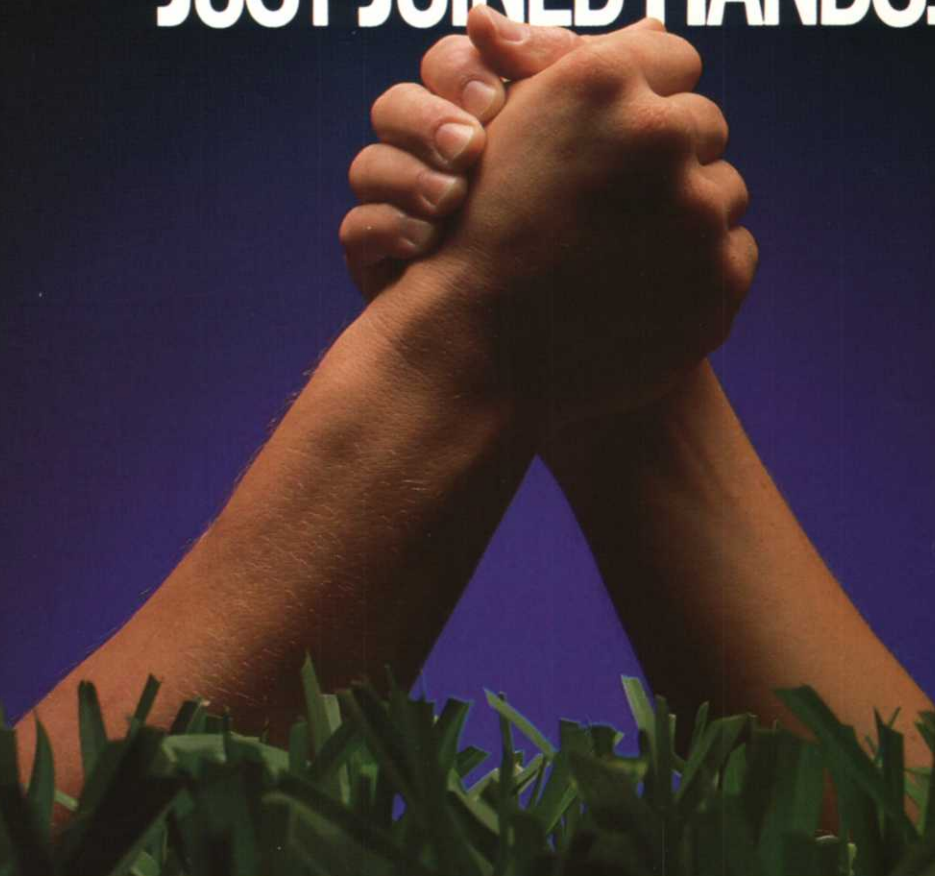
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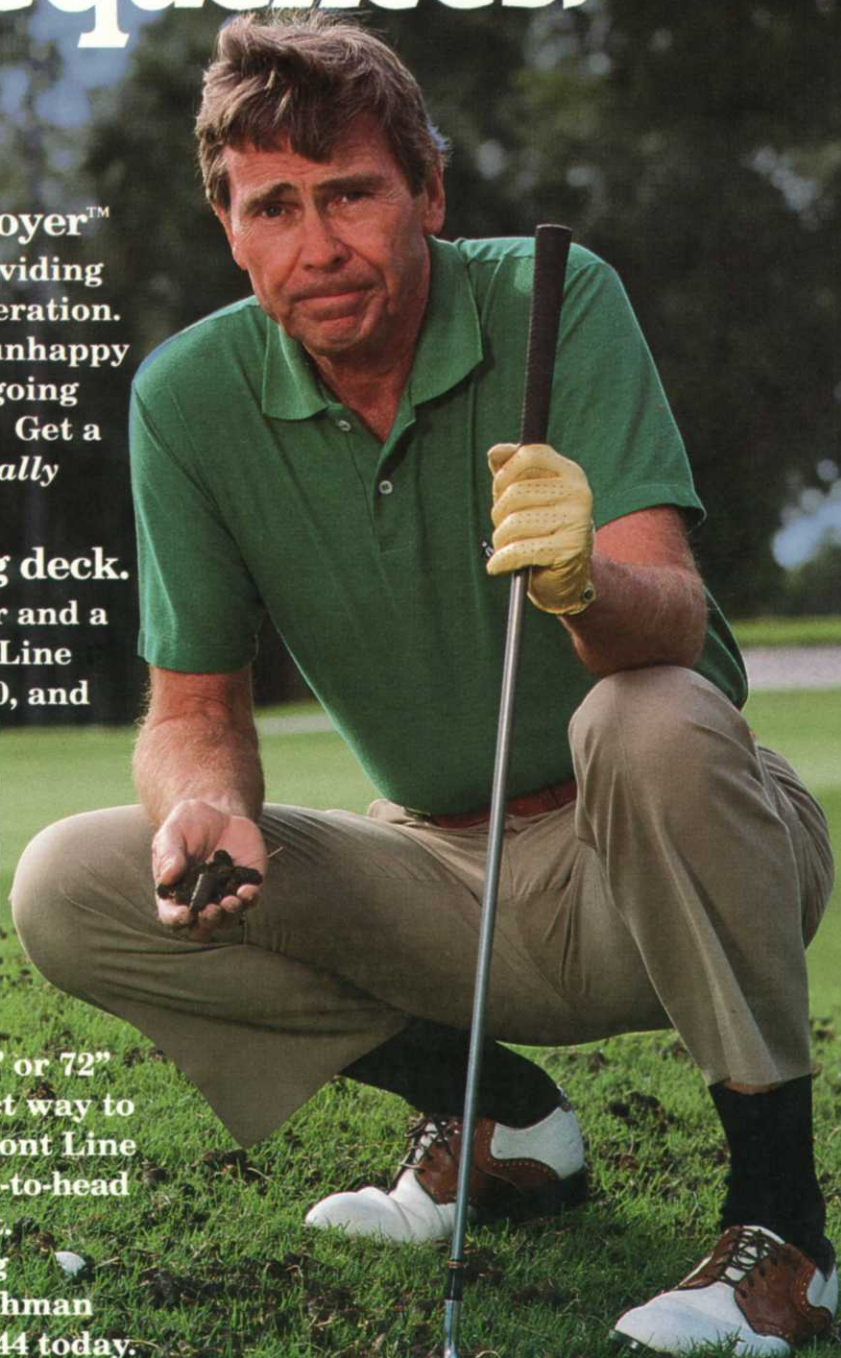
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The Florida Green

Official Voice of the Florida Golf Course Superintendents Association

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Welcome (back) !

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Research and communication will win the day

help educate our legislators and the general public. We must seek alternative methods and resources, and be ready to

change our practices if research dictates that changes are needed.

We are suffering the slings and arrows of ambiguous, ill-conceived regulations and sensationalistic journalism. The current factual data is on our side, but we need more! Our

current research efforts are focused in that direction to help allay the fears of the public. We will continue to communicate to them what an amazing, beneficial ecosystem a properly maintained and operated golf course provides.

The pressure on golf course superintendents is increasing. Golfers, club members, managers, and owners must also be aware of this pressure. This is the time to strengthen the relationship between the club and the superintendent. This is no time to

sweep issues under the carpet, hoping they will go away. The liability factor is closing in on all operations, and everyone needs to be aware of his legal responsibilities. Setting up organized, positive programs established to comply with current laws will reap the reward of improved communications within the club and help avoid potential crippling fines and negative publicity.

There is no greater time than the present for superintendents to become more involved in their local and national associations. There continues to be an unwarranted number of unbelievable stories of instances of ignorance and malpractice in our industry. There just isn't more room for those kinds of errors of omission or deliberate circumvention of label restrictions or other regulations. Make sure you or your superintendent is a member of his local association and that things are in order or are being put in order.

By the time this issue is in your hands, I will have only a few days left in my term as president. It certainly has been an eventful year for me, beginning with open-heart surgery in the fall, hosting the GCSAA Conference and Show in the winter, and assuming editorship of the *Florida Green* in the spring. Those events, coupled with the ongoing challenge of managing bentgrass greens

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Joel D. Jackson
Joel D. Jackson, CGCS

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from page 9

in Central Florida, have made my 1989-90 term a very memorable year.

This past year has perhaps been filled with more reflection than satisfaction, but it has been a positive experience. It has been positive because I have seen and heard the con-

cerns of our members as they seek to become responsible turfgrass managers in the 1990s. It has also been positive because I have seen the high regard which other associations have for the FGCSA. I recall that last August in my presidential acceptance

speech, I noted some of the qualities I admired in my peers. Qualities that made me proud of our industry. It is those qualities that reflect resourcefulness and determination that will help us persevere in the days to come.

I thank you for the opportunity and privilege of serving you this past year.

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In the beginning

*There was Earth, beautiful and wild;
And then man came to dwell.*

*At first, he lived like other animals
Feeding himself on creatures and
plants around him.*

*And this was called, "In balance with
Nature."*

Soon man multiplied.

*He grew tired of ceaseless hunting for
food;*

He built homes and villages.

*Wild plants and animals were
domesticated.*

*Some men became Farmers so that
others might become
Industrialists, Artists or Doctors.
And this was called Society.*

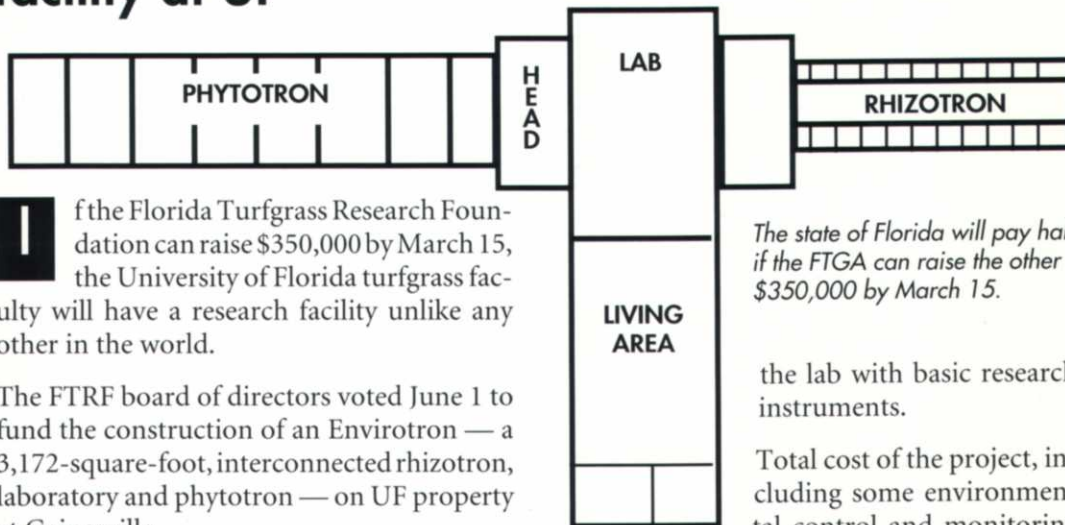
Man and Society progressed.

*With his God-given ingenuity, man
learned to feed, clothe, protect,
and transport himself more
efficiently so he might enjoy Life.*

*He built cars, houses on top of each
other and nylon.*

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FTGA wants to fund world-class research facility at UF



If the Florida Turfgrass Research Foundation can raise \$350,000 by March 15, the University of Florida turfgrass faculty will have a research facility unlike any other in the world.

The FTRF board of directors voted June 1 to fund the construction of an Envirottron — a 3,172-square-foot, interconnected rhizotron, laboratory and phytotron — on UF property at Gainesville.

“There are some phytotrons (elaborate greenhouses) around and quite a few rhizotrons (underground facilities for observing roots and soil), but I don’t know of another place in the world that has them both at one spot and all connected to a laboratory,” said Dr. Ed Freeman, a UF plant pathologist. “This facility would put us right at the top of the heap. We’re *very* excited.

“To have such a thing would be a significant achievement for the whole turf industry in Florida.”

In addition to the rhizotron, which will include living quarters for researchers conducting short-term projects or graduate assistants monitoring projects which require frequent checking, the board also voted to construct an automatic, retractable rain shelter for the rhizotron, to purchase turf maintenance equipment, to install an irrigation system and hazardous materials storage area, and to equip

The state of Florida will pay half if the FTGA can raise the other \$350,000 by March 15.

the lab with basic research instruments.

Total cost of the project, including some environmental control and monitoring equipment, will be \$700,000.

Under the current state guidelines, The Florida Capital Facilities Matching Trust Fund will match donations dollar for dollar, meaning that if the FTRF raises \$350,000, the trust fund will match the donation.

The money must be raised by March 15 in order for the trust fund to agree to match it before the Florida Legislature, which must then approve the project, convenes April 1.

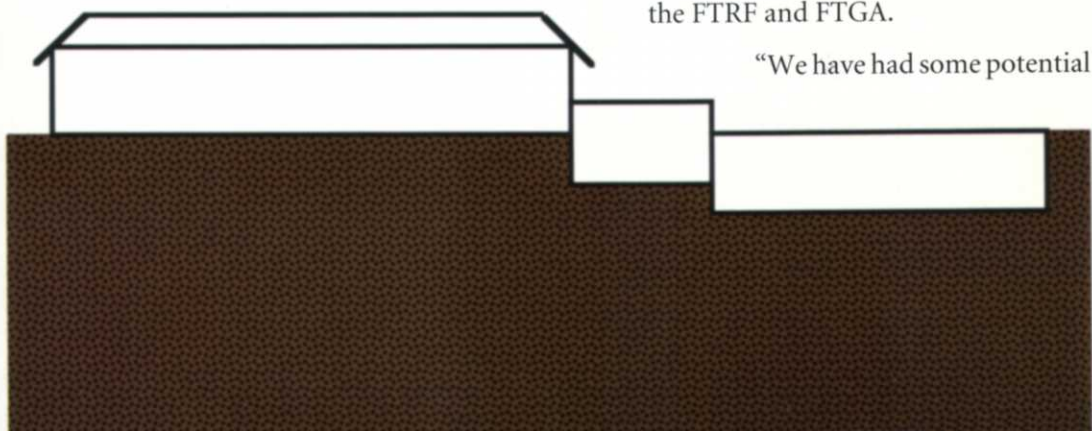
If all goes well, construction could begin next summer and “we could be seeing some research results within three years,” said Freeman. “I’m no construction expert, but I don’t think it will take that long to build it and we have some projects waiting for the facility that could be yielding some results rather quickly.”

“I want to emphasize that fund-raising for this project will not take the place of our Arnold Palmer Endowment program, which is on schedule and will continue that way,” said Bob Yount, executive director of both the FTRF and FTGA.

“We have had some potential

.....
CORRECTION

It’s been spelled SARA, SERA and even CERA, but the correct spelling of the federal law requiring facilities which store hazardous materials to notify local emergency planning groups is SARA. The letters stand for Superfund Amendment Re-authorization Act. We picked one of the wrong spellings for a story in the last issue.



donors who could help us in a large way who were looking for some bricks and mortar they could fund. This (the Envirotron) gives them that opportunity.”

According to Dr. Everett Emino, another UF turfgrass faculty member, the word “Envirotron” comes from the Latin *environ* — to encircle — and the Greek *tron* — instrument.

“We arrived at the name during a faculty meeting at which we were discussing the possibility of getting a rhizotron here,” said Freeman. “Then somebody — and I honestly can’t remember who it was — said we really needed a facility to study the complete environment surrounding turfgrass.

“And that’s how we coined the word, ‘Envirotron’.”

USGA Green Section makes Florida a separate region

Five years ago, Florida did not have a United States Golf Association agronomist to call its own.

Now the USGA Green Section has made Florida its seventh region, the only state to comprise a region on its own, and soon it will have two agronomists assigned to the state full time.

John Foy, hired in 1985 as the first Green Section agronomist in the Southeast Region assigned full-time to Florida, was named director of the new Florida Region April 16.

The Florida Regional office will stay

in Hobe Sound, where Foy will be assisted by an agronomist who was being hired as this section went to press.

“Two factors led to the decision to make Florida its own region,” said Foy. “First, the agronomic conditions and environmental problems in Florida are unique.

“Second, I made 186 official course visits last year and we could have made more if we had had another agronomist down here to make them.”

Foy’s appointment was one of six announced by the USGA Green Section in mid-April, highlighted by the promotion of Jim Snow, former director of the Northeast Region, to national director, succeeding Bill Bengueyfield who retired March 31.

Snow joined the USGA in 1976 as an



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agronomist and took over the Northeast Section in 1982. A native of Trumansburg, N.Y., he was graduated from Cornell University in 1974 with a bachelor's degree in ornamental horticulture and received his master's degree from Cornell two years later.

As national director, Snow will be responsible for directing the Green Section's national program and its agronomists, supervising the championship course preparation program, and editing the magazine, *The Green Section Record*.

He also will succeed Benegfield as chairman of the USGA Turfgrass Research Committee, now involved in developing low-maintenance grasses.

Mike Kenna, who held the Young Scientist Chair on the USGA Research Committee for three years, was named the Green Section's first director of research.

Kenna, formerly director of the turfgrass program for Oklahoma State University's Extension Service, originally had been hired to help Foy in Florida but took the new post when it was created.

"He has outstanding credentials," said Foy. "I was looking forward to working with him down here, but the whole program will benefit from Mike's expertise now."

Dean Knuth, the USGA's director of handicapping, was given the added responsibility of director of Green Section administration, succeeding Charles Smith, who also retired March 31. Knuth directed the development of the USGA's new Slope handicap method.

David Oatis, formerly an agronomist in the Mid-Atlantic office, was named to succeed Snow as director of the Northeast Section.

Finally, Robert C. Vavrek, Jr. was hired

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as an agronomist for both the Mid-Continent and the Great Lakes sections, bringing the Green Section's total number of agronomists to 14, not counting the national director.

The Green Section staff made about 1,500 advisory visits to golf courses in 1989. The section also produces recommendations for turfgrass maintenance, provides specifications for greens construction and oversees course preparation for the 13 national championships conducted by the USGA.

FTGA show brings 'Paradise' to Orlando Sept. 30

Exhibitors from all over the United States, Canada and England will welcome Florida's turfgrass managers to the Orlando Civic Center Sept. 30-Oct. 3 for the largest warm-season turfgrass trade show in the Southeast.

Theme of the Florida Turfgrass Association's annual conference and show will be Turfgrass Paradise FTGA 90.

Workshops and seminars will cover environmental regulation and enforcement policies, biological control programs and advanced turf

management practices. Continuing education credits will be offered for selected topics.

"Recognized authorities in Florida's turf industry will present hands-on workshops and seminars," said Ruth Shephard, FTGA show coordinator.

For more information, contact the FTGA at 407-898-6721.

Permit problems getting serious, say architects

All but one of the 40 golf course architecture firms responding to a recent environmental impact survey by the American Society of Golf Course Architects said they have experienced difficulties in obtaining permits for golf projects because of environmental concerns by local, state or national agencies.

"This national survey vividly demonstrates the impact that environmental concerns have on the golf industry," said Dan Maples, AGCSA president, "and the need for the industry to work with key agencies to develop mutually acceptable guidelines that will be interpreted uniformly throughout the country."

The respondents, all ASGCA mem-

bers, cited wetlands as the primary problem they encountered in the permitting process.

Other areas of concern in the permitting process, in the order of their ranking by ASGCA members, were habitat, nitrates/chemical contamination, groundwater protection and pesticide usage.

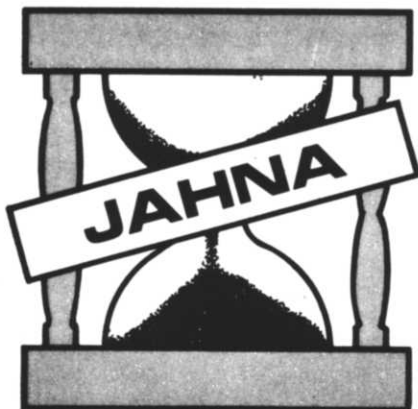
New golf course projects have experienced the most delays because of objections by the Corps of Engineers, the survey found.

The EPA, Dept. of Natural Resources, various environmental groups, local planning commissions, town/city councils, wildlife organizations, and adjacent landowners were ranked behind the COE.

The respondents to the survey said they generally contact agencies in this order: local planning commissions, Corps of Engineers, state commissions, EPA and DNR.

Slightly more than half (52.5 percent) the respondents said that some of their new projects had been delayed from eight to 12 months by the permitting process. One-fourth said hearings delayed their projects three to six months, while 22.5 percent said that several of their projects had been delayed from 15 to 30 months.

The permitting process should take from three to six months, said the



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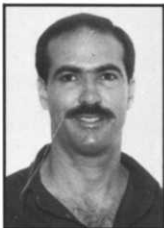
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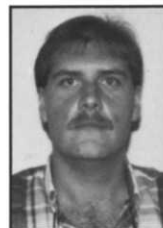
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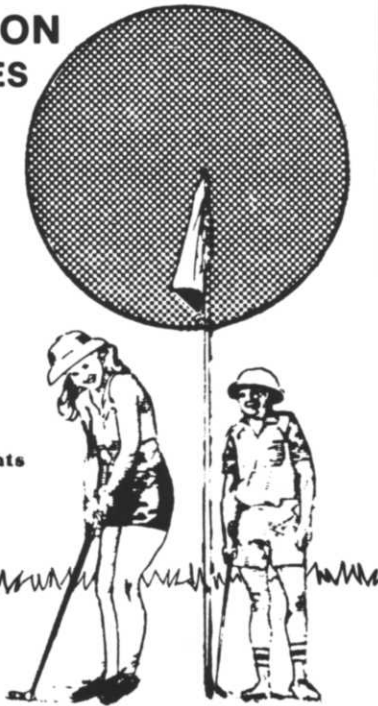
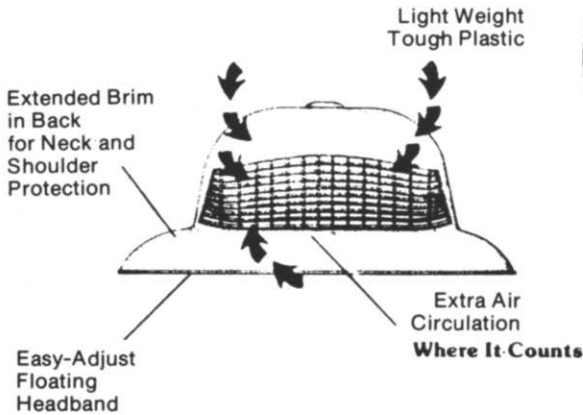
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respondents, and they suggested that developers factor that period into their planning and financing.

Asked to present actual case histories showing the cost of delays, the architects cited additional costs ranging from \$10,000 to over \$1,000,000. These costs came from additional financing, legal and consulting fees, and rerouting the project.

Half of those responding felt that environmental agencies and commissions impose more stringent provisions on golf course projects than non-golf projects.

In general, the respondents suggested that the golf industry develop a comprehensive public relations program with environmental groups and work out uniform interpretation guidelines with the national agencies, such as the EPA and COE. Those guidelines then could be used by local, state and regional bodies.

Golf architects are environmentalists by nature and training, asserted Maples. He said nearly every AGCSA member, at one time or another, has advised a client to back away from a project that could damage the environment.

"We have not done a good job of explaining to regulatory agencies and the general public how golf courses contribute to the quality of life.

"We must go one step further and work with the EPA and COE to develop guidelines that will help the architect prepare a plan that will be acceptable without a great deal of revision. Key to that, of course, is having national standards on such basic matters as wetland mitigation.

"We need to prepare good preliminary plans that are readily understandable to the laymen who sit on many of the local boards. We must become allies, not adversaries," Maples said.

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The AGCSA is sharing the results of the survey with the Allied Associations of Golf with a view towards setting up a meeting with representatives from key regulatory agencies.

"We are not interested in simply preparing the golf industry's position paper on the environment," Maples said. "We are interested in working with regulatory agencies to fashion a document that can become a working guide for the developer, architect and regulator. Then we will have something that not only will speed the approval process, but help improve the environment throughout the country."

.....
Legislation recently passed by the U.S. House of Representatives would make some environmental crimes punishable by a \$1 million fine and 15 years in prison.

GCSAA donates record \$35,000 for turf research

At the U.S. Open near Chicago last month, the Golf Course Superintendents Association of America presented a record \$35,000 contribution to the joint USGA/GCSAA Turfgrass Research Committee to support research into turfgrass breeding and environmental problems.

"We certainly appreciate the support that GCSAA has shown us — not just the financial support, but also the moral support that golf course superintendents have given us," said Dr. Mike Kenna, USGA research director.

Last year, the GCSAA donated

\$25,000 to the committee for general support of turfgrass research and an additional \$25,000 earmarked to fund a full review of all scientific literature on the environmental impact of golf course management practices. Results of that review are now serving as the starting point in the development of a comprehensive manual of best management practices.

GCSAA's 1990 contribution all went into the committee's general fund to support research indicated by the review's findings.

IPM publication reprinted

The GCSAA has underwritten the cost of reprinting *Integrated Pest Management for*

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Turfgrass and Ornamentals, a compendium of articles on IPM collected by the Environmental Protection Agency.

The book contains articles that explain how to avoid unnecessary use of chemicals by advocating careful monitoring of pesticide applications. By stressing the judicious use of pesticides and herbicides through an IPM philosophy, golf superintendents can reduce their reliance on chemicals in maintaining their courses.

The book is available through the GCSAA office of government relations at \$10 for members and \$2 more for nonmembers.

.....
U.S. Sen. Joseph Lieberman (D-Conn.) has introduced legislation that would require pesticide applicators to keep records of ALL applications.

Minn. woman becomes 10,000th member

The Golf Course Superintendents Association gained its 10,000th member in late May when Norma M. O'Leary, superintendent at Silver Bay (Minn.) CC joined the 64-year-old organization.

The organization has 901 members in Florida, more than in any other state. California is second with 737.

O'Leary said her membership "will keep me in touch with current events in turf management, and the education and information programs will help me stay on top of my job."

According to Pat Jones, GCSAA director of communication, the association does not keep track of its

members by gender.

The GCSAA, which had fewer than 5,000 members in 1983, passed the 9,000 mark last October.

The GCSAA was founded in 1926 as the National Association of Greenkeepers of America. Today it is the only international organization that serves the professional golf course superintendent, with special emphasis on working with legislators and regulators to promote environmental protection and to communicate the importance of sound ecological management to its members through education and research.

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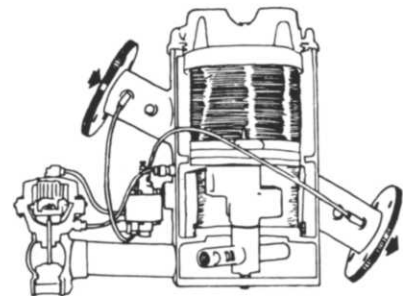
the root system.

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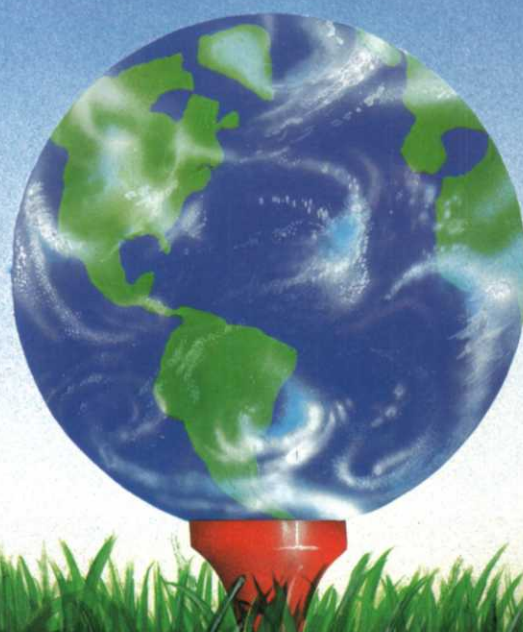
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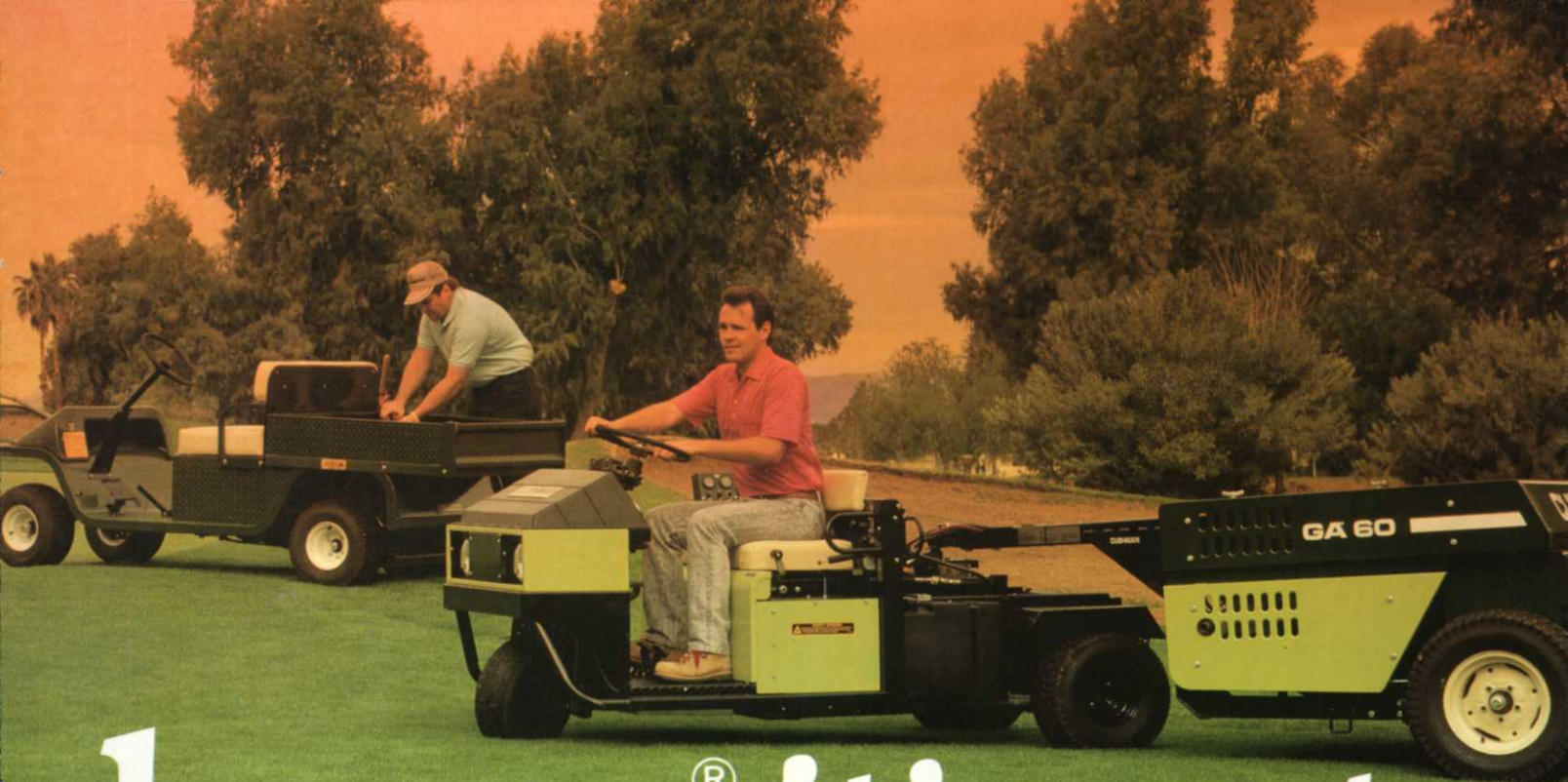
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Municipal golf the right way

Cape Coral built a \$2.8 million golf course by a top architect at virtually no cost to the taxpayers

BY LARRY KIEFFER

Cape Coral is a rarity among Florida developments: it gives the state's real estate industry of the 1960s a good name. It is even the subject of a book subtitled, *A Lie Come True*.

Built on 104 square miles of dredge-and-fill land, making it Florida's second-largest city after Jacksonville, Cape Coral has had the infrastructure to support a population of 325,000 for nearly three decades.

The streets are paved and signed, the utilities are in and nearly all the residential lots have been sold, mostly at "town hall" meetings across the Midwest.

Until about 10 years ago, all that was lacking was people. Then they began to arrive... in droves.

By 1985, with its exponentially growing population topping 70,000, the city council decided it was time to build Cape Coral's first municipal golf course: Coral Oaks.

Coral Oaks Golf Course

Developer: City of Cape Coral

Architect: Arthur Hills

Contractor: Ryan Eastern and Fore Golf

Construction Cost: \$2.8 million exclusive of land and clubhouse

Financing: Municipal bonds to be retired from operating revenues

Size: 168 acres

Course: 18 holes, 6,623 yards, par 72, Course Rating 71.7, Slope 123

Annual Play: 78,000 rounds

Fee range: \$14-\$30

Maintenance Staff: 15

Superintendent: Don Stewart







Number Eighteen

Coral Oaks Golf Course

At Coral Oaks Golf Course, architect Arthur Hills achieved the City of Cape Coral's request for a golf course that truly challenges the scratch player while remaining manageable to the high handicapper.

Most of the course is cut through trees, making the wind a factor to the golfer who gets the ball high while protecting those of lesser skill. Any of the par fives can be reached in two shots, but never all of them on the same day.

With only 27 bunkers, a lot of Coral Oaks' challenge comes from sidehill, uphill and downhill lies caused by swales, hollows, grass mounds and shadow cuts. Water appears on 11 holes, but groundpounders usually have safe routes.

From the 6623-yard championship tees, par of 72 is very difficult for the player who is unable to use every club. USGA Course Rating is 71.7 and Slope is 123. The 4803-yard front tees, with a Course Rating of 68.9 and Slope of 117, provide an enjoyable round without requiring a booming drive.

The 168-acre facility (122 irrigated) opened in July, 1988. In our first full fiscal year, we had 78,000 rounds. Our original maintenance team of 15 remains intact.

Greens are planted to Tifdwarf and overseeded with bentgrass; tees are planted to Tifton 328 bermudagrass and overseeded with a blend of ryegrass; fairways are Tifton 419 bermudagrass and roughs are a combination of common bermudagrass and native vegetation.

My two favorite views are from Number 8 tee with the clubhouse in the distance, and anywhere that I can see the fountain.



Don Stewart



Number Seventeen



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By all accounts, they did it right. "I think the city wrote the book on how to build a municipal golf course the right way," says Don Stewart who has been golf course superintendent at Coral Oaks since it was nothing more than a set of preliminary plans by architect Arthur Hills (*page 44*).

Last year *Golfweek* called it "quite possibly the best new municipal golf course in the country" and, after less than a year of operation, the readers of *The Florida Golf Reporter* voted it into the Top 20 of the state's more than 800 golf courses.

What is even more impressive, the city built the course at a total cost to its taxpayers of only \$10 — the price charged by the developer for the 168 acres on which it stands. The \$2.8 million construction cost (\$4.2 million counting the clubhouse and other facilities at the site not related to the golf operation) was financed entirely with municipal bonds that are being retired from golf-course operating revenues.

With 78,000 rounds in its first fiscal year at anywhere from \$14 to \$30 each, the course has been operating ahead of the financial plan since it opened two years ago this month. The plan requires the course to be completely self-supporting by the third year.

Furthermore, Stewart has had zero turnover since he began assembling his maintenance team of 13 permanent employees (he also is permitted two contract laborers) in January, 1988.

"If you have a ranked golf course that's operating according to the fi-

nancial plan and no staff turnover, what more could you ask?" notes Stewart.

"We had some problems — still do — but the city gave us the best possible chance to solve those problems by setting things up right in the first place," he says.

The city planned and built the golf course through a blue-ribbon committee which included one city councilman. The committee submitted its key decisions, such as selection of the architect, for council approval.

*"If you have a ranked
golf course that's
operating according to
the financial plan and
no staff turnover, what
more could you ask?"*

Stewart was hired Dec. 6, 1986, shortly after one of four designs submitted by Hills was selected. From that day on, he was the city's point man on the construction project, reporting first to the assistant city manager and, during the final construction period, directly to City Manager Ellis Shapiro.

"When the assistant city manager took a job on the other coast, Shapiro just took over the project," Stewart noted. "Because I had direct access to the man at the top, I was able to cut through the bureaucracy and get the golf course open on schedule and on budget."

Stewart's first duty was a pre-bid conference with all interested con-

The Facility

Site:	168 acres inside city limits dredged and filled in early 1960s
Greens:	2.8 acres Tifdwarf, overseeded with bentgrass
Tees:	3.5 acres Tifton 328 bermudagrass overseeded with ryegrass
Fairways:	62 acres Tifton 419 bermudagrass
Water:	11 bodies comprising 15 acres
Woodlands:	17 acres, mostly oak
Practice Facility:	10.5 acres including double-ended range, 6 target greens, practice green and practice bunker.
Irrigation:	Multi-row covering 122 acres of playing surface only. Rain Bird electric controller.
Source:	Drainage canal 4 feet above sea level and protected by 2 wiers.

tractors “to explain what Arthur Hills meant by each squiggly line and to give out the results of the 54 soil borings taken at the site.”

All bids came in higher than expected, so Stewart and Hills carefully trimmed the project to keep it within the budget.

“We didn’t do anything to hurt the golf course,” he says. “The original plan called for moving 400,000 tons of dirt; we cut it back to about a third of a million tons by reducing the maximum elevation from 16 feet to 14 feet. We held off on cart paths along the fairways, changed the irrigation from wall-to-wall to just the playing surface... things like that. We changed some fairway drainage from tile to surface, which increased the maintenance costs slightly but reduced the engineering costs.”

Ryan Eastern, a large East Coast

earth-moving firm with no golf course experience, won the bid. Ryan subcontracted most of the work to Fore Golf, a construction firm specializing in golf courses, notably those designed by Joe Lee. Work began “on the Ides of March,” notes Stewart, whose college major was speech and drama.

“There were some communication problems with the shapers in the beginning,” Stewart said. “We had to explain that we didn’t want flashy bunkers and the like.”

The only contingency in the construction budget was \$42,000 for greensmix if suitable soils could not be found on site. They had to spend the money.

“Arthur Hills was very particular about using USGA specifications for the greens, except for the intermediate layer, and the construction committee backed him up,” Stewart says. “They wanted to do this golf course right.”

Two major problems arose during construction: the site contained considerably more rock than indicated by the pre-construction borings, and a beautiful stand of oak trees, not noticed when the course was staked, barred the route to the 14th green.

The unforeseen rock proved costly for the contractor — “He told me last year that Coral Oaks was his first and last golf project,” Stewart notes — but the oak trees required artistic concessions from Hills.

“I really have to hand it to the man,” Stewart says. “I didn’t think he would go along, but once he accepted the fact that we really wanted to save those trees, he shortened the hole and

then had some fun tricking it up.”

Sprigging of the back nine was completed the day before Thanksgiving and the front nine was done on Christmas Eve. By the third week of January, 1988, Stewart and his carefully assembled crew had a golf course to grow in by July. He also had a new boss, Bill Noonan, the newly-hired assistant city manager. Noonan has since become city manager.

“Seven months might seem a long time to grow in a course but you’ve got to remember that the rains in Southwest Florida normally don’t start until June and they didn’t start at all that year. We grew the course in under Phase I water restrictions without a variance.”

Not seeking a variance was Stewart’s idea, although he had the blessing of his superiors.

“I believe in water management,” he says.

Equipment

(All Jacobsen unless otherwise noted)

2 tractors
 7-gang Ranger for roughs
 F10 11-wheel fairway mower
 HF5 for slopes
 Tri-King slope mower
 5 triplex mowers for greens and tees
 2 Flymos
 4 Cushman Trucksters
 3 Club Car personnel carriers
 3 aerifiers (Ryan Coremaster and GreensAire, Jacobsen fairway)
 2 topdressers

Note: All maintenance equipment is charged to the golf course but is available to other city departments if needed.

The course was opened in July and the construction committee was dissolved.

Stewart has had three bosses since the course opened, starting with Ted Kaklis, who succeeded Noonan when he was promoted. As the government workforce grew ("I'd say it has doubled in the three years I have been here," he says), golf operations were placed first under Parks and Recreation Director Bill Potter and then, in May, under Potter's assistant, Bob Goff.

"I have job security, something that is rare for superintendents and getting rarer. So long as I do my job correctly, I would probably have to

get arrested to lose it.

"This is an excellent city to work for. They have an enlightened attitude and they like to make an example of good employees. Just last month I accompanied my mechanic to a little ceremony where they honored him for being a 10-year employee. He got a nice bonus and an extra week of vacation.

"There are so many advantages to being part of a larger organization. . . you just wouldn't believe the resources," says the 40-year-old Michigan native. "If I need a crane, I can get it... in four hours, probably, if it's an emergency.

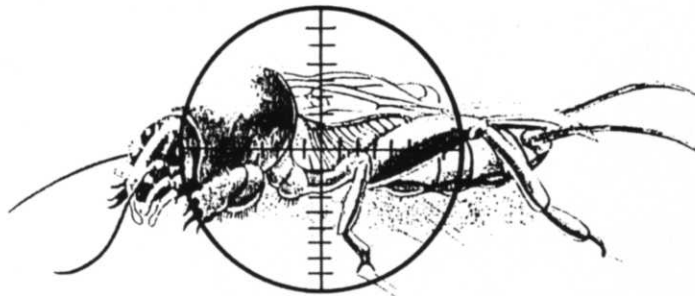
"When we finish the cart paths,

we'll probably do it with city equipment and city employees as they can fit it into their schedule. And if I need extra help for a special project, I can usually get it."

There are some difficulties with a bureaucracy, he notes, particularly with its inability to adapt to fluid situations. "Every bureaucrat has to protect his territory and you've got to get all your visas stamped before you make a move," he says.

And the city's work rules impose an unusual structure on his staff. Instead of an assistant superintendent, he has a foreman who is strong in personnel skills but has no agronomic training.

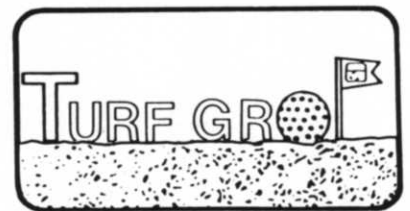
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"It's different," Stewart notes, "but I've learned to work with it. And we're trying to get him some training. He recently took a short course at Abraham Baldwin Agricultural College in Tifton, Ga."

It is ironic that Stewart would look to government work for job security. Before turning to golf course maintenance, he started two other careers in public service and lost both because of failed bond referenda.

After attending junior college in St. Joe, Mich., Stewart transferred to Manchester College in North Manchester, Ind., where he completed his B.A. in communication with a major in speech and drama and a minor in radio and television.

Upon graduation, he taught school in Marion, Ind., for one year and then served as a juvenile probation officer in the same city for another.

After losing his second job in as many years, Stewart returned to St. Joe to apply for the job of assistant superintendent at Wyndwicke GC,

where he had worked as a laborer during summer vacations.

He got the job and, 18 months later, moved into the top post when the superintendent was forced to retire following a heart attack.

Wyndwicke went belly up in 1980 and Stewart knocked around Oklahoma and Texas before landing the superintendent's job at The Glades in Naples in 1982 while visting his children in Sarasota.

"I tossed resumes at every clubhouse I saw on both sides of the Interstate on the way," he recalls.

In 1984, he moved from the Glades to Alden Pines in St. James City, where he worked with a very unusual turfgrass: *adalayd paspalum vaginatum*, a salt-tolerant plant that can withstand irrigation with water containing as much as 1,600 ppm salt.

"Every time I watered, I was putting down herbicide," he says.

Two years later he "moved across the water to Cape Coral."

Maintenance Staff

Superintendent:
 Crew Foreman
 Clerk/receptionist
 Mechanic
 Mechanic's helper
 Spray technician
 Irrigation specialist
 4 Equipment operators
 2 Groundskeepers
 2 Contract laborers

Stewart plays to a 13 handicap that is coming down, he says. His best round on his home course is 77 from the championship tees.

When he's not on the golf course, Stewart likes working on the landscaping around his house and exploring Lee County's coastal waters, particularly those around Upper Captiva Island, which can be reached only by boat.

His ambition?

"I want to build another golf course. Just one more and I'll have it out of my system.

"They're beginning to talk now about putting a second course into the five-year plan. It should be a completely different kind of course from this one and I understand that Arthur Hills wants to build a Scottish links course.

"Wouldn't it be great if he built it here?"

"I'd like nothing better than to take care of Cape Coral's golf courses until I retire. I look forward to the day."

Don Stewart

Age: 40
Education: B.A. Communication (Speech & Drama), Manchester College, Ind.
Previous Experience: Wyndwicke GC, St. Joe, Mich., laborer; Sycamore CC, Manchester, Ind., laborer; Wyndwicke GC, St. Joe, Mich., assistant supt., supt.; Elk City (Okla.) CC, supt.; The Glades CC, Naples, supt.; Alden Pines GC, Fort Myers, supt.
Other Employment: High school teacher, Marion, Ind. 1 year; juvenile probation officer, Marion, Ind., 1 year.
Leisure Activities: Golf (13 handicap), club repair, boating
Ambition: Build another golf course
Unusual Experience: Working with golf course planted entirely with salt-tolerant *adalayd paspalum vaginatum*.

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Best of both worlds

The maintenance technician for the new FGCSA research green at the Fort Lauderdale REC likes the hands-on approach to turf research

Marcus Prevatte admits he loves to play golf, but he's willing to give up some playing time in order to be involved with the FGCSA's new experimental putting green at the University of Florida's Fort Lauderdale Research and Education Center.

Prevatte was recently given the contract to maintain the green and help IFAS researchers at the center take care of other turfgrass plots.

"There are a lot of questions about putting turf that need to be answered," Prevatte says. "This green could provide some of those answers."

Dr. Monica Elliott, assistant professor of plant pathology at the center, estimates that

the green will be green by the Fourth of July. The irrigation system had been installed and fumigation, fertilization and planting were scheduled as this section of *The Florida Green* went to press.

The research green is not Prevatte's first experience with golf course maintenance. During his four years at Florida International University, where he earned a degree in biology, Prevatte worked at Palmetto GC in Dade County. He began as a night waterman and was a mower operator by the time he left.



"The research interests me," he said, "but I also enjoy being more active and I like working on a golf course. By maintaining the new test green, I'll be able to help the researchers with their experiments and also get some practical experience."

There's a bonus for Prevatte, 26, who is uncertain about his future.

"I enjoy research but I'm also considering becoming an assistant golf course superintendent. The work at the center lets me explore both areas and gives me a chance to meet people in the industry. Right now, this is the best possible place to be."

Prevatte, who is single and lives in South Miami, will tend the green about 30 hours a week. He is paid by the FGCSA from a special research fund raised specifically for building and maintaining the green and other turfgrass plots at the Fort Lauderdale REC.

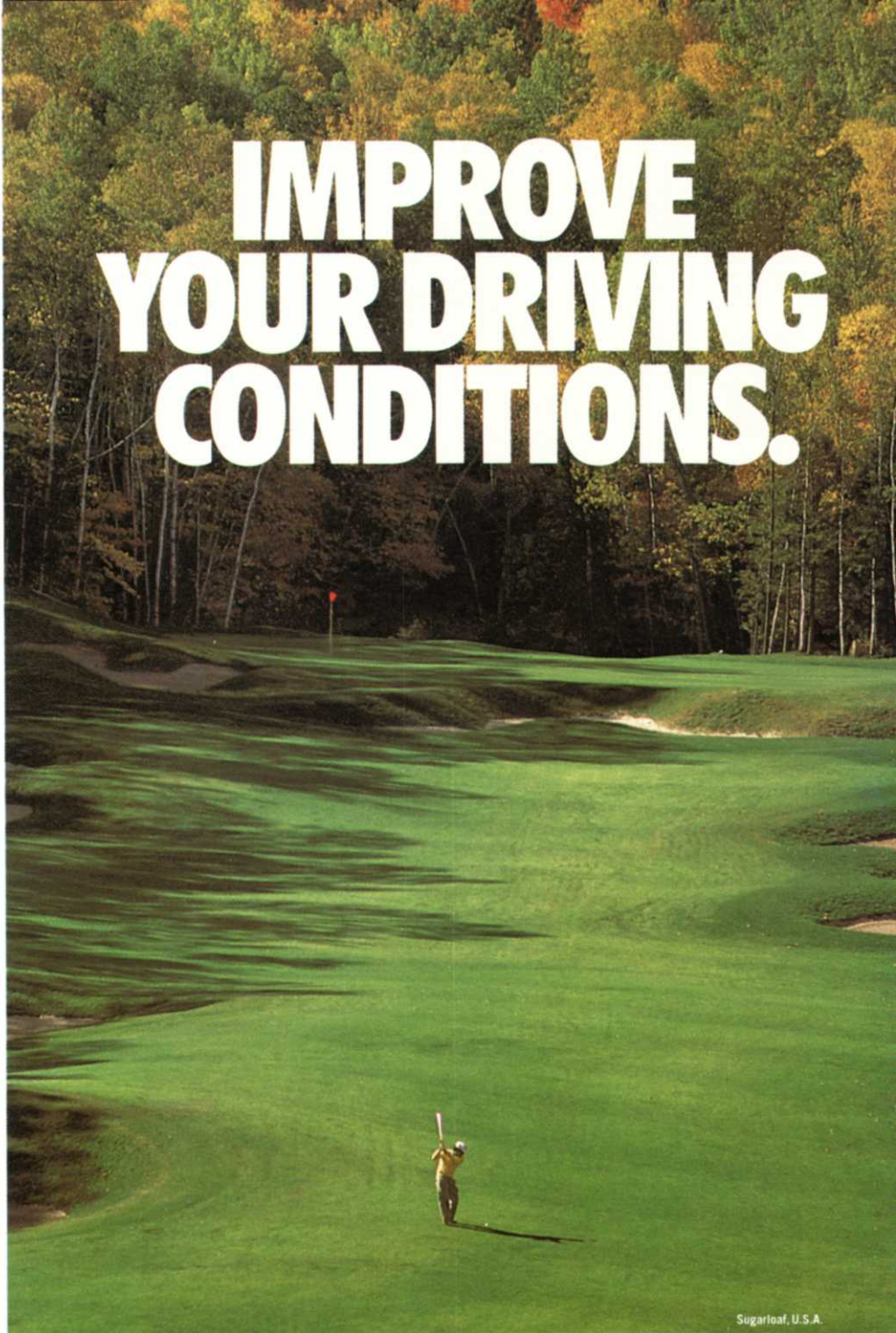
Kit Bradshaw

South Florida Field Day yields \$14,000

A total of 144 superintendents and technicians plus 28 suppliers raised \$14,000 for turf research at the Third Annual South Florida GCSA Field Day April 12 at Rolling Hills Golf Resort in Fort Lauderdale.

In addition, many superintendents and technicians renewed their pesticide licenses and obtained CEUs for certification while suppliers showed off their hardware for two hours at an

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Field Day

from page 33

indoor trade show and then demonstrated their heavy equipment for another two hours after lunch. Each distributor was allotted three minutes per machine (photo right). Attendance, limited to members of any FGCSA chapter, was up slightly over last year, according to Marie Roberts,



who serves both the state association and the South Florida chapter as executive secretary.

Oliver wins Poa

Rain shortened the Everglades GCSA's annual Poa Annuu Classic at the Naples Beach Club to nine holes May 22, but David Oliver of Martin Downs CC in Stuart won low gross honors for his third major FGCSA title in less than 12 months. Oliver won last year's Crowfoot Open at Grand Cypress in Orlando and Transition Tournament at Palm Coast.



Team title went to the host chapter: Mark Atwood, Jack Simpson, Wayne Kappauf, Lou Conzelmann. Atwood (photo right) was Master of Ceremonies at

the banquet. Among the honored guests were (above, from left) GCSAA President Jerry Faubel, FGCSA President Joel Jackson and former GCSAA and FGCSA President Dick Blake.



Central Florida mechanics meet

Golf course mechanics in Central Florida organized at the Second Annual Central Florida GCSA Field Day at Orange Tree CC in Orlando April 30. (Photo below) Cary Lewis, CGCS, of the CC of Orlando, addressed the organizational meeting which attracted 19 mechanics. The group will elect officers this month.



Everglades honors Joneses

Dan and Irene Jones, (photo above recently retired editors of *The Florida Green*, were honored with a plaque and permanent invitation to the Poa Annuu Classic by Everglades GCSA President Mark Atwood (center) at the Poa banquet.



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With five mechanics on staff, Boca Woods rebuilt 20 major pieces of equipment and saved a lot of money

BY LARRY KIEFFER



The shop team at Boca

Woods: mechanics

Jerry Napolitano, Robert

Jones, Dennis Kelley, Don

Lanning and John

Hindman

The directors of Boca Woods Country Club were incredulous.

They guessed that Superintendent John Gallagher and Greens Chairman Bernard Bernstein had a surprise in store when the pair asked the club's board to conclude its regular meeting with a little party at the newly refurbished maintenance complex.

And they were duly impressed with the brilliantly lit, white, sanitary setting. Remembering the dingy conditions of less than a year before when the members took over the 36-hole country club from the developer, the directors could see that Gallagher and his crew had been working very hard.

The improvement to the shop's appearance was particularly dramatic when it was filled with all those bright, shiny tractors, mowers and sweepers lined up with parade-ground precision.

After suffering through a lengthy ownership transition during which the developer spent as little as possible on golf course maintenance, the directors were pleased to see some obviously reliable machinery in tip-top condition. In those last months before the buyout was officially closed Nov. 1, 1988, it had been impossible to complete an 18-hole round without seeing at least one piece of maintenance equipment abandoned in the rough, awaiting a tow back to the shop... if something to tow it in could be started.

It would take several years, the directors knew, before all the worn-out machinery could be replaced, but at least they had made a start.

They assumed that they had been invited to inspect the first batch of new equipment, and that's why their eyes were not prepared to believe what their ears had just told them.

"Every piece of equipment you see in here," said Gallagher at the end of the party, "— well, every piece but one — is the same equipment that you bought when you took over from the developer. With one exception, these are all 1981- to 1984-model machines that we rebuilt right here in the shop.

"One is brand new. Can you pick it out?"

Nobody could.



John Gallagher and "the boss"

"That's when I knew we had really accomplished something," said Gallagher, savoring the moment several months later in his office.

What Gallagher's mechanics had done in about a year's time was completely rebuild 20 major pieces of maintenance equipment, saving the members more than \$210,000.



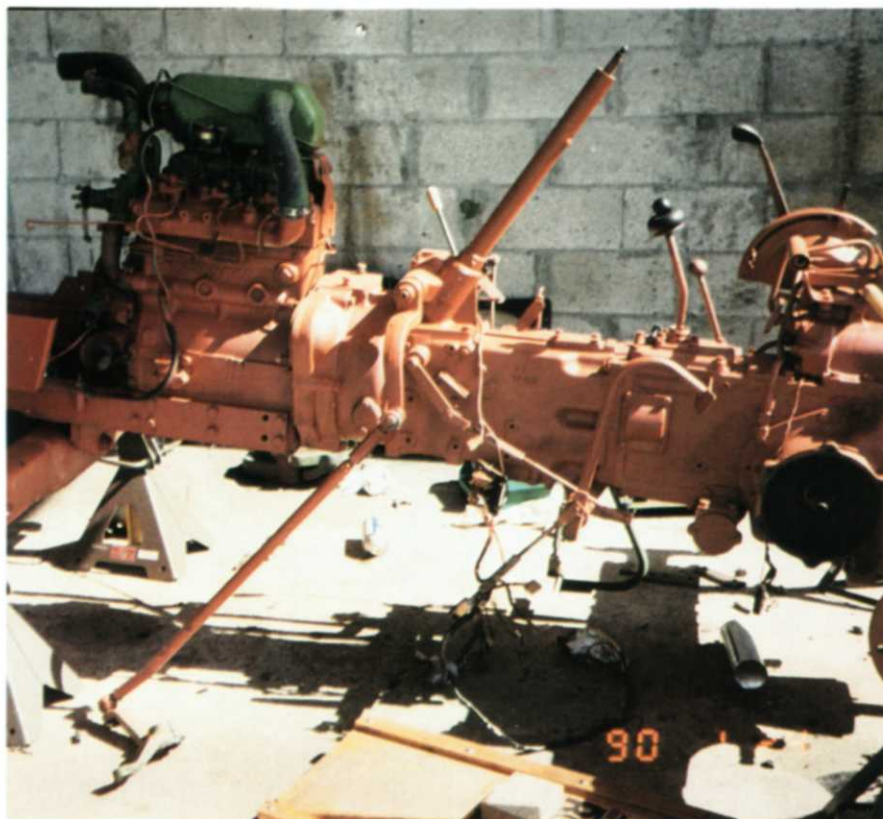
One of these tractors is brand new; the others have been rebuilt. Can you guess the new one? Answer next issue.

"That was all equipment that otherwise would have had to have been replaced," Gallagher said. "The replacement value today is \$290,765. We spent less than \$80,000 to make it exactly like new.

"Don is the key," he said, referring to Don Lanning, Boca Woods' chief mechanic and shop foreman, who had worked with Gallagher for three years at Coral Ridge CC in Fort Lauderdale.

Gallagher came to Boca Woods from Boca Del Mar after the members bought the facility. He immediately recruited Lanning.

Shortly after the pair began discussing Lanning's possible move to Boca Woods, Gallagher got a call from John Hindman, who had been chief



Every piece gets stripped to bare metal

Equipment	New	Rebuild
Toro Workmaster (1981)	\$6,600	\$1,800
Toro Workmaster (1981)	6,600	1,500
Toro Workmaster (1981)	6,600	1,800
Yamahauler (Reconditioned)	3,700	1,500
Yamahauler (1986)	3,700	1,000
Yamahauler (1985)	3,700	2,000
Sweeper	17,500	4,000
Lesco 7-gang rough mower (1985)	15,700	5,000
Lesco 7-gang fairway mower (1987)	16,100	5,000
Toro 7-gang rough mower (1985)	22,165	6,000
Toro sand trap rake (1984)	7,400	1,500
John Deere tractor (1981)	15,000	4,500
John Deere tractor (1981)	15,000	9,000
Massey Ferguson tractor (1987)	15,000	1,000
Ransomes 350D (1984)	38,000	6,000
Ransomes 350D (1984)	38,000	6,000
Toro 72-inch out-front sweeper (1981)	12,500	6,000
Toro 72-inch out-front mower (1981)	12,500	6,000
Toro sweeper	17,500	4,000
Toro sweeper	17,500	4,000
20 pieces of equipment rebuilt	\$290,765	\$77,600

mechanic under Gallagher at Boca Del Mar CC in Boca Raton. Hindman was working with a manufacturer and wanted to get back to a golf course.

"Lo-o-o-o-kee here!' I said to myself," recalls Gallagher. "I've got the chance to get two of the best mechanics in the business.' So the three of us sat down with a pot of coffee and worked it out. Don would be the chief mechanic and shop foreman; John would be the assistant. And we were all comfortable with that."

By rebuilding

his basic

equipment,

Gallagher can

think about

buying

specialty items

like a backhoe

or bucket truck

Three other mechanics — Jerry Napolitano, Dennis Kelley and Robert Jones — complete the Boca Woods shop team.

"A lot of superintendents have asked me how I can afford to have a shop foreman and four mechanics," Gallagher says. "At a 36-hole operation, how can you afford *not* to? Look at what we have done. And we can

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GUARANTEED ANALYSIS

Total Nitrogen (N)	10%
8.0% Water Insoluble Nitrogen	
3.0% Ammoniacal Nitrogen	
3.0% Urea Nitrogen	
Available Phosphoric Acid (P ₂ O ₅)	5%
Soluble Potash (K ₂ O)	9%
Magnesium (Mg)	10%
Sulfur (S)	8.0%
Iron (Fe)	1.0%
Manganese (Mn)	0.0%
Nutrient Sources: Urea, Methylene Urea, Ammonium Phosphate, Ammonium Sulfate, Ammoniated Superphosphate, Sulfate of Potash, Oxides, Ferrous Sulfate, Sulfates.	
Potential Acidity Equivalent 1300 lbs. Calcium Carbonate per Ton.	

Lebanon Country Club

GUARANTEED ANALYSIS

TOTAL NITROGEN (N)	24.0%
1.6% Ammoniacal Nitrogen	
11.6% Urea Nitrogen	
10.8% Water Insoluble Nitrogen	
AVAILABLE PHOSPHORIC ACID (P ₂ O ₅)	4.0%
SOLUBLE POTASH (K ₂ O)	12.0%
Magnesium (Mg)	0.7%
Sulfur (S)	5.0%
Iron (Fe)	0.4%
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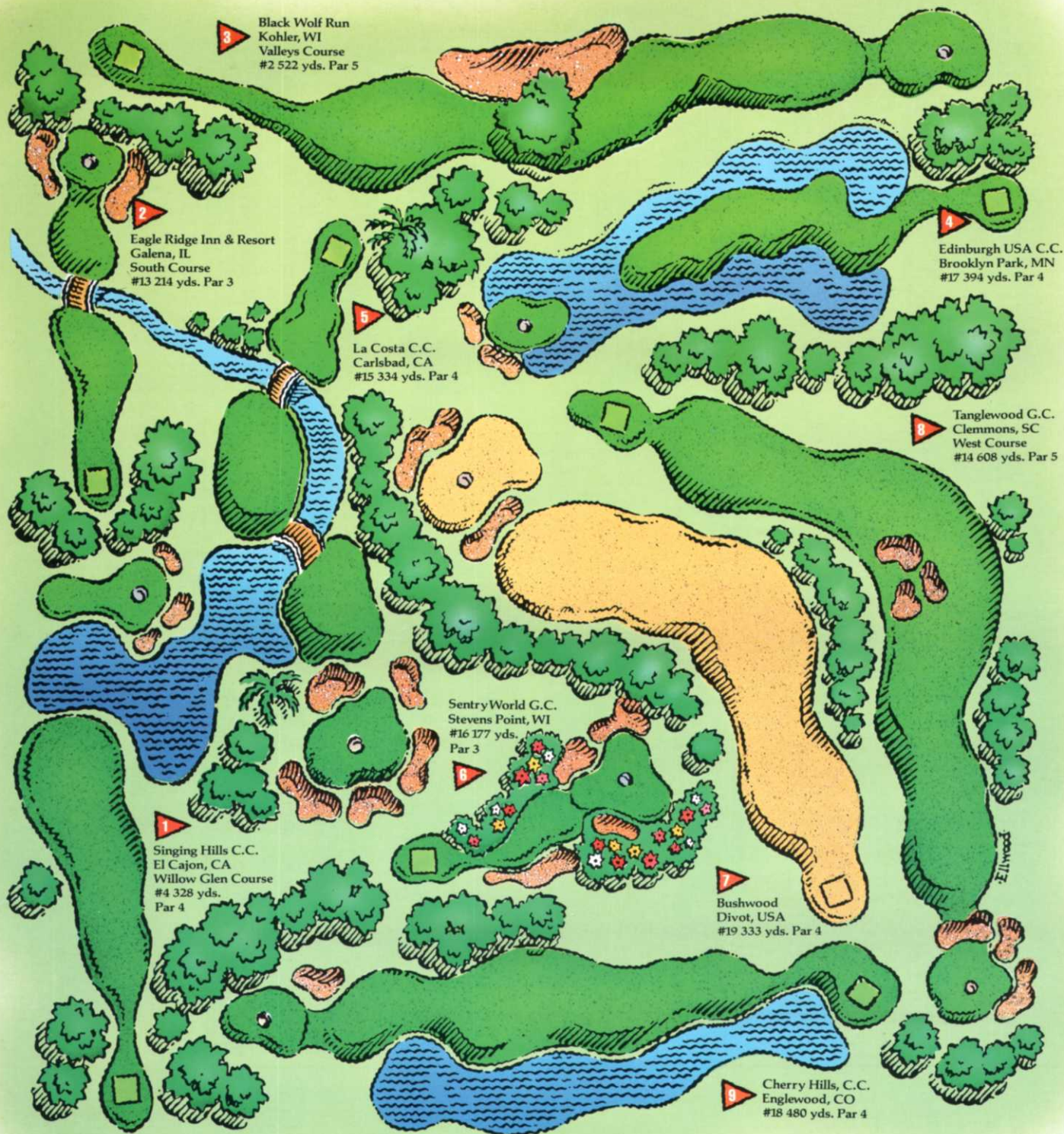
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The Reelmaster[®] 223-D

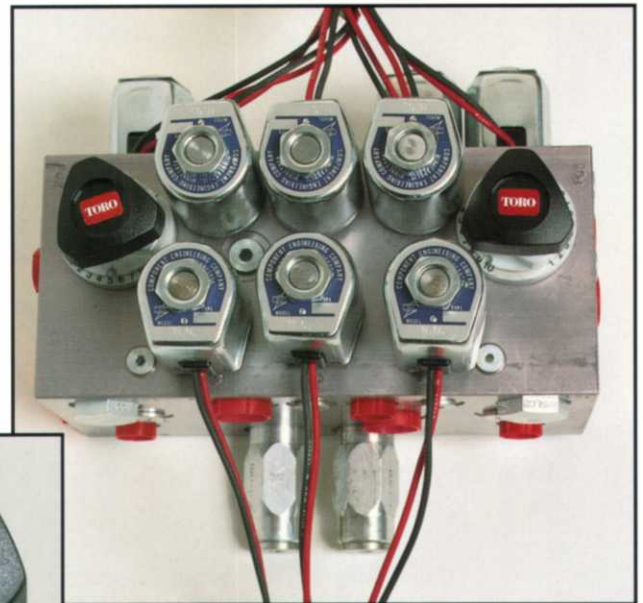
...developed to satisfy the rigid demands of today's superintendents who strive to furnish their customers with aesthetically pleasing and increasingly playable turf. The Reelmaster 223-D is optimally designed to provide unequaled cutting efficiency for enhanced turf quality and increased productivity under many different conditions. Read on to see why the Reelmaster 223-D proves to be a superior performer as it initiates a new standard of expectation in lightweight fairway mowers.

Master your cutting quality with unsurpassed efficiency

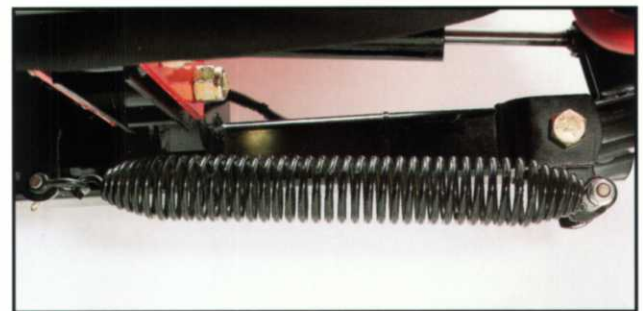
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The Reelmaster® 223-D gives you the productivity and consistent quality of cut you've been striving for.

When you combine the ground hugging ability of Toro's cutting units with the better maneuverability of this machine, you can change your mowing direction easier than ever.

Trailing cutting units are free to float in all directions to ensure ground following over undulations and to minimize scalping. In the event of impact, each cutting unit incorporates a breakaway device to help lessen damage.

Easy to handle, high capacity baskets are mounted to the carrier frame, not the cutting units, ensuring cutting unit stability.

Large diameter, narrow width tires provide a properly oriented footprint to minimize scuffing and attain the desired contact area to reduce ground pressure. To adapt to your specific turf

conditions, Toro offers two tread designs; one for applications where turf abrasion is critical and one where traction must be maximized.



Optional aggressive tread tire shown.

Clean, consistent cutting action

Patterned after Toro's proven Greensmaster® cutting units, these reels were redesigned to be more responsive to the specifics of fairway cutting to provide a superior quality of cut.

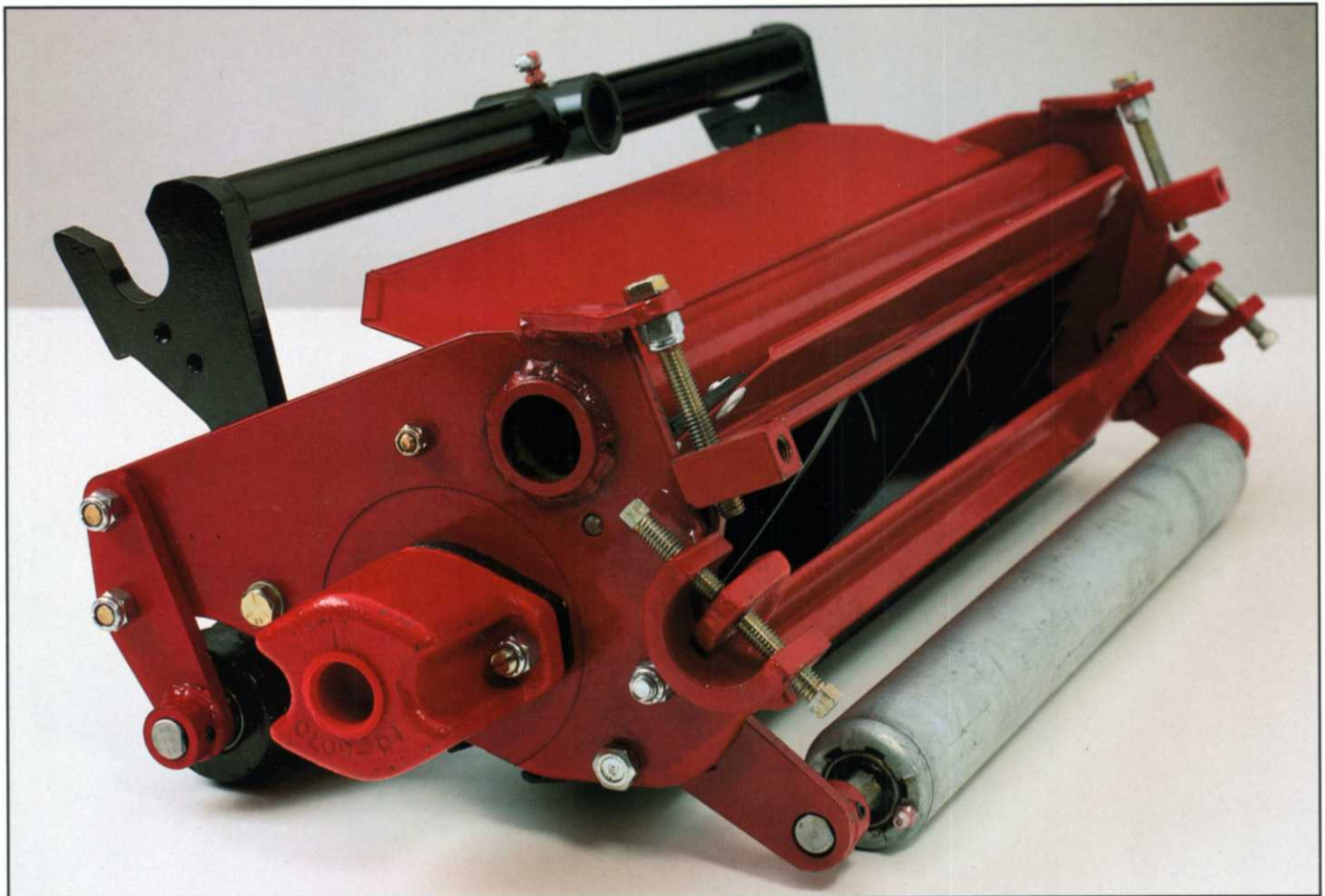
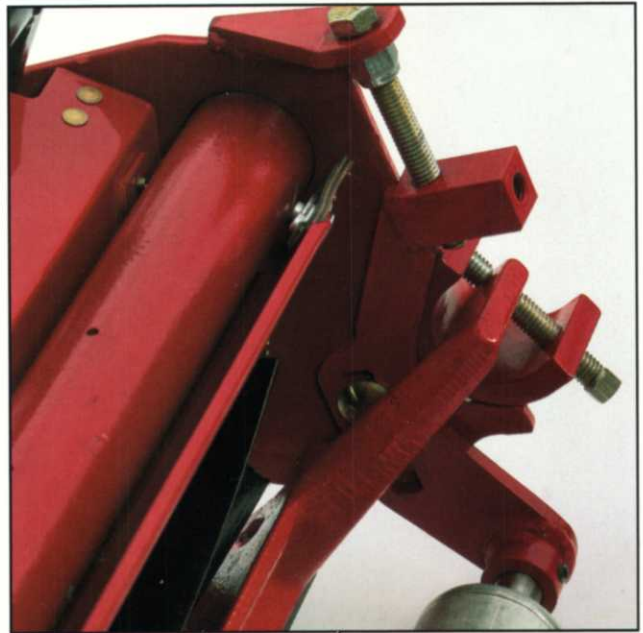
The bedknife, reel blades and front rollers are **heavy duty** to withstand the more rugged terrain.

Choose either 5 or 8 Bladed Floating Cutting Units to meet your desired height of cut range and mowing speed.

Toro recommends the 8 blade reel for heights of cut below $\frac{5}{8}$ " and, the 5 blade reel for heights of cut above $\frac{5}{8}$ ".

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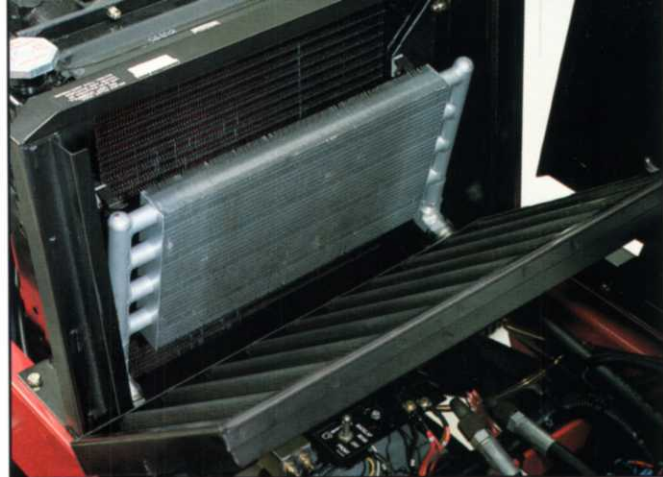
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The 223-D aims to keep you on the course, not in the shop, with high-tech reliability built-in for more trouble-free operations. One self-contained hydraulic valve block serves to eliminate the need for several individual valves and their plumbing to give you simplified controls and reduce the possibility of leaks.

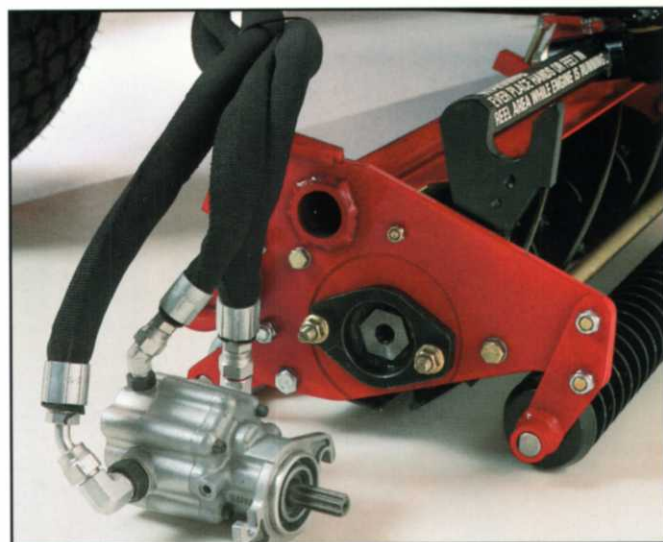


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Reelmaster® 223-D Specifications*

TRACTION UNIT, MODEL 03500			
ENGINE	Mitsubishi Model L3E, liquid cooled diesel engine. 23.0 hp @ governed maximum rpm of 3200. 58.1 cu.in. (952 cc) displacement. Heavy duty, 3-phase, remote mounted air cleaner. Electric fuel pump, 12 volt, mounted on frame with replaceable fuel filter. High water temperature shutdown switch. Fuel filter/water separator.		
RADIATOR	Mid-mounted radiator with industrial tube and fin construction; 7 fins per inch. Approx. 6 quart (5.7 liter) capacity. Remote mounted 1 quart (.95 liter) expansion tank.		
ELECTRICAL FEATURES	12 volt, cold cranking 530 amperes at 0° F (-18° C), 85 minute reserve capacity at 80° F (27° C), maintenance free battery. 40 amp alternator with I.C. regulator/rectifier. Automotive type electrical system. Seat switch, reel and traction interlock switches.		
FUEL CAPACITY	10 gallons (37.9 liters) diesel fuel.		
CONTROLS	Foot operated traction and brake pedals. Hand operated throttle, speed control lever, parking brake lock, ignition switch with automatic preheat cycle, single joystick control for cutting unit on/off and lift/lower. Cutting unit backlap switch and reel speed controls located under operator seat.		
GAUGES & DIAGNOSTICS	Hour meter, speedometer, fuel gauge, temperature gauge. 4 bank warning lamp cluster: oil pressure, water temperature, amps, and glow plug.		
TRACTION DRIVE	Sundstrand Model M25 hydrostatic transmission mounted on Dana Model GT20 axle 20.9:1 ratio. Foot pedal control of forward/reverse ground speed. 10 micron filter mounted directly on transmission housing. Axle is used as reservoir for hydrostatic transmission, 200 mesh inlet strainer.		
GROUND SPEED	0-10 mph (0-16.1 km/hr) forward, 0-4 mph (0-6.4 km/hr) reverse.		
TIRES/WHEELS/PRESSURES	Two rear steering tires: 18 x 8.50-8, tubeless, 4-ply rating. Two front traction drive tires: 26 x 12.00-12, tubeless, 4-ply rating. Recommended tire pressure: 10-15 psi (69-103 kPa).		
MAIN FRAME	All welded formed steel.		
BRAKES	Individual 7" x 1.75" (17.8 x 4.4 cm) drum type wheel brakes and parking brakes on front traction wheels. Hydrostatic braking through traction drive.		
STEERING	Power steering with dedicated power source.		
CUTTING UNIT SUSPENSION	Equal length lift arms with free floating, trailing cutting unit attachments with break away protection. Adjustable spring applied down pressure system.		
SEAT	Deluxe high back suspension seat.		
OVERALL DIMENSIONS	Height: 56" (142 cm); Length (w/o grass baskets): 103.5" (263 cm); Length (w/grass baskets): 116" (295 cm); Width—transport: 87" (221 cm); Width—outside of tires: 82" (208 cm).		
WEIGHT	Approx. 2200 lbs. (998 kg) with 8 blade cutting units, baskets and full fluid levels.		
WARRANTY	One year limited warranty. Refer to the appropriate Reelmaster 223-D Operator's Manual for further details.		
SOUND LEVEL	86 dB(A) under normal operation.		
CERTIFICATION	Certified to meet the American National Standard Institute's (ANSI) specifications B71.4-1984 and applicable Federal and State OSHA regulations based thereon.		
5 AND 8 CUTTING UNITS, MODELS 03505 AND 03508			
TYPE OF CUTTER	Five 21" (53 cm) reels supported by equal length independent lift arms.		
WIDTH OF CUT	95" (241 cm)		
HEIGHT OF CUT RANGE	¼"-¾" (6.3 mm-19.1 mm); 5 Blade: ½"-¾" (12.7-19 mm), 8 Blade: ¼"-½" (6.4-15.9 mm)		
HOC & ROLLER ADJUSTMENT	Front Roller: fixed position. Rear Roller: screw adjustable with bolt clamp lock.		
REEL/FRAME CONSTRUCTION	Fairway designed reels with high carbon steel blades. All welded construction. 5" (13 cm) diameter reels.		
REEL DRIVE	Reel motors feature quick disconnect for removal/installation onto cutting unit.		
BEDKNIFE AND BEDBAR	Opposed screw adjustment, replaceable bedknife mounted on a cast iron bedbar.		
CLIP FREQUENCY (ADJUSTABLE)	Model 03505: .62" → 1.17" (15.7 mm → 29.7 mm); 5 blade reel at 5 mph (8.04 km/h). Model 03508: .40" → .73" (10.2 mm → 18.5 mm); 8 blade reel at 5 mph (8.04 km/h).		
ROLLERS	Front cutting unit rollers are 2.5" (6.35 cm) diameter Wiehle rollers. Rear rollers are 2" (5.1 cm) diameter Full rollers; both have regreasable water pump type bearings.		
GRASS BASKETS	Five, easy to remove, high capacity grass baskets.		
ACCESSORIES			
MODEL NO.	DESCRIPTION	MODEL NO.	DESCRIPTION
03514	Traction Tires (Aggressive Tread): 26 x 12.00-12	03512	Rear Roller Scraper
30707	Armrest Kit		

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"As long as you do it *right*, you can do it indefinitely," interjects Lanning.

Doing it "right" involves stripping the machine to its framework, removing the old paint and starting with a fresh coat of primer. Every machine is completely re-wired and every part is cleaned and repainted or replaced. The engines are rebuilt or replaced.

"We use 100 percent original factory equipment," Lanning says. "We don't try to do any upgrading. In fact

that's one of two valid reasons for buying new equipment: when the technology changes to the point that "newer" really is "more efficient," it's time to get the new."

The other reason to buy new equipment, Lanning says, is to make up for the lack of mechanical skill.

"If you don't have the knowledge to do it right, don't even try it," he says.

Rebuilding is only half of the Boca Woods program.

"Once we get a piece of equipment in shape, we put it into a program of daily maintenance: washing it and hand-drying it daily, waxing it weekly or monthly, whatever is appropriate."



John Hindman wanted to get back to a golf course

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If the equipment is to be used almost exclusively by one operator, Gallagher has another trick. "After it's been rebuilt, we paint the

operator's name on it and put it on the floor with a can of wax and a towel."

Although the operator is expected to keep his equipment washed and waxed, he is not supposed to do any maintenance.

"The operator never touches a grease gun or a can of oil," says Gallagher. "That's the PM guy's responsibility."

Another Gallagher-Lanning technique is to assign each mechanic to one nine. First thing in the morning, each mechanic goes out to make sure all the equipment is running right on "his" course.

"They don't stay out there very long, but it saves time if they're right there

when adjustments have to be made to the reel mowers."

Gallagher's enthusiasm is not lost on his boss, Bernstein.

"We started with weed-infested, mole-cricket-damaged, unhealthy turf and no working equipment to maintain it. Many superintendents would have walked away from this challenge.

"What John and Don and their staff have accomplished is almost miraculous. Now, when you walk into this place, it's something we all can be proud of. And the members will reap the benefits for years because, not only will they have superior playing conditions, but our capital expenditures will be considerably less." 🐦

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FAST RELIEF FOR CONGESTION HEADACHES.



Prince of Naples

BY BRADLEY KLEIN

Within the immediate community of designers, builders and superintendents who have worked with him, Arthur Hills gets high marks for his meticulous craftsmanship and attention to detail.

Golf course architect Arthur W. Hills has not acquired the reputation that his work deserves. Within the immediate community of designers, builders and superintendents who have worked with him, Hills gets high marks for his meticulous craftsmanship and attention to detail. Yet to wider golfing circles, he remains largely an unknown figure.

The public has seen his best Florida work, even if it cannot identify the architect. Last winter in a PR man's dream come true, Arthur Hills-designed golf courses were featured in three consecutive weeks of national golf tournament telecasts.



Sensitivity to the environment won Hills international acclaim for his work at Bonita Bay.

On Feb. 17-19, 1989, the Senior PGA Tour set up shop for the GTE Suncoast Classic at the Tampa Palms G&CC with ESPN televising the proceedings. The next week ESPN showed the seniors in Naples for the Aetna Challenge at Bonita Bay. On the third week NBC telecast the Honda Classic, played on the TPC Course at Eagle Trace in Coral Springs.

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TREATED

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Each of these courses is ranked by *Golfweek* among Florida's top 50. So too is another Arthur Hills design, Coral Oaks Municipal GC in Cape Coral. And Hills is one of only nine active architects with a course — Bonita Bay in Bonita Springs — ranked among *Golf Digest's* top 100 nationwide.

Hills has designed so many fine courses in Southwest Florida that he has been dubbed "The Prince of Naples." But his demeanor is anything but royal. He is a quiet fellow who prefers to go about his work rather than promote it.

Born in 1930 in Toledo, Ohio, he played on the golf team at Michigan State University while earning a degree in horticulture. After a stint as a landscape contractor, he took a graduate degree at the University of Michigan, writing his thesis on golf course design.

The path he took into the business was, in Hills' own words, "pretty mysterious." He got his first taste of course design in 1966 when, following up on a friend's suggestion, he built nine new holes for the Orchard Hills CC in Bryan, Ohio. By then he had five children and was making a pretty good living, so he was reluctant to make a career shift. But while working as a landscaper, he put a listing in the phone book as "golf course architect" and the phone began to ring. It hasn't stopped since.

Now Hills is secretary of the American Society of Golf Course Architects. He has designed nearly 60 new courses, two dozen of them in Florida alone. Among his dozens of renova-

Most of Hills' Florida work is in the southern Gulf area

tion projects are such prestigious assignments as Oakland Hills in Birmingham, Mich., the Inverness Club in Toledo, and Oakmont outside Pittsburgh.

His main office, 10 miles west of Toledo, comprises three buildings on an old farm. Much of the land neighboring the property has been heavily developed, but characteristically for Arthur Hills, he holds his ground against such "modern" encroachment and prefers to surround himself with

the comfort of shady old trees.

In the Toledo headquarters, Hills is joined by chief manager Steve Forrest and a number of landscape architects and draftsmen. Together, they keep track of the 10 to 15 projects that are under way at any one time.

Normally, Hills personally makes at least six on-site visits per project. Other members of the firm will look in periodically to oversee plans and to carry out the changes that are frequently in order. To help him keep

New courses completed

Bonita Bay Club _____	Bonita Springs
Club at Pelican Bay _____	Naples
Coral Oaks Municipal _____	Cape Coral
Countryside at Berkshire (Executive) _____	Naples
Cross Creek (Executive) _____	Fort Myers
Foxfire CC _____	Naples
Gator Trace _____	Fort Pierce
Imperial CC _____	Naples
Ironhorse _____	West Palm Beach
Jonathan's Landing (Old Trail North) _____	Jupiter
Myerlee CC (Executive) _____	Fort Myers
Palmetto Pines CC _____	Cape Coral
Pine Lakes CC (par 3) _____	Naples
Quail Creek CC _____	Naples
Seville _____	Hernando County
Tampa Palms _____	Tampa
The Meadows (Groves walking course) _____	Sarasota
TPC at Eagle Trace _____	Coral Springs
Vista Gardens (Executive) _____	Vero Beach
Vista Royale _____	Vero Beach
Wilderness CC _____	Naples
Willoughby _____	Stuart
Windsor Parke _____	Jacksonville
Wyndemere G&CC _____	Naples

New courses under construction

Bonita Bay Club (second 18 holes) _____	Bonita Springs
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Renovation projects

CC of Florida _____	Boynton Beach
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Courses in planning stage

Collier Tract #22 _____	Naples
The Reserve _____	Port St. Lucie
Wulfert Point _____	Sanibel Island

close contact with projects, Hills relies upon Keith Foster, an ASGCA member and superintendent by training who works out of the Phoenix office, and Mike Dasher, a civil engineer and ASGCS member who works out of Orlando. With all the paperwork that flows through the company, however, nothing goes out the door without Hills lending his hand and giving his approval.

Hills has acquired a reputation for environmentally sound design. Bonita Bay is a good example of integrated wetlands. Here environmental concerns serve not as a detriment but as a plus in the design. The natural-looking beauty of the marshlands is preserved by setbacks that keep the most sensitive areas out of direct play. By using multiple textures of grasses for the rough and surrounds, Hills was able to delineate buffers for wetlands at Bonita Bay. The effect is to have softened the punitive character of the water hazards while drawing upon them to frame each hole.

At Coral Oaks Hills had the task of building a public facility for the city of Coral Springs on a very limited budget. Construction costs as well as subsequent maintenance budgets had to be held down. By specifying in advance the earth-moving requirements and desired gradations in fairways, tees and greens, Hills was able to ensure a close relationship between bids and final costs.

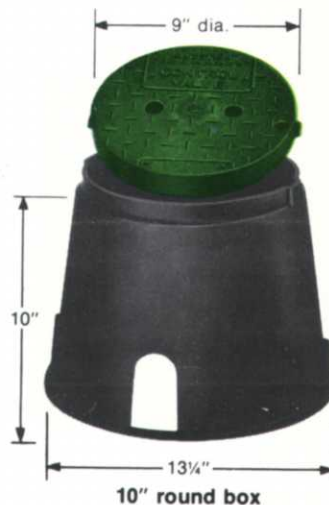
As many architects like to say, once the basic shaping has been done, a wave of the arm here or there to move a mound or change elevations can

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Hills does not design the kind of “signature hole” which is more suited to being photographed from a helicopter than to being played on the ground.

cost \$5,000. Hills regularly details a master plan that will determine between 90 and 95 percent of what will actually turn up as the golf course. Greens contours are detailed down to elevation changes of two and a half inches (0.2 feet). The whole plan for Coral Oaks, including clearing and grading, elevations, tee shapes, water bodies, contours and mounding, was then bid out, with Ryan Eastern Inc. of Deerfield Beach finally getting the contract.

Right about the time the bids went out in December, golf course superintendent Don Stewart was brought on board. Throughout the construction process, he served as mediator between the architect and the contractor. By participating in the earliest phases of the golf course, Stewart also was able to consult with the designers on an appropriate maintenance plan.

Coral Oaks was the first golf course that Ryan Eastern had ever built, so special attention had to be paid to communicating the designer's intentions to the earth movers and shapers. By Stewart's account, field rep Dasher visited every two weeks for a day or two. Together they walked the course, kicked stones, consulted on which trees to save, and worked out plans

for grassing and maintenance. They also assessed shot values and sight lines — aspects of courses design that no blueprint can fully anticipate in advance of actual construction.

Ground was broken at Coral Oaks in March, 1987. Hills and Dasher had examined the site from the air, had walked the center-cut lines, and had also consulted topographic maps in determining their routing plan. But because the land had been overgrown with thick Brazilian pepper, the architects could not get a full view of the terrain until the actual clearing began. Only then did they discover the real beauty of the native oak trees on the site.

A few subtle shifts in the placement of fairways and greens sites were needed in order to protect the maximum number of specimen trees. The biggest changes were that the 15th hole was shifted to the west to accommodate a stand of oak, and the 14th hole, originally planned at 325 yards, was shortened so that now it checks in at 283 yards. Hills' view is that “once a par four is short, it doesn't hurt to make it shorter” in order to acquire other assets. By way of compensation, the green at 14 was toughened up a bit in terms of slope and bunkering.

By the time the golf course was planted, Stewart already had a good idea of what it would take to keep Coral Oaks in good shape. The greens

are all Tifdwarf, the tees are 328 bermuda and 419 bermuda was used for the fairways. Sprigging was done by Grassing Unlimited of Tifton, Ga. Appropriately enough, the company finished grassing the golf course on Christmas Eve 1987. The golf course has since proven to be one of the finest presents the people of Cape Coral have ever received.

Hills does not design the kind of “signature hole” which is more suited to being photographed from a helicopter than to being played on the ground. Thankfully, he does not stamp a golf course with a trademark, such as Italian marble bunker walls or lakes that spray champagne. Instead, Hills builds courses that speak for themselves in terms of their design integrity, their accessibility to players of all skill levels, and their maintainability at reasonable annual budgets.

At Coral Oaks Hills has created bunkers that are not ominous. His preference is not to present the sand in an intimidating manner, but rather to build the bunker floor low to the ground and to make a minimum of sand visible. By stretching out bunkers horizontally, Hills creates the illusion of more hazards than actually exist. These bunkers can be maintained readily with mechanical rakes. By rolling down the bunker faces slightly and by altering their pattern around the perimeter, Hills is able to avoid a formulaic look.

His bunkers neither terrify approaching golfers nor make escape from the sand impossible.

The strategic placement of hazards is crucial when building a course for

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public play. Sand needs to be used to define appropriate lines of play while not unduly penalizing those who stray from the preferred paths.

At Coral Oaks, for instance, players can run the ball up to every green. When golf courses are designed merely to accommodate the high "target" style of the professional's game, there are too many forced carries over sand and water. When courses are built for all-or-nothing heroic play, there is little tolerance for slack in the maintenance program. Should certain areas not be kept cut down to specifications, the golf course can quickly become unplayable.

Hills knows how to design for maintenance without sacrificing playability. At Coral Oaks this meant working with the superintendent at the outset on issues of greens speed, bunker edging and the contour mowing of landing areas and approaches to the greens.

Municipal golfers have long suffered neglect in this country when it comes to providing quality facilities. The lure of big money tempts many an architect into building glitzy, high-profile resort courses that only the richest private clubs and resorts can afford to maintain. A growing number of PGA Tour players who put their names on the blueprints of new golf courses have little interest in promoting the game from the ground up — for the entry-level and public player.

In this sense, the quite understated approach of Arthur Hills is a welcome relief from the high pressure salesmanship and hype that have come to mark the game today.

Whether at Bonita Bay or Coral Oaks, Hills knows how to work with what is already there. His fee structure and design principles are flexible enough to meet the needs of very different clients. He does not force his design upon the land, and he does not impose his own distinctive style upon an unwilling owner or superintendent.

An attention to detail and to environmental sensitivity, a willingness to work hard and to create quality golf grounds that can be maintained over the long run — these are the trademarks of Arthur Hills.

Maintenance costs threaten industry, says Maples

Golf course architects must focus on controlling construction and maintenance costs so the cost of play will not become prohibitive, says Dan Maples of Pinehurst, N.C., newly elected president of the American Society of Golf Course Architects.

"The game of golf has experienced a strong surge of interest in the past five years," he said, "and everyone associated with the design, construction and maintenance of golf courses must work to keep the cost of play within reach of the general public.

"We cannot slip back into the image of an elitist sport."

A third-generation member of the Maples family that has played an important role in golf development in the Southeast, the new ASGCA leader has excellent credentials for discussing construction and maintenance

costs.

His grandfather, Frank, was superintendent of construction for Donald Ross at Pinehurst, supervising more than 150 men



Dan Maples

who used mules to work the Carolina sandhills into Pinehurst's first four golf courses.

"My grandfather designed much of the early equipment and was very aware of how the design could be coordinated with maintenance. He taught my father (Ellis), who soon recognized that severe slopes and deep bunkers required hand maintenance, which can escalate costs in today's environment."

Ellis Maples, who was president of the ASGCA in 1974, was a life member of the PGA of America and the Golf Course Superintendents Association of America. He designed and built Pinehurst's fifth golf course.

Ellis' brother, Henson, was superintendent at Pinehurst for 30 years. Other members of the Maples clan include professional golfer Willie and superintendents Joe, Gene, Wayne and Palmer, Jr.

"Donald Ross told my father that he (Ross) probably made a mistake by designing so many courses without the opportunity to review the construction," Dan Maples said. "He told my father that, if he had it to do over again, he would only design courses that he actually could oversee. That's something that all of us should consider in this booming era of golf course development."

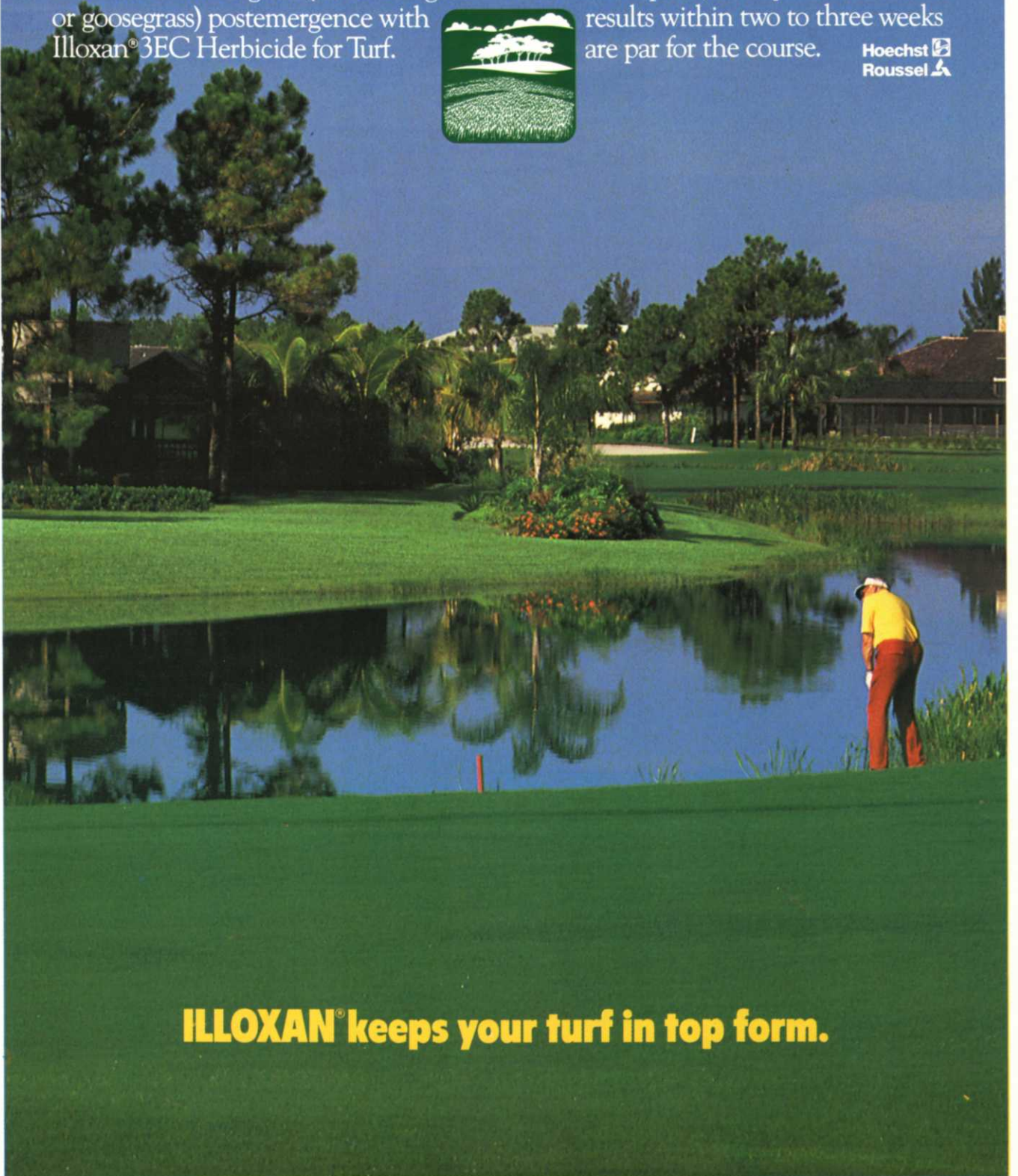
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Dan worked with his father on about 25 of the 65 courses with which the senior Maples was credited before he died.

"We are well aware of environmental concerns and are taking every precaution to make sure that our golf courses blend in with the environment," said the new ASGCA president. "If wetlands are used for a golf course, other wetland areas are developed so the natural habitat will not be disturbed."

2 Palm Beach architects join ASGCA

Two Floridians were among eight golf course architects elected to associate membership in the American Society of Golf Course Architects at the association's annual meeting in Pebble Beach, Calif., this past March.

Jan Beljan of Fazio Golf Course Designers Inc., who also became the second woman elected to membership, and Tom Pearson of Golden Bear International were among the group of new associates who brought the society's total membership to 108. Both firms are located in North Palm Beach.

Alice Dye of Delray Beach, the first female architect so honored, was elected in 1983.

In order to qualify for election, an architect must establish a record of individual work that meets with the approval of his or her peers, who also must deem the candidate "qualified to execute and oversee the imple-

mentation on the ground of his plans and specifications to create an enjoyable layout that challenges golfers of all abilities and exemplifies the highest standards and traditions of golf. He will counsel in all phases of the work to protect the best interest of his client."

The other associates elected this spring were Nai Chung "Lee" Chang, Atlanta; Robert Cupp, Atlanta; Keith R. Foster, Tempe, Ariz.; Tom Marzolf, Greenville, S.C.; W. Bruce Matthews III, Okemos, Mich.; and Mark A. Mungeam, Whitinsville, Mass.

Beljan's courses include Pelican's Nest in Bonita Springs, Windstar on Naples Bay in Naples, Bluewater Bay in Niceville and Gateway in Fort Myers. She also remodeled The Bayou Club at Bardmoor in Largo.

Pearson served as inspector of construction for Bear Lakes in West Palm Beach and Boca Pointe GC in Boca Raton and is credited as co-designer of Ibis-Seminole in Palm Beach Gardens.

Dan Maples of Pinehurst, N.C., was elected president; Thomas Clark of



Jan
Beljan



Tom
Pearson

Wheaton, Md., vice president; Arthur Hills, Toledo, Ohio, secretary; and Gerald Matthews, Lansing, Mich., treasurer. Other members of the board of governors include Pete Dye, Jeff Brauer, Keith Evans, Tom Fazio, Bob Graves, Denis Griffiths, Gary Kern and Ed Seay.



Members of the executive committee of the American Society of Golf Course Architects, from left: Tom Clark, Wheaton, Md., vice president; Gerald Matthews, Lansing, Mich., treasurer; Robert Trent Jones Jr., Palo Alto, Calif., immediate past president; Dan Maples, Pinehurst, N.C., president; Arthur Hills, Toledo, Ohio, secretary.

USGA commits \$3 million to research

The United States Golf Association last month made good on its promise to aid golf's environmental battle by committing \$3 million to research of the subject over the next three years.

Specifically researched will be the effects of fertilizers and pesticides.

The project will be managed by the Green Section Committee with the cooperation of the GCSAA.

The USGA committee which oversees research has been expanded to include recognized authorities from environmental agencies and has been renamed the Turfgrass and Environmental Research Committee.

The USGA also announced plans to appoint a wildlife ecologist specifically to assist golf courses in developing and preserving wildlife habitat.

"Right now, the game is threatened by the lack of knowledge about the environmental impact of pesticides and fertilizers used to maintain golf courses," said USGA President C. Grant Spaeth.

The work will be done by universities throughout the United States, assuring that studies are relevant to a variety of conditions.

Spaeth said the USGA will enter the program with no preconceptions. "We must maintain a position as the honest independent broker," he said.

Studies also will be geared toward the development of alternative and non-chemical pest control, and the influence of golf courses on people and wildlife.

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REPORT

Gray water on the green

Golf course superintendents help scientists decide between rose-colored glasses and a jaundiced view for recycled water.

BY DARCY MEEKER

When contaminants showed up in groundwater near drought-ridden Tampa, nobody knew where they came from, but there were lots of instant theories.

One possibility was the treated effluent (“gray water”) used as irrigation water at a number of sites including some golf courses. Some sticky questions are at stake. Is gray water bringing those contaminants with it? Is it changing soil bonding characteristics so that materials leach through more rapidly? Or is the data flawed?

The FGCSA moved quickly toward the only cure for fear: true truth and real reality.

Cooperators are Florida’s Department of Environmental Regulation, the Department of Agriculture and Consumer Services which licenses pesticides, and the U.S. Geological Survey.

“The purpose of the study is to poke around in the gray water area a little more. We’ll compare golf courses with similar soil types and management practices, where the only difference is that one uses recycled effluent and the other doesn’t,” said Tom Latta, chairman of external affairs for the Florida Turfgrass Association.

“The objective is to replace questions and fears with data and answers so we don’t have to work on fears and speculations, but can answer with hard scientific fact.”

Latta listed two ideas that need to be investigated.

“One idea is that, as you apply pesticides to soil and turf, you build up communities of organisms which break down these pesticides. Gray water may have some ingredient which kills these organisms and prevents breakdown of those pesticides.”

Another hypothesis is that gray water may gum up the soil. Sites in the soil which normally bind the pesticides may be pre-empted by components of gray water. Soil that used to filter out pesticides would then allow the chemicals to pass through.

“The important thing to remember in all of this,” Latta says, “is that this is a research project which is trying to develop some insights on some theories, but the theories may not be proven, and even the concern may not be confirmed. The data may be flawed. The monitoring wells that were in place are in place because of the need to monitor effluent. They’re not designed for highly sophisticated,

sensitive, groundwater monitoring studies.”

Latta said, “What we may be seeing here are problems of sampling technique or well installation, rather than pesticide leaching.”

Other data Latta has seen from sandy soils show very little evidence that pesticides leach.

“So far, in my exposure to the data, there’s very little evidence of pesticide moving below the root zone. Soil is a good filter, but you can saturate the sponge. If you irrigate much heavier than you should, you can wash the pesticides down through the absorptive layer before they can be absorbed.”

Turf management is urban agriculture, Latta said, and it’s especially important to make sure it is environmentally compatible since high concentrations are nearby.

Chip Lewison, golf course superintendent at Dunedin Country Club, is cooperating in the project.

“They want to collect good quality data to help set future standards. We provide background information on maintenance, use and levels and so on as a guideline as to what we (the golf industry) are doing or not doing to affect groundwater contamination.”

Lewison said, “What I’ve been trying to do is talk with some area supers who have monitor wells on their courses — what they are testing and what some of the results might be.”

Lewison said the data surfacing within the last 18 months has brought the subject to light, but golf course superintendents had discussed the

subject in Anaheim, Calif., in January, 1989.

“We knew it was going to become more of a problem and decided we’d better start collecting data, and keep ourselves abreast of people who are against pesticide usage and so on. We want to avoid the scare tactics some people are using and we want to see if we’re doing something that is harmful.”

Lewison pointed out that most of the products used on golf courses can be bought by homeowners at garden stores. “We buy in larger quantities, and we’re trained and certified — we get four to eight hours of classes and testing every year. That’s the difference between us and the homeowners.”

Mark Jarrell, super at Palm Beach National GC, says he has been doing testing for some time and turf seems to be insurance against groundwater contamination.

“We’re trying to do our part to make sure our use of products and materials is going to be for the benefit of everybody and not end up causing problems for other people down the road. We’ve put a lot of money and research into research.”

Jarrell cited a study of golf course effects on groundwater in Cape Cod. Some 19 wells on 30-year-old golf courses were tested for 17 turf chemicals. Of these, seven were not found, one was at 20 percent of the health advisory level (maximum healthy exposure) and the rest were 6 percent or less of HAL.

DER officials wanted to wait until a formal report was ready to comment.

Red-eyed flies secure beachhead in Bradenton



Some golf courses near Bradenton have busy little silent partners helping them control mole crickets, those brown burrowers who cost Floridians over \$40 million per year, browning out golf courses, lawns, pastures and vegetable fields.

In October, 1988, entomologists from the University of Florida’s Institute of Food and Agricultural Sciences released a biological control agent at the IFAS Research and Education Center in Bradenton.

The result: “red-eyed flies,” *Ormia depleta*, a natural enemy from mole crickets’ native chomping grounds of

IFAS biologist Sue Winewriter



Brazil, have prospered in their new Florida home.

"Descendants of those flies are now abundant and they occupy an area of at least 78 square miles surrounding the IFAS station," said Howard Frank, director of the mole cricket bio-control research at IFAS.

Red-eyed flies respond to the mole cricket mating call and lay living lar-



Howard Frank

vae on or near that scourge of Florida turf. The young burrow into the mole cricket and kill it as they grow.

Before the experiment could

begin, of course, it had to be demonstrated that the fly would not attack any other Florida creatures, and the proper permissions had to be obtained from U.S. and Florida departments of agriculture.

IFAS biologist Sue Winewriter invented the techniques which allowed her to rear *Ormia depleta* in the lab. It was a first, not only for this species, but for its close relatives, too.

Flies showed up in Manatee County and northern Sarasota when Frank's colleague Tom Walker and grad student John Amoroso set traps to measure the spread of the fly. It is not known how far north and south the fly can establish populations. It comes from a moderate climate in Brazil,

though, and the IFAS scientists hope the fly can cover the Sunshine State.

Nematodes meet nemesis in battle with bacteria

Nematodes, worms so small they look like fuzz, are a big problem for golf courses in Florida, but an IFAS scientist thinks he's on the trail of some even smaller organisms that can give the tiny worms a big problem of their own.

"It's exciting, but we're a long way from being there," says Donald Dickson, an IFAS nematologist, studying nematode nemeses — two

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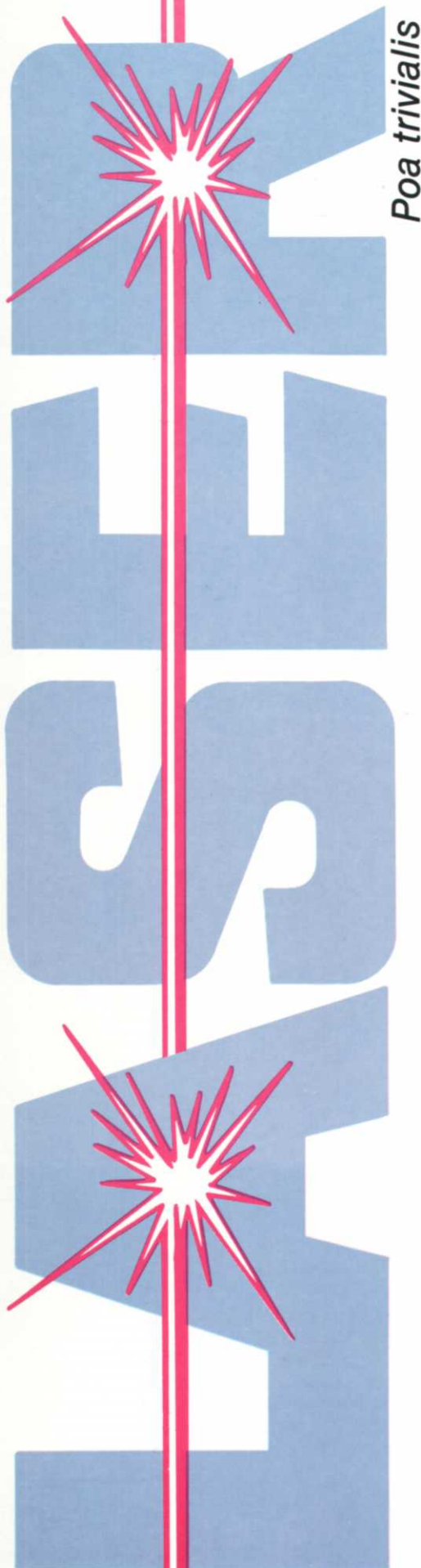
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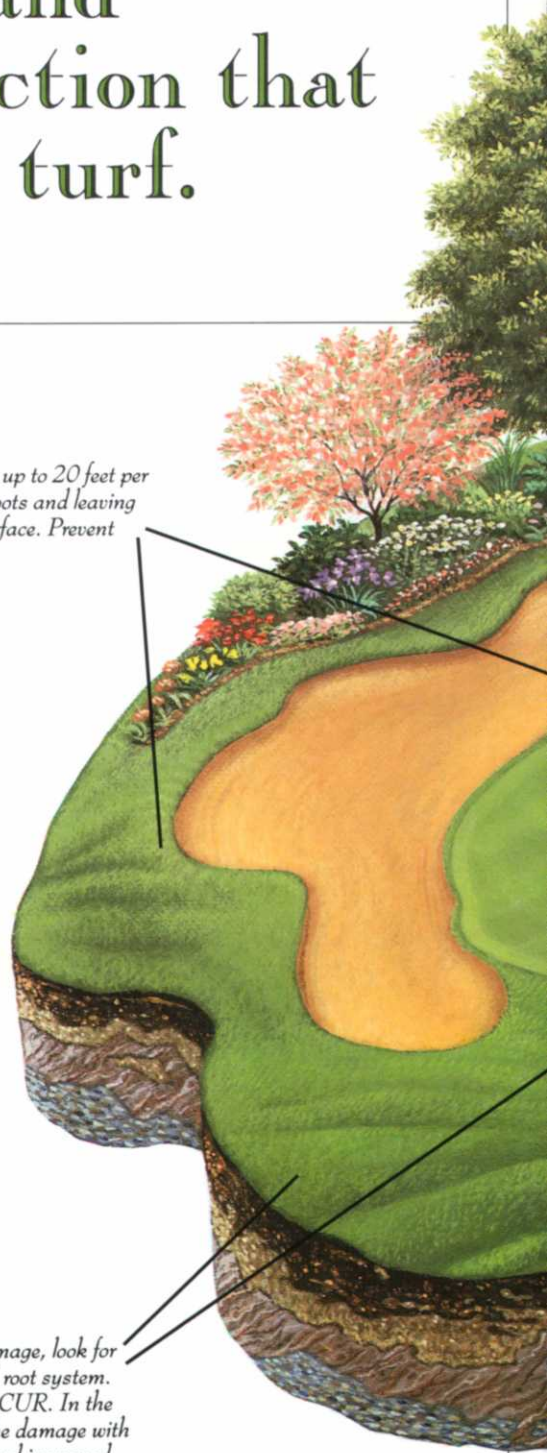
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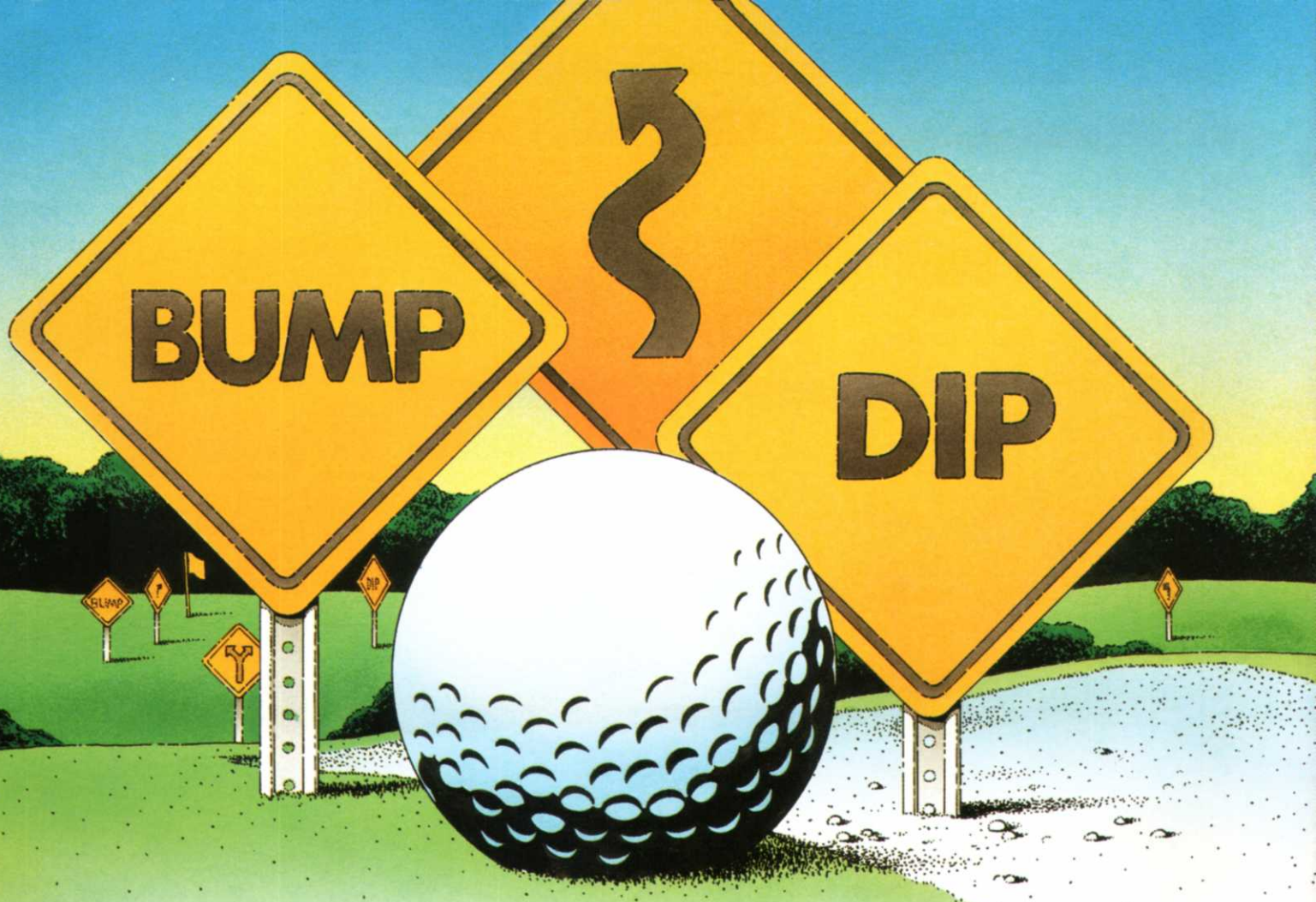
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bacteria and one fungus — with a \$16,980 grant from the Florida Turfgrass Association. “Florida has a higher rate of infection than any place I’m aware of, except maybe Hilton Head and New Jersey, because of the sandy soils. We have a thousand golf courses and 90 percent are using nematicides on golf greens to control nematodes.”

Nematodes are sneaky little buggers which build up in January and February, destroying grass roots, and you may not see the results until May, Dickson said.

“Nemacur is all the golf courses have to control the nematodes with, and Dr. Ou, an IFAS soil scientist, has found microbes biodegrading



Don Dickson

Nemacur,” Dickson said. The biodegrading microbes build up, giving each application a shorter life span. Nemacur can be used legally twice a year; it’s expensive and there’s no possibility to rotate because there’s no other chemical out there.

“Factors that make good nematicides make chemicals environmental problems. DBCP was suspended in ’77 and we’re still picking it up out of the water; we’re still finding EDB, banned in ’83-84.”

Dickson said that the FTGA-sponsored research into biological controls for pest nematodes is going well.

“In year one, we identified *Pasturia penetrans* bacteria specific to the lance nematode and to the sting nematode, the two major nematode parasites on turfgrass in the state of Florida. Now we are trying to ascertain if they will cross control.”

Using naturally infected nematodes in their lab studies, the team follows population dynamics of the nematodes, taking samples every month. Other experiments track the bacteria and fungus which attack the nematodes. Also under evaluation: whether Temik or Nemacur cause nematodes to be more susceptible to the biologi-

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cal control. Some past data seem to indicate that carbamate nematicides like Temik may do that.

The experiments are tough because it's not easy to grow the organisms in the lab. Some requirements are very particular, like maintaining 25 to 27 degrees Celsius.

Biocontrol harmless to good nematode

Grover Smart, the IFAS nematologist working on the mole cricket biocontrol project, says the biocontrol for sting and lance nematodes will not hurt the nematode which wears a white hat in the mole cricket wars.

"There would be some real advan-

tages in doing the two of them together," said Smart. "For the most part, in controlling plant parasitic nematodes, we have used chemicals. At the rate the chemicals are put out, however, they will also will kill nematodes put out to control mole crickets."

Smart said FTGA cooperators in the mole cricket project are limiting their nematode sprays to greens. "The hope is that there will be enough infected mole crickets in untreated areas to keep the nematode populations surviving. Where we have put the nematode, in most cases, is in roughs where they would not be treated with the chemical nematicide."

Lakes doing well near golf courses

Numbers are being crunched this very minute for a final report on the \$5,000 FTGA-sponsored research by Dan Canfield in the IFAS Fisheries and Aquaculture Department in Gainesville. The report is slated for fall publication.

The study of the fish population in Gate and Mountain lakes sampled fish with column nets, gill nets, shock and other methods. A smaller number of the fish were brought back to the lab to be weighed and measured.

Biologist Mark Hoyer said, "We pulled the inner ear bone (it's called

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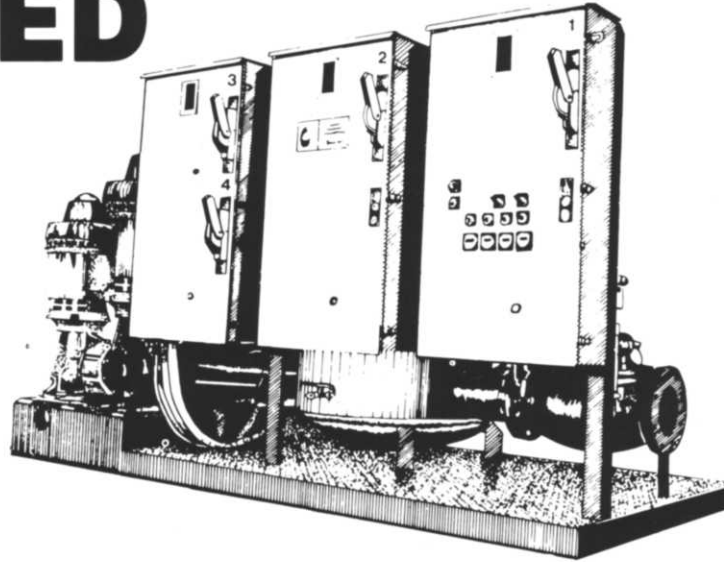
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the otolith) to see how old the fish are and how fast they have grown." The bones have growth rings like a tree.

Hoyer commented that at least three or four largemouth bass were found weighing over 10 pounds. The largest was from Mountain Lake and weighed 13.1 pounds. Mountain, with 136 acres, had 17 species of fish; Gate, 17 acres, had 12 species, including a walking catfish.

Neither lake had a nutrient overload, he said.

Area residents feared intensively managing the lakes for tourist enjoyment could lead to eutrophication, but both lakes appear generally healthy from preliminary results, Hoyer said.

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Below are the budgets of 10 major environmental advocacy groups.
If those groups spent as much of their \$253 million on environmental research as they do on legal fees...*

Environmental Advocacy Groups

Organization	Membership	Latest Budget
Nature Conservancy	436,407	\$88,021,000
National Wildlife Federation	5,800,000	69,017,000
National Audubon Society	550,000	32,573,730
Sierra Club	426,000	28,059,498
Nature Resources Defense Council	95,000	11,760,242
Wilderness Society	250,000	10,932,448
Environmental Defense Fund	100,000	8,530,454
Envir. Policy Institute/Friends of the Earth	42,000	2,500,000
Izaak Walton League	50,000	1,544,908
Environmental Action	20,000	958,028
Total	7,769,407	\$253,897,308

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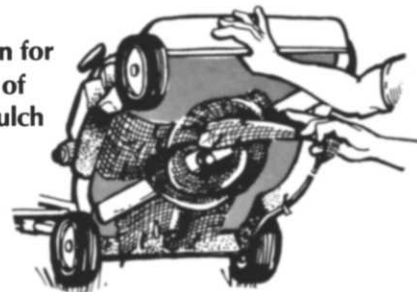
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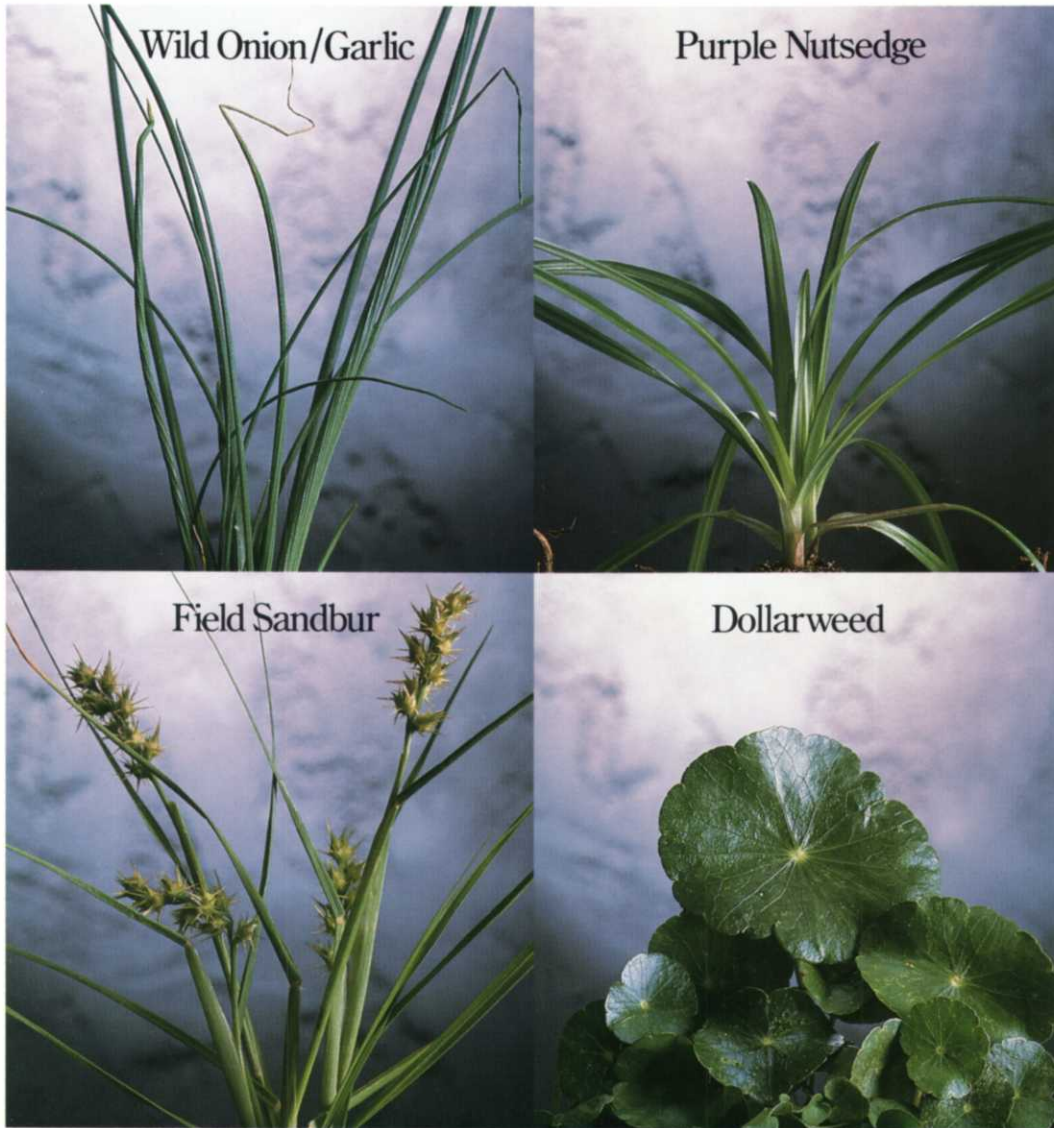
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Golf's Own Imagineer

Walt Disney would have loved Tom Mascaro who combines engineering skill with imagination

BY KIT BRADSHAW

"My objective through all my years of business was to develop equipment that had never been made before. And now John is continuing on with the same thing."

Sounds a little like Tom Mascaro, 74, is getting ready to pass the torch to his son, John, 24. But don't bet the store yet. As Tom says, "I've tried to retire three times before and always came back."

There's a difference this time.

The last time Tom had what might be called a brief lull in his active career was in the early 1970s. Young John was only turfgrass high at the time.

Today John has his associate degree in business management from Tallahassee Community College. He has taken additional courses in turfgrass management and has learned the business by working with his father.



Tom Mascaro
Age: 74

Experience: West Point Products Corp., Pennsylvania, president; Turf Grass Products, North Miami, Fla., president; Turf-Tec International, director.
Professional: Consultant, lecturer, writer on all subjects relating to turfgrass. Adjunct professor, Florida International University, Miami; Biscayne College (now St. Thomas University), Miami.
Awards: USGA Green Section Award, 1971; GCSAA Distinguished Service Award, 1976. Many state and regional awards.
Personal: Wife, Dorothy; daughters Tammy 27 and Linda 26; son John 24.



John Mascaro
Age: 24

Experience:

*Turf-Tec International,
North Miami, Fla., CEO;
Turf Grass Products,
North Miami, Fla., vice
president.*

Education:

*Associate of Arts,
business management,
Tallahassee Community
College.*

Professional:

*Sports Turf Managers
Association, Florida
Chapter 1, secretary;
GCSAA, South Florida
GCSA; Florida Turfgrass
Association.*

Personal: *Wife, Jenni.*

John has become Tom's right-hand man in their company, Turf-Tec International, with headquarters in North Miami. And he and Tom have dovetailed their efforts to expand their line of golf course equipment into diagnostic tools to help golf course superintendents gather data about their turfgrass and greens in order to better maintain their courses.

If there is a transition in the offing, then it is moving steadily and very smoothly.

Walt Disney would have loved Tom Mascaro. Years ago, Disney coined a word to describe a person who combines imagination and engineering ability:

Imagineer.

Although Disney and Mascaro never met, the word describes Tom perfectly.

And what has this Imagineer developed in his nearly half century of creativity? The aerifier, the verticutter, the Verti-Groove and the soil profile sampler, just to name a few.

Mascaro says he has had the brainstorm for the creation of all these mechanical devices from other people's suggestions, helping to solve problems that needed new, innovative solutions.

Take the aerifier, for instance.

"My brother, Anthony, and I had developed a mechanical leaf-gathering machine in 1946 and we went to Washington to discuss its application with Dr. Fred Grau, director of the USGA Green Section and a pioneer in turfgrass," Mascaro recalls. "He thought the machine was a good idea, but he said that if we could make a machine that cultivated bluegrass fairways, we could make a million dollars. The problem with bluegrass fairways was compaction.

"So we came back home and worked until we invented the aerifier, the first practical tool that cultivated the turf without disturbing the turf. It was basically a modified plow. It removed cores of soil and redistributed them."

Did they make a million dollars?

"Well, let's just say that because of the aerifier, we were jet-propelled into the national picture overnight. We had developed a machine that was just what the superintendents were looking for and the word spread rapidly.

"For a time, we had mailbags with checks in them that we couldn't open for a month because there was so much mail.

"A million? Well, it did pretty well."

Things started getting pretty hectic for Mascaro once the aerifier hit the national scene.

Grau and L.J. Noer, the city of Milwaukee's world-famous agronomist, made arrangements for Mascaro to speak at turfgrass seminars throughout the country. For years, he attended about 25 such meetings annually.

He not only talked; he listened.

He took prodigious notes at the conferences, learning from turfgrass experts. For 40

years, he carried a notebook with him, recording the problems, the needs and the suggestions he heard from golf course superintendents he met on his travels. The notes were translated into designs and into machines to help superintendents do their jobs better.

For instance, when Mascaro found out that some superintendents were using the aerifier on greens in addition to fairways, he invented a smaller version for greens and "it took off like wildfire," he recalls.

"Now, when you invent one thing, everyone thinks you can invent anything. And we had all kinds of suggestions about what was needed. Like the verticutter.

"The verticutter. Now that's an in-

vented word as well as a machine. It was a vertical mower... a true mower that cut the green vertically. You see, a greensmower is horizontal. It only

"We'd verticut half the green, sweep it up and then invite the pro which side he wanted to putt from. He picked the verticut side every time."

cuts the blade that's up. But all grass blades don't stand up. some of them are down at the base, and they never get cut.

"They just lie there, and they accumulate as part of the thatch. The verticutter was designed to remove

thatch before it started by cutting those blades, runners and so forth, before they could form thatch."

Mascaro developed a unique sales presentation for the device.

"We'd get the pro and the superintendent out on the green," he recalls, and we'd verticut half the green, sweep it up and then invite the pro which side he wanted to putt from. He picked the verticut side every time."

In 1969, Mascaro's Pennsylvania-based company, West Point Products, merged with Kearny National, and he became vice president of development. Three years later, the company divested its turf division and Mascaro took the cue to move to Florida.

Once in Florida, Mascaro took four years to begin Turf Grass Products,



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which was joined later by Turf-Tec International.

"I sat around for four years," he recalls.

"But you were inventing things in your head the whole time, Dad," chided John.

What came from those mental designs was the soil profile sampler, which Mascaro claims is the only one of its kind.

"The Soil Profile Sampler is vertical, and the cutter blades split apart so that the profile of the soil is visible," he says. "You can see everything that's been done to that soil sample in a nice slice. You can even photograph it for reference.

"I have a slide of a soil sample which shows soil that seven superintendents

had worked on. The sample shows each one's pet mixture in that piece of soil."

Miami's Orange Bowl was the birthplace of the Verti-Groove.

"I was part of the transition from artificial turf back to good grass. . . natural turf," he says. "So when they had a problem with the turf, I was called in. The problem was that the roots were decomposing down deep. The samples we took showed the roots had turned into a giant sponge and the field didn't drain.

"Something had to be done to remove those dead roots, not only to get water into the soil, but also air, nutrients and so on. So I invented the Verti-Groove.

"It takes out thin slices of soil, six

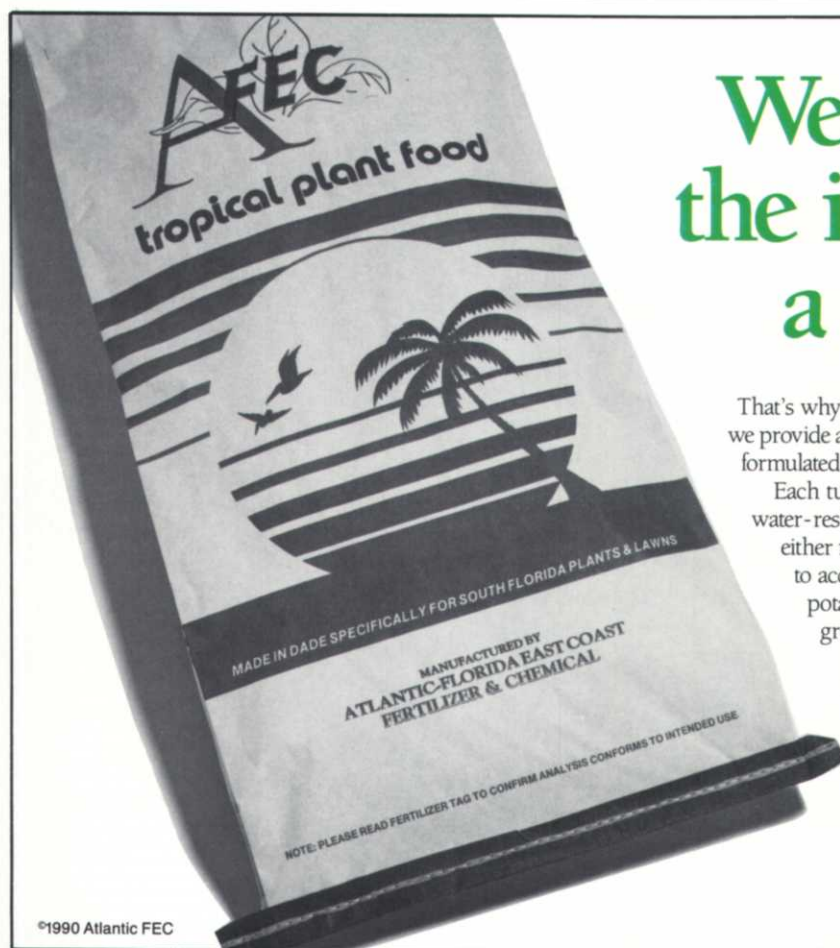
inches deep, and brings the soil to the top without materially disturbing the surface. They could play football in the Orange Bowl the day after we used the Verti-Groove."

Mascaro adds that until that time, no machine had been made that went more than three inches deep to cultivate turf. The Verti-Groove helps to cultivate the soil to a much greater depth.

If the Verti-Groove was born in the Orange Bowl, its development also spawned the successful collaboration between father and son on the creation of new devices to help the industry.

When John joined the company, Turf-Tec changed focus.

"We already had the Soil Profile



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“Growing Turf the Hard Way”

a video opportunity

Tom Mascaro keeps his focus sharply on the future.

“I had been asking myself what was going to become of my collection of 75,000 slides when John came up with a great idea,” Mascaro said at the South Florida GCSA Field Day this past April.

“He suggested we turn them into a series of video tapes.”

Professionally produced and distributed under the Turf-Tec Productions label, the first tape, “Growing Turf the Hard Way,” was released in April.

Nearly a verbatim replay of Mascaro’s most popular banquet lecture, the tape not only will become a sought-after piece of memorabilia for the current generation of turf managers, it should become a stock training item for untold future generations.

Featuring Mascaro’s familiar droll, understated delivery, the tape is in some ways superior to his live lecture because it uses the production technique of “dynamic stills,” which creates much more visual interest than a

static slide on a silver screen.

For those who haven’t heard “Growing Turf the Hard Way,” the program humorously details many of the problems Mascaro has encountered in more than half a century of work with golf course superintendents and other turfgrass managers.

“We should learn from the mistakes and experiences of others,” Mascaro says, “because we cannot possibly live long enough to make them all ourselves.”

Sampler,” John says, “so we decided to come up with a line of diagnostic tools that were as simple as possible — no engines or moving parts — tools that normally would be available to university researchers.

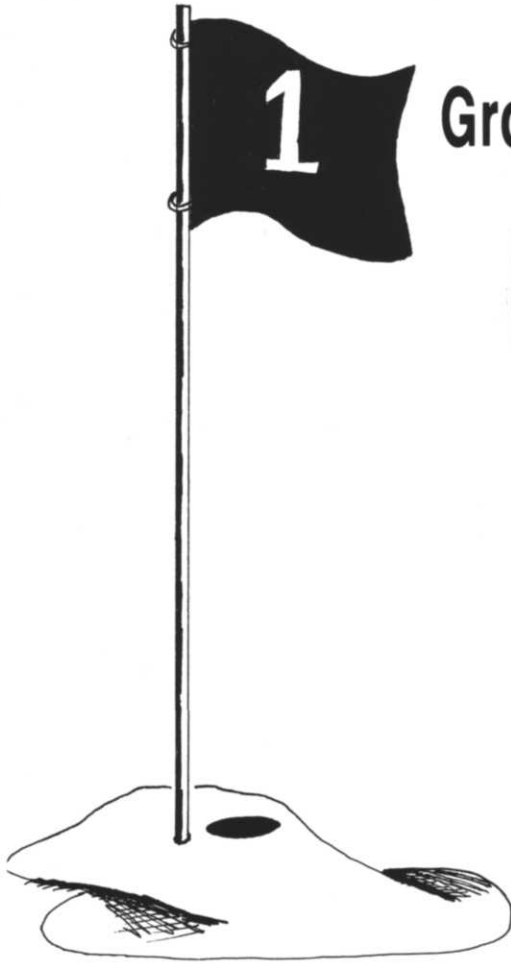
“But the tools that researchers use are impractical for superintendents to use. So we tried to come up with practical approaches to analyzing problems and practical lab instru-

ments that we could put right into the hands of the superintendents.”

Development was a cooperative process, with John translating the original concept into a prototype of wood, steel and leftover parts. Father and son then finely tune the working model before having a local machine shop create a production prototype.

Their new devices include the

continues on page 72



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from page 70

Moisture Sensor, Digital Thermometer, pH Meter, Penetrometer and the Infiltrometer.

The Penetrometer is the superintendent's equivalent to a Stimpmeter. It measures percentage of soil compactness from 0 (uncompacted sand) to 100 (cured cement). Fifty is the preferred measurement, Tom says, meaning the soil should contain 50 percent solids, 25 percent air and 25 percent water.

"In Florida," says John, "the problem with soil is often compaction. Between mowing greens daily, high traffic and so on, there are some greens that become so compact they show 80 percent compaction on the Penetrometer.

"You have to remember that practically any area will become compacted if you are putting a 2,000-pound mower on it every day of the week. With this device, the superintendent can tell how compacted the area really is.

"Superintendents are in the position of trying to please all the golfers who play at their clubs. If the golfers are complaining that the greens are too soft or too hard, the superintendent can take a compactness reading. He's got a device that can take out the guesswork."

Three other tools — moisture sensor, and special versions of the digital thermometer and pH meter — also help the superintendent



Tom and John Mascaro with some of their inventions.

diagnose problems with his turf.

The moisture sensor, which measures the moisture absorption at any selected depth between one and six inches, helps the superintendent plan his irrigation program. The digital thermometer, helps him enhance seed germination or head off heat-related stress problems. The pH meter helps the superintendent make micro-adjustments to the soil alkalinity.

Right now, the Infiltrometer, which tests soil percolation in 15 minutes, is the Mascaros' pride and joy.

"It's a blockbuster," says Tom.

"Usually, a soil sample is sent to a laboratory," explains John, "and the lab mixes the sample,

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compacts it to a specific weight and then tests how long it takes water to run through the area.

"The advantage of the Infiltrometer is that it gives the superintendent this information, not in the lab, but in the field. You aren't just getting the soil infiltration, but you are getting soil infiltration on number-seven green. You are getting a truer reading." As with all the Mascaros' tools, the Infiltrometer comes with a complete set of instructions, including all the data needed to analyze the results obtained.

"If it shows that water is percolating at less than four inches an hour, that's bad," says John. "Anything under one inch is critical... and we've seen readings that low in some tests we have done."

Two other Mascaro devices are in production and soon will hit the marketplace: the Singafier and the Aeriforke.

The former kills weeds by using a concentrated propane flame for killing crabgrass and goosegrass. It's extremely popular with environmental activists and a South Florida chapter of the Audubon Society already has two of them.

"There's no residue, no chemicals, it's very simple to use and very inexpensive," says the elder Mascaro. Penn State University is developing a larger version of the device, he adds.

"The larger models can be used to kill weeds in bunkers without chemicals," he says. "That way, when sand is blasted out of traps and lands on the green, it doesn't contain any herbicides."

The Aeriforke is a hand aerifier for homeowners.

"You'd be surprised how many homeowners are aware that turf is aerified on golf courses, but they don't have an easy way to do the same thing on their own lawns," says John.

Tom says it may be marketed as an alternative form of exercise.

"Instead of 'aerobicizing,' people could be 'grassercizing,'" he says.

The end of the Mascaro line of inventions is not in sight, both say. Imagineering is an ongoing activity.

"My dad has always said, 'Just because people are doing things one way doesn't mean it's the only way to do it. You can look at any operation on a golf course and there can be a better way to do it.'"

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President honors Jacobsen for exports

Jacobsen Division of Textron was honored by President George Bush for its export success during a recent ceremony at the White House. The company received the U.S. Commerce Department's "E Star" Award for outstanding export sales.

In accepting the award, Jacobsen President Robert Reid credited increased emphasis on overseas markets, spearheaded by the company's international operations department, and a strong network of foreign of foreign distributors for making the award possible.

"We have been responsive to the needs of international markets, supplying our customers with quality turf products," Reid said. "We have a very competent group of distributors throughout the world, and we've been able to benefit from the growing worldwide interest in turf care in general and golf in particular. These factors are helping Jacobsen experience strong international sales growth."

The "E Star" is given to companies which already have received the Commerce

Jacobsen
Textron
President
Robert
Reid
receives
the E-Star
Award
from
President
Bush with
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Carla Hills
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Department's "E Award," which Jacobsen won in 1974 for export sales of consumer lawn and garden equipment.

Jacobsen now manufactures only professional turf equipment for golf courses, parks, sports fields and other large turf areas.

Mike Young Designs names first VP

Mike Young Designs/Turf Mark Golf Services of Watkinsville, Ga., has named Tracy Meeks, former superintendent at Berkeley Hills CC in Norcross, Ga., as the firm's first vice president.



Tracy Meeks

Meeks, who holds a B.A. in turfgrass maintenance from the University of Georgia, will oversee day-to-day operation of the company's

golf course construction projects.

Before moving to Berkeley Hills, Meeks had been assistant superintendent at Cherokee CC in Atlanta, where he was involved with the construction of a nine-hole addition to the club's 18-hole layout.

Lofts taps A&M grad to head new facility

The former assistant to Dr. Milton Engelke at Texas A&M University's turfgrass breeding research project in Dallas has been named to head the new Lofts Seed research facility near Albany, Ore.

Dr. Virginia Lehman, who completed her doctoral studies at Texas A&M earlier this year, earned her master's degree from the University of Idaho, specializing in turfgrass breeding and seed production.

Lofts also operates a re-

Turf Industry Roundup

Companies doing business with golf course superintendents in Florida are invited to submit their news releases to *The Florida Green*, c/o Janlark Communications, 1206 Kimberle Court, Auburndale, FL 33823. We cannot accept items for this section over the telephone.

search facility in New Jersey.

Ciba-Geigy picks turf manager

Bernd Druebbisch is the new product manager for herbicides with Ciba-Geigy's turf and ornamental products group. He will be responsible for the company's Pennant herbicide, a control for yellow nutsedge and other weeds.

Before joining the turf and ornamental division, Druebbisch was product manager for Ridomil, an agricultural fungicide. He managed the product in Africa and Asia.

Druebbisch moves from Ciba-Geigy's worldwide headquarters in Basel, Switzerland, to the the company's U.S. headquarters in Greensboro, N.C.



Fuller Tresca, Jr., right, and Jacobsen President Robert Reid

PGA Show moves to Friday-Monday

The PGA Merchandise Show will change to a Friday-Monday format next year, Jan. 25-28, at the Orange County Convention / Civic Center in Orlando.

The four-day, Friday-Monday pattern will be maintained through the year 2000 except in 1993, when a scheduling conflict forces a return to the Saturday-Tuesday format.

The format switch was made to reduce the time exhibitors must spend away from the office and to allow all attendees to take advantage of more cost-effective airline prices.

"Member-Only Day" has been reduced to the first four and a half hours of the show on Friday, from 8:30 a.m. to 1 p.m.



Turf students from all over the country at Jacobsen's annual seminar

Tresca named Top Performer

Tresca Industries of Jacksonville and Orlando was honored by the Jacobsen Division of Textron with the manufacturer's Top Performer Award for 1989 at the GCSAA Convention and Show in Orlando last February.

Florida supt. talks at Jake seminar

Tom Alex, superintendent at Grand Cypress Resort in Orlando, was one of the faculty members for the 23rd annual Jacobsen College Student Seminar at the company's headquarters in Racine, Wis.

The seminar brought together 36 students from turf programs throughout North America and two students from the United Kingdom.

Students heard lectures on subjects ranging from budget preparation to employee training to environmental management.

"I talked about a little bit of everything," said Alex, whose lecture was entitled, "The Daily Pressures of Maintaining a Golf Course."

"The neatest thing about the session was the final afternoon session when they put all the speakers on a panel and let the students fire questions for three hours.

"The whole seminar is kind of neat. I'd go back if they asked. Any superintendent should be delighted to be asked. Those kids were the cream of the crop—I came back with a couple of resumes.

"I'm surprised other manufacturers don't do the same thing."

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They were on the evening newscast.

Dramatic ground and aerial pictures of the fires in the Everglades burning off thousands of acres. There was a shot taken from the ground level at night that intrigued me. You could see the long line of flames against the darkness of the night.

From afar the flames looked like some gigantic hand saw and the flames leaping upward were the teeth.

Florida's drought poses challenges, opportunities

There were long fingers, then tiny short fingers beside one another.

The long fingers were made, I suppose, when the fire hit a thick clump of weeds and grass, and the short fingers were made as the fire swept along ordinary short weeds and grass. I thought about our association. The flames were like our members. The tall flames represent the members that are on fire for our industry and are doing everything they can (including water conservation) to promote the image of the golf course superintendent as a true manager and professional. The small flames represent the members that do not take an active part in our association or spend the time promoting the positive side of golf course management.

Right now we need every golf course superintendent in Florida to take an active role in overcoming a very

serious problem facing us: Florida's drought. Our population is growing at a staggering 5,000 per week. The building of houses and roads decreases our watersheds. The water crisis is here and it can only get worse over the next decade.

In 1780, Florida had 20.3 million acres of wetlands covering more than half the state. By 1980, the number had dwindled to 11 million acres.

Will golf courses in Florida survive the water crunch? If golf course superintendents pull together, then the answer is "yes." We will not only survive, we will prosper.

Superintendents, I have found over the years, are a rare breed that loves the land and everything that comes from it. The active will encourage the inactive

Will golf courses in Florida survive the water crunch? If golf course superintendents pull together, then the answer is "yes." We will not only survive, we will prosper.

and we will, I believe, learn how to live with restricted water use.

The Florida Golf Course Superintendents Association needs to fund research on drought and heat-tolerant grasses. Seminars should be sponsored so superintendents will know how to monitor their irrigation systems efficiently. Reports must be issued on the latest state-of-the-art computerized systems, variable speed, energy-wise



Dan Jones
Dan Jones, CGCS

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AFTERWORDS

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This is water that can be used for irrigation and, at the same time, it will help reduce the risks of contaminating our environment: Nature has given us grass as an excellent filter for the effluent.

The voices of the golf course su-

perintendents in Florida must become strong and unified to promote our need for sewage effluent. We must explain why healthy golf courses are

Effluent water will be the answer for golf courses in Florida. . . Every month, Dade and Broward counties alone dump 10 billion gallons of effluent into the ocean.

critical to the economic well-being of our state.

Florida receives 25 billion gallons of water a day from underground rivers in Alabama and Georgia and

another 150 billion gallons a day from rain. We lose 107 billion gallons daily to evapotranspiration and 68 billion gallons flow into the ocean.

Florida has about a quadrillion (1 and 15 zeros) gallons of water in its aquifer. With 800 new residents moving to Florida every day, our water usage increases by 100,000 gallons a day. That's 37 million gallons a year, of which 35 million gallons will end up as wastewater.

By using sewage effluent, golf courses could help preserve our precious water for home use and prevent saltwater intrusion along the coastal areas. That is the good news. The bad news is we will lose it if we do not act now. Farmers, citrus growers and other groups are also looking for al-

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The Age of Science had arrived...

from page 12

And life became more enjoyable.

The men called Farmers became efficient.

A single farmer grew food for 28

Industrialists, Artists and Doctors.

And Writers, Engineers, and Teachers as well.

To protect his crops and animals, the Farmer

produced substances to repel or destroy

Insects, Diseases and Weeds.

These were called Pesticides.

*Similar substances were made by Doctors to
protect humans.*

These were called Medicine.

*The Age of Science had arrived and with it
came better diet and longer, happier lives
for more members of Society.*

Soon it came to pass

That certain well-fed members of Society

Disapproved of the Farmer using Science.

They spoke harshly of his techniques for

feeding, protecting, and preserving plants

and animals.

They deplored his upsetting the Balance of

Nature;

They longed for the Good Old Days.

*And this had emotional appeal to the rest of
Society.*

*By this time Farmers had become so efficient,
Society had given them a new title:*

Unimportant Minority.

*Because Society could not ever imagine a
shortage of food.*

*Laws were passed abolishing Pesticides,
Fertilizers, and Food Preservatives.*

Insects, Diseases, and Weeds flourished.

Crops and animals died.

Food became scarce.

*To survive, Industrialists, Artists and Doctors
were forced to grow their own food.*

They were not very efficient.

*People and governments fought wars to gain
more agricultural land.*

Millions of people were exterminated.

*The remaining few lived like animals,
Feeding themselves on creatures and plants
around them.*

*And this was called, "In Balance with
Nature."*

Dr. John Carew

This poem by Dr. John Carew, the late chairman of the horticulture department at Michigan State University, was first published as a column in *American Vegetable Grower* in 1970. It is reprinted here with blanket permission from the original publisher.

*Our water goal:
the right kind,
the right
amount, the
right place at
the right time.*

*The days of
unlimited water
use are over.*

from page 79

ternate sources of water.

Every golf course superintendent, golf pro, golf course manager and owner should write his representative in Tallahassee, the water management agency in his area, governing bodies of his city and county and the directors of sewage facilities to tell them of our water needs and our desire for sewage effluent.

If, after reading this, you do not think we

need to act now, talk to our peers in California. We are only five years behind them and closing the gap fast.

Our water goal: the right kind, the right amount, the right place at the right time. The days of unlimited water use are over. This natural resource is decreasing, and we need a plan to keep Florida green and growing. We must prepare for tomorrow by getting involved today.

That's spring dead spot you see. Before now, there was no proven way to keep it from spoiling your Bermudagrass turf. But now there's Rubigan. Rubigan is labeled to control spring dead spot.

For optimum control, apply Rubigan A.S. at 4.0 oz./1,000 square feet for season-long, spring dead spot control. Or if you miss the September application, apply Rubigan A.S. at 6.0 oz./1,000 square feet in October or November.

So before spring dead spot spoils your Bermudagrass turf, put yourself in control with Rubigan. Talk with your Elanco distributor for details. Or call toll-free: **1-800-352-6776**.

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Untreated spring dead spot

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